The Officers and Board of Directors welcome you to Chicago for the 92nd Annual Meeting of the North Central Section of the AUA, Inc. September 5 - 8, 2018 Fairmont Chicago, Millennium Park

2017 - 2018 NCS President:
Gary J. Faerber, MD
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule at a Glance</td>
<td>2</td>
</tr>
<tr>
<td>Hotel Directory</td>
<td>6</td>
</tr>
<tr>
<td>Promotional Partners</td>
<td>7</td>
</tr>
<tr>
<td>Exhibitors</td>
<td>8</td>
</tr>
<tr>
<td>Industry Satellite Symposium Events</td>
<td>9</td>
</tr>
<tr>
<td>CME Information</td>
<td>10</td>
</tr>
<tr>
<td>2017 - 2018 Board of Directors</td>
<td>13</td>
</tr>
<tr>
<td>2017 - 2018 Committee Listing</td>
<td>14</td>
</tr>
<tr>
<td>NCS Representatives to AUA Committees</td>
<td>17</td>
</tr>
<tr>
<td>Past Presidents and Annual Meeting Sites</td>
<td>18</td>
</tr>
<tr>
<td>Board of Directors and Committee Meetings</td>
<td>21</td>
</tr>
<tr>
<td>General Meeting Information</td>
<td>22</td>
</tr>
<tr>
<td>Evening Functions</td>
<td>23</td>
</tr>
<tr>
<td>Speaker Information</td>
<td>24</td>
</tr>
<tr>
<td>Program</td>
<td>25</td>
</tr>
<tr>
<td>Wednesday, September 5</td>
<td>25</td>
</tr>
<tr>
<td>Thursday, September 6</td>
<td>29</td>
</tr>
<tr>
<td>Friday, September 7</td>
<td>50</td>
</tr>
<tr>
<td>Saturday, September 8</td>
<td>67</td>
</tr>
<tr>
<td>Participant Index</td>
<td>78</td>
</tr>
<tr>
<td>Podiums</td>
<td>87</td>
</tr>
<tr>
<td>Posters</td>
<td>190</td>
</tr>
<tr>
<td>Annual Business Meeting Agenda</td>
<td>223</td>
</tr>
<tr>
<td>Membership Candidates and Transfers</td>
<td>224</td>
</tr>
<tr>
<td>Membership Summary Report</td>
<td>225</td>
</tr>
<tr>
<td>Proposed Bylaws Changes</td>
<td>226</td>
</tr>
<tr>
<td>Bylaws</td>
<td>228</td>
</tr>
<tr>
<td>In Memoriam</td>
<td>240</td>
</tr>
<tr>
<td>Award Recipients</td>
<td>241</td>
</tr>
<tr>
<td>NCS Urology Residency Programs</td>
<td>247</td>
</tr>
<tr>
<td>AUA Officers</td>
<td>250</td>
</tr>
<tr>
<td>AUA Foundation Research Scholars</td>
<td>250</td>
</tr>
</tbody>
</table>

**POLICY: Filming, Photography, Audio Recording, and Cell Phones**

No attendee/visitor at the NCS 92nd Annual Meeting may record, film, tape, photograph, interview, or use any other such media during any presentation, display, or exhibit without the express, advance approval of the NCS Executive Director. The policy applies to all NCS members, nonmembers, guests, and exhibitors, as well as members of the print, online, or broadcast media.
## Schedule at a Glance

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 a.m. - 5:30 p.m.</td>
<td>Registration/Information Desk Hours: <em>International Foyer</em></td>
<td></td>
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<tr>
<td>7:00 a.m. - 5:30 p.m.</td>
<td>Speaker Ready Room Hours: <em>Royal Room</em></td>
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<tr>
<td>7:30 a.m. - 11:00 a.m.</td>
<td>Spouse/Guest Hospitality Suite Hours: <em>Embassy Room</em></td>
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<tr>
<td>7:30 a.m. - 8:30 a.m.</td>
<td>Breakfast: <em>International Foyer</em></td>
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<tr>
<td>6:30 p.m. - 8:30 p.m.</td>
<td>Welcome Reception in Exhibit Hall: <em>Imperial Ballroom</em></td>
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<tr>
<td>8:00 a.m.</td>
<td>Robotic Urologic Surgery: Technique and Troubleshooting- A Video</td>
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<td></td>
<td>Session with Panel Discussion: <em>International Ballroom</em></td>
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<tr>
<td>9:30 a.m.</td>
<td>Defining the Opioid Epidemic and Its Implications for Prescribing</td>
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<tr>
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<td>Practices in Urology: <em>International Ballroom</em></td>
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<tr>
<td>10:30 a.m.</td>
<td><strong>ABU Update:</strong> <em>International Ballroom</em></td>
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<tr>
<td>10:40 a.m.</td>
<td><strong>Break:</strong> <em>International Foyer</em></td>
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<tr>
<td>11:00 a.m.</td>
<td>AUA Course of Choice Lecture - AUA Guidelines 2017: Non-Muscle</td>
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<td></td>
<td>Invasive Bladder Cancer: <em>International Ballroom</em></td>
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<tr>
<td>12:00 p.m.</td>
<td><strong>Lunch:</strong> <em>International Foyer</em></td>
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<tr>
<td>1:15 p.m.</td>
<td>Health Policy and Practice Management: <em>International Ballroom</em></td>
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<tr>
<td></td>
<td><strong>Primary Care Update in Urology:</strong> <em>Gold Room</em></td>
<td></td>
</tr>
</tbody>
</table>

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*Back to Table of Contents*
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 a.m.</td>
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</tr>
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<td>Exhibit Hall Hours: Imperial Ballroom</td>
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<tr>
<td>7:30 a.m.</td>
<td>Spouse/Guest Hospitality Suite Hours: Embassy Room</td>
</tr>
<tr>
<td>6:00 p.m.</td>
<td>Young Urologists Mixer: Regent Room</td>
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<tr>
<td>6:30 a.m.</td>
<td>Video Session I: Gold Room</td>
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<td></td>
<td>Adrenal/ Kidney/ Ureter - Malignant Podium Session: International Ballroom</td>
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<tr>
<td>7:30 a.m.</td>
<td>Break - Visit Exhibits: Imperial Ballroom</td>
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<tr>
<td>8:00 a.m.</td>
<td>President's Welcome: International Ballroom</td>
</tr>
<tr>
<td>8:05 a.m.</td>
<td>State-of-the-Art Lecture: Treatment of Priapism: International Ballroom</td>
</tr>
<tr>
<td>8:40 a.m.</td>
<td>State-of-the-Art Lecture: New Devices and Technologies for OAB Management: International Ballroom</td>
</tr>
<tr>
<td>9:15 a.m.</td>
<td>Panel Discussion: Controversies in Pediatric Urology: International Ballroom</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>Advances in Bladder Cancer: Making Real Progress in 2018:</td>
</tr>
<tr>
<td></td>
<td>International Ballroom</td>
</tr>
<tr>
<td>10:30 a.m.</td>
<td>Break - Visit Exhibits: Imperial Ballroom</td>
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<tr>
<td>11:00 a.m.</td>
<td>Panel Discussion: Prostate Cancer: International Ballroom</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Industry Sponsored Lunch Symposium: Crystal Room</td>
</tr>
<tr>
<td></td>
<td>Industry Sponsored Lunch Symposium: Regent Room</td>
</tr>
<tr>
<td>1:15 p.m.</td>
<td>Case Discussion: Urolithiasis Case Panel: International Ballroom</td>
</tr>
<tr>
<td>2:00 p.m.</td>
<td>Pediatric Podium Session: Rouge Room</td>
</tr>
<tr>
<td></td>
<td>Endourology/ Stone Disease I Podium Session: Gold Room</td>
</tr>
<tr>
<td></td>
<td>Socioeconomics/ Health Policy &amp; Outcomes Research Podium Session: International Ballroom</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>State-of-the-Art Lecture: Innovations in Renal and Ureteral Stone Management: International Ballroom</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>Break - Visit Exhibits: Imperial Ballroom</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>Prostate Malignant I Podium Session: International Ballroom</td>
</tr>
<tr>
<td></td>
<td>Penis/ Urethra/ Testis/ Scrotum - Benign/ Malignant Podium Session: Gold Room</td>
</tr>
<tr>
<td></td>
<td>Pediatrics Poster Session: State Room</td>
</tr>
<tr>
<td></td>
<td>Patient Safety, Quality Improvement Initiatives &amp; Outcomes Research Poster Session: Ambassador Room</td>
</tr>
<tr>
<td>Time</td>
<td>Event Description</td>
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<td>6:00 a.m.</td>
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<tr>
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</tr>
<tr>
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<td>Exhibit Hall Hours: Imperial Ballroom</td>
</tr>
<tr>
<td>7:30 a.m. - 11:00 a.m.</td>
<td>Spouse/Guest Hospitality Suite Hours: Embassy Room</td>
</tr>
<tr>
<td>6:00 p.m. - 7:30 p.m.</td>
<td>President's Reception: Rouge Room</td>
</tr>
<tr>
<td>6:30 a.m.</td>
<td>Video Session II: Gold Room</td>
</tr>
<tr>
<td>6:30 a.m.</td>
<td>Male and Couple Infertility/ Sexual Dysfunction Podium Session: International Ballroom</td>
</tr>
<tr>
<td>7:30 a.m.</td>
<td>Break - Visit Exhibits: Imperial Ballroom</td>
</tr>
<tr>
<td>8:00 a.m.</td>
<td>State-of-the-Art Lecture: Prostate Cancer Revisited: International Ballroom</td>
</tr>
<tr>
<td>8:45 a.m.</td>
<td>Panel Discussion: Infertility: International Ballroom</td>
</tr>
<tr>
<td>9:30 a.m.</td>
<td>Break - Visit Exhibits: Imperial Ballroom</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>NCS Resident Bowl: Round 1: International Ballroom</td>
</tr>
<tr>
<td>10:45 a.m.</td>
<td>Women in Urology Session: Gold Room</td>
</tr>
<tr>
<td>10:45 a.m.</td>
<td>Young Urologists Speed Mentoring Program: Chancellor Room</td>
</tr>
<tr>
<td>10:45 a.m.</td>
<td>Prostate Malignant II Podium Session: International Ballroom</td>
</tr>
<tr>
<td>10:45 a.m.</td>
<td>Adrenal/ Kidney/ Urter - Benign/ Malignant Poster Session: Ambassador Room</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Industry Sponsored Lunch Symposium: Crystal Room</td>
</tr>
<tr>
<td>1:15 p.m.</td>
<td>NCS Faculty Lecture: Testosterone-What’s The Fuss?: International Ballroom</td>
</tr>
<tr>
<td>1:55 p.m.</td>
<td>AUA Update: International Ballroom</td>
</tr>
<tr>
<td>2:10 p.m.</td>
<td>Report from the NCS AUA Foundation Scholar: International Ballroom</td>
</tr>
<tr>
<td>2:20 p.m.</td>
<td>Award Presentation: John D. Silbar, Thirlby and Traveling Fellowship: International Ballroom</td>
</tr>
<tr>
<td>2:25 p.m.</td>
<td>Presidential Address: The Importance of Mentors and Mentoring: International Ballroom</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>Annual Business Meeting: International Ballroom</td>
</tr>
<tr>
<td>3:45 p.m.</td>
<td>Panel Discussion: Urologic Reconstruction: International Ballroom</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>Bladder Malignant Podium Session: Gold Room</td>
</tr>
<tr>
<td></td>
<td>Laparoscopy/ Robotics Podium Session: International Ballroom</td>
</tr>
<tr>
<td></td>
<td>Endourology/ Stone Disease Poster Session: State Room</td>
</tr>
<tr>
<td></td>
<td>Prostate Malignant Poster Session: Ambassador Room</td>
</tr>
</tbody>
</table>
# SATURDAY, SEPTEMBER 8, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 a.m. - 8:00 a.m.</td>
<td>Breakfast: <strong>International Foyer</strong></td>
</tr>
<tr>
<td>6:30 a.m. - 12:00 p.m.</td>
<td>Registration/Information Desk Hours: <strong>International Foyer</strong></td>
</tr>
<tr>
<td>6:30 a.m. - 12:00 p.m.</td>
<td>Speaker Ready Room Hours: <strong>Royal Room</strong></td>
</tr>
<tr>
<td>7:30 a.m. - 11:00 a.m.</td>
<td>Spouse/Guest Hospitality Suite Hours: <strong>Embassy Room</strong></td>
</tr>
<tr>
<td>7:00 a.m.</td>
<td><strong>Patient Safety &amp; Quality Improvement Initiatives Podium Session:</strong> <strong>Rouge Room</strong></td>
</tr>
<tr>
<td>7:00 a.m.</td>
<td><strong>Endourology/ Stone Disease II Podium Session:</strong> <strong>Gold Room</strong></td>
</tr>
<tr>
<td>7:30 a.m. - 8:00 a.m.</td>
<td>Trauma/ Transplant Podium Session: <strong>International Ballroom</strong></td>
</tr>
<tr>
<td>8:00 a.m.</td>
<td><strong>Roundtable Discussion: Future of Urology:</strong> <strong>International Ballroom</strong></td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td><strong>Bizarre and Interesting Cases Podium Session:</strong> <strong>International Ballroom</strong></td>
</tr>
<tr>
<td>9:45 a.m.</td>
<td><strong>Break:</strong> <strong>International Foyer</strong></td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td><strong>Urinary Incontinence/Neurourology Podium Session:</strong> <strong>International Ballroom</strong></td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td><strong>Prostate Benign/ Malignant Podium Session:</strong> <strong>Gold Room</strong></td>
</tr>
<tr>
<td>10:45 a.m.</td>
<td><strong>NCS Resident Bowl Finals:</strong> <strong>International Ballroom</strong></td>
</tr>
<tr>
<td>11:45 a.m.</td>
<td><strong>Best Poster, Best Video, and Bizarre &amp; Interesting Case Award Presentations:</strong> <strong>International Ballroom</strong></td>
</tr>
<tr>
<td>11:50 a.m.</td>
<td><strong>Incoming NCS President Remarks:</strong> <strong>International Ballroom</strong></td>
</tr>
</tbody>
</table>
## Hotel Directory

**General Session:**
- International Ballroom (2nd floor)

**Breakout Rooms:**
- Gold Room (2nd floor)
- Rouge Room (lobby level)

**Exhibit Hall:**
- Imperial Ballroom (B2 level)

**Industry Sponsored Symposium Events:**
- Crystal Room (3rd floor)
- Regent Room (3rd Floor)

**Poster Sessions:**
- Ambassador Room (2nd floor)
- State Room (2nd floor)

**Speaker Ready Room:**
- Royal Room (B2 level)

**Spouse/Guest Hospitality Suite:**
- Embassy Room (2nd floor)

**Committee Meetings:**
- Regal Room (B2 level)
- Chancellor Room (3rd floor)
Promotional Partners

NCS recognizes and welcomes our 2018 Promotional Partners
(as of 8/28/2018)

Platinum Partners
Astellas Pharma and Pfizer Oncology
Genomic Health
Janssen Biotech, Inc.
Merck & Co., Inc.

Silver Partners
Astellas Pharma US, Inc.
Avadel Pharmaceuticals
Bayer Healthcare
Endo Pharmaceuticals
Lumenis, Inc.
Marley Drug, Inc
Myriad Genetic Laboratories, Inc.
University Compounding Pharmacy of Michigan
Exhibitors

Thank you to our 2018 Exhibitors
(as of 8/28/2018)

AbbVie
Allergan, Inc.
American Urological Association, Inc.
Antares Pharma
Astellas Pharma and Pfizer Oncology
Astellas Pharma US, Inc.
Augmenix
Avadel Pharmaceuticals
Bayer Healthcare
BK Ultrasound
Blue Earth Diagnostics, Inc
Boston Scientific Corporation
Coloplast
Cook Medical
Creative Medical Technologies
Dendreon Pharmaceuticals LLC
Dornier MedTech
DuPage Medical Group
EDAP TMS
Endo Pharmaceuticals
Exosome Diagnostics, Inc
Ferring Pharmaceuticals
GE Healthcare
Genomic Health
HealthTronics, Inc.
Henry Ford Health System
Hitachi Healthcare
Indiana University Health

Janssen Biotech
KARL STORZ
Koelis
LABORIE
Liebel-Flarsheim, a Guerbet Company
LithoLyte
Lumenis, Inc.
Marley Drug, Inc
MDxHealth
Medispec, Ltd.
Medtronic, Inc.
Merck & Co., Inc.
Myriad Genetic Laboratories, Inc.
NeoTract Teleflex
NextMed, LLC
Olympia Pharmacy
Olympus America
OPKO Health, Inc
Pacific Edge Diagnostics USA Ltd.
PathRight Medical
Photocure
Retrophin
Richard Wolf Medical Instruments, Corp.
TOLMAR Pharmaceuticals
United Medical Systems
University Compounding Pharmacy
University Compounding Pharmacy of Michigan
Uromedica
# Industry Satellite Symposium Events

## THURSDAY, SEPTEMBER 6, 2018

| 12:00 p.m. - 1:15 p.m. | Industry Sponsored Lunch Symposium  
|------------------------|---------------------------------|
| **Location:** Crystal Room | **“A Treatment Option for Certain Patients With Locally Advanced or Metastatic Urothelial Carcinoma”**  
| | Vahan Kassabian, MD  
| | Atlanta, GA |

## FRIDAY, SEPTEMBER 7, 2018

| 12:00 p.m. - 1:15 p.m. | Industry Sponsored Lunch Symposium  
|------------------------|---------------------------------|
| **Location:** Crystal Room | **“A Treatment Option for Castration-Resistant Prostate Cancer (CRPC)”**  
| | Paul Sieber, MD  
| | Lancaster Urology  
| | Lancaster, PA |

| 12:00 p.m. - 1:15 p.m. | Industry Sponsored Lunch Symposium  
|------------------------|---------------------------------|
| **Location:** Regent Room | **“Prostate Cancer Biomarkers for Prognosis and Treatment Decision Making”**  
| | Andrew Stephenson, MD, FRCSC, FAC  
| | Glickman Urological and Kidney Institute at Cleveland Clinic |
CME Information

Educational Needs

The Secretary of the North Central Section (Dr. Jeffrey Triest), consulted with other members of the Program Committee and the Executive Committee members, including the current NCS President Dr. Gary Faerber, recent Past-President Dr. James Ulchaker, and Chair of the NCS Education Committee, Dr. Bradley Schwartz regarding the needs we are attempting to fulfill through our annual scientific program. It was agreed by the above committee members that there continues to be significant educational needs for our annual meeting and scientific program.

Urologic abnormalities can present with a myriad of clinical symptoms and signs. Accurate differential diagnosis and disease management, which meets current standards of care, requires ongoing review of the presentations of various urologic abnormalities as well as the appropriate use of safe and cost-effective imaging modalities and various pharmacologic, minimally invasive, and operative management options. In addition, advancements in medical science and progress in management of various urologic diseases require basic and clinical research. Presentation and discussion of such peer-reviewed and Abstract Reviewer-selected summaries and results of investigations provide “cutting edge” updates for practicing clinicians and essential feedback to researchers on the practical applications and translation of their investigations to clinical practice.

The American Urological Association provided many services and Health Policy support to practicing Urologists in the NCS region and the Past President, AUA Secretary, AUA Chairman of Education, NCS Board Representative, will provide an update on the activities of the AUA.

Educational Objectives

At the conclusion of the NCS 92nd Annual Meeting, attendees will be able to:

1. Apply Evidence Based Medicine (EBM) in urologic practice specifically incorporating AUA Guidelines into daily practice.
2. Explain the role of surgical management of renal/ureteral stone disease.
3. Explain the evolving role of active surveillance as a treatment strategy for patients with low risk Prostate cancer (LRPC) and the use of tools such as multiparametric MRI and genomic testing for prostate cancer risk stratification.
4. Describe the role of urologists in the management of castrate resistant prostate cancer.
5. Analyze data pertaining to various pharmacologic and surgical treatments for voiding dysfunction and urinary incontinence.
6. Utilize evidence based treatment algorithms to manage patients with challenging urolithiasis.
7. Integrate new and modified treatments for erectile dysfunction, Peyronies disease, infertility, and use of testosterone.
8. Explain the management of superficial and invasive bladder cancer and the associated morbidity and mortality of different methods of treatment.
9. Explain coding, physician payment reforms, and collaboratives between payers and providers.
10. Review the modalities of partial nephrectomy which include open, robotic laparoscopy and ablative therapies.
11. Discuss the management strategies for pediatric ureteropelvic junction obstruction (UPJ) repair including robotic, laparoscopic and endoscopic techniques.
12. Discuss the AUA guidelines for surgical and nonsurgical management of urinary trauma.
13. Discuss surgical approaches to urethral stricture disease.
14. Review and discuss unusual urologic cases.
15. Identify urologic surgery complications and resolution for better outcomes.
16. Describe the opioid epidemic and prescribing practices in urology.
17. Outline options for treatment of Priapism.
18. Describe urologic reconstruction options and outcomes.
19. Discuss the future of urology.

Accreditation Information

Accreditation: This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Urological Association (AUA) and the North Central Section of the AUA (NCS). The American Urological Association (AUA) is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation: The American Urological Association designates this live activity for a maximum of 28.50 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other Learners: The AUA is not accredited to offer credit to participants who are not MDs or DOs. However, the AUA will issue documentation of participation that states that the activity was certified for AMA PRA Category 1 Credit™.

Evidence Based Content: It is the policy of the AUA to ensure that the content contained in this CME activity is valid, fair, balanced, scientifically rigorous, and free of commercial bias.

AUA Disclosure Policy: All persons in a position to control the content of an educational activity (i.e., activity planners, presenters, authors) are required to disclose to the provider any relevant financial relationships with any commercial interest. The AUA must determine if the individual’s relationships may influence the educational content and resolve any conflicts of interest prior to the commencement of the educational activity. The intent of this disclosure is not to prevent individuals with relevant financial relationships from participating, but rather to provide learners information with which they can make their own judgments.

The disclosure report for this meeting may be found online by visiting: ncsaua.org/disclosures

Resolution of Identified Conflict of Interest: All disclosures will be reviewed by the program/course directors or editors for identification of conflicts of interest. Peer reviewers, working with the program directors and/or editors, will document the mechanism(s) for management and resolution of the conflict of interest and final approval of the activity will be documented prior to implementation. Any of the mechanisms below can/will be used to resolve conflict of interest:

- Peer review for valid, evidence-based content of all materials associated with an educational activity by the course/program director, editor, and/or Education Conflict of Interest Review Work Group or its subgroup.
- Limit content to evidence with no recommendations.
- Introduction of a debate format with an unbiased moderator (point-counterpoint).
- Inclusion of moderated panel discussion.
- Publication of a parallel or rebuttal article for an article that is felt to be biased.
- Limit equipment representatives to providing logistics and operation support only in procedural demonstrations.
- Divestiture of the relationship by faculty.

Off-label or Unapproved Use of Drugs or Devices: The audience is advised that this continuing medical education activity may contain reference(s) to off-label or unapproved uses of drugs or devices. Please consult the prescribing information for full disclosure of approved uses.
AUA Participant Information & Policies

Disclaimer: The opinions and recommendations expressed by faculty, authors and other experts whose input is included in this program are their own and do not necessarily represent the viewpoint of the AUA.

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2017 - 2018 Board of Directors

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Gary J. Faerber, MD

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Mark D. Stovsky, MD, MBA, FACS

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Historian
Edward E. Cherullo, MD

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Illinois
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Minnesota, North Dakota, South Dakota
Badrinath R. Konety, MD, MBA

Ohio
Bodo E. Knudsen, MD, FRCSC

Wisconsin
David Ralph Paolone, MD

REPRESENTATIVE TO AUA BOARD OF DIRECTORS
Chandru P. Sundaram, MD, FACS

HEALTH POLICY COUNCIL CHAIR
James M. Dupree IV, MD, MPH

YOUNG UROLOGIST COMMITTEE

Young Urologist Committee Chair
Anthony John Polcari, MD

Young Urologist Committee Vice Chair
Kyle A. Richards, MD, FACS

HEADQUARTER OFFICE

Executive Director
Wendy J. Weiser

Associate Director
Samantha N. Panicola
2017 - 2018 Committee Listing

**Audit Committee**
James C. Ulchaker, MD, FACS (Committee Chair)
Mark D. Dabagia, MD, FACS (Committee Member)
Stephanie J. Kielb, MD (Committee Member)

**Bylaws Committee**
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Patrick H. McKenna, MD, FAAP, FACS (Committee Member)
Elizabeth B. Takacs, MD (Committee Member)
Jeffrey A. Triest, MD (Committee Member)

**Editorial and Awards Committee**
Aaron J. Milbank, MD (Committee Chair)
Michael R. Abern, MD (Committee Member)
Anne P. Cameron, MD, FPMRS (Committee Member)
Gary J. Faerber, MD (Committee Member)
Khurshid Ghani, MD, MBChB, MS, FRCS (Committee Member)

**Education Committee**
Bradley F. Schwartz, DO, FACS (Committee Chair)
Geoffrey N. Box, MD (Committee Member)
Ella J. Doerge, MD (Resident Representative)
Bodo E. Knudsen, MD, FRCSC (Board of Directors Representative)
Anthony J. Polcari, MD (Young Urologist Committee Chair)
Jeffrey A. Triest, MD (Secretary)

**Finance Committee**
Mark D. Stovsky, MD, MBA, FACS (Committee Chair)
Gary J. Faerber, MD (President)
Matthew T. Gettman, MD (Treasurer-Elect)
David F. Jarrard, MD (President-Elect)
Jeffrey A. Triest, MD (Secretary)
James C. Ulchaker, MD, FACS (Immediate Past President)

**Health Policy Council**
James M. Dupree IV, MD, MPH (Committee Chair)
To Be Determined (Vice Chair)
Thomas H. Tarter, MD, PhD (Illinois)
Norm D. Smith, MD (Illinois)
Bradley G. Orris, MD (Indiana)
Teresa Diane Beam, MD, FACS (Indiana)
Brian Lane Gallagher, MD (Iowa)
James Andrew Brown, MD (Iowa)
Earl R. Koenig, MD (Michigan)
Leonard Jay Zuckerman, MD (Michigan)
Candace F. Granberg, MD (Minnesota, North Dakota, South Dakota)
Robert W. Geist, MD (Minnesota, North Dakota, South Dakota)
To Be Determined (Ohio)
To Be Determined (Ohio)
Timothy J. Kennedy, MD (Wisconsin)
Daniel H. Williams IV, MD (Wisconsin)

**Local Arrangements Committee**
Geoffrey N. Box, MD (Local Arrangements Chair)
Long Range Planning Committee
Jeffrey A. Triest, MD (Committee Chair)
Gary J. Faerber, MD (President)
Matthew T. Gettman, MD (Treasurer-Elect)
David F. Jarrard, MD (President-Elect)
Anthony J. Polcari, MD (Young Urologist Committee Chair)
Mark D. Stovsky, MD, MBA, FACS (Treasurer)
Chandru P. Sundaram, MD, FACS (NCS Representative to AUA Board of Directors)
James C. Ulchaker, MD, FACS (Immediate Past President)

Membership Committee
James C. Ulchaker, MD, FACS (Committee Chair)
Edward E. Cherullo, MD (Historian)
Damon J. Dyche, MD (Iowa)
Gary J. Faerber, MD (President)
Matthew T. Gettman, MD (Treasurer-Elect)
David F. Jarrard, MD (President-Elect)
Bodo E. Knudsen, MD, FRCSC (Ohio)
Badrinath R. Konety, MD, MBA (Minnesota, North Dakota, South Dakota)
Ranjiv Mathews, MD (Illinois)
David R. Paolone, MD (Wisconsin)
Anthony J. Polcari, MD (Young Urologist Committee Chair)
Charles R. Powell II, MD (Indiana)
Kyle A. Richards, MD, FACS (Young Urologist Committee Vice Chair)
Mark D. Stovsky, MD, MBA, FACS (Treasurer)
Chandru P. Sundaram, MD, FACS (Representative to AUA Board of Directors)
Dinesh J. Telang, MD (Michigan)
Jeffrey A. Triest, MD (Secretary)

Nominating Committee
James C. Ulchaker, MD, FACS (Chair)
Michael L. Guralnick, MD, FRCSC (Wisconsin)
Gary M. Kirsh, MD (Vice Chair)
Jane M. Lewis, MD (Minnesota, North Dakota, South Dakota)
Ranjiv Mathews, MD (Board of Directors Representative)
Ronald S. Suh, MD (Indiana)
Elizabeth B. Takacs, MD (Iowa)
Dinesh J. Telang, MD (Michigan)

Program Committee
Jeffrey A. Triest, MD (Committee Chair)
Geoffrey N. Box, MD (Local Arrangements Chair)
Gary J. Faerber, MD (President)
Kevin B. Ginsburg, MD (Resident Representative)
David F. Jarrard, MD (President-Elect)
Bradley F. Schwartz, DO, FACS (Education Committee Chair)
James C. Ulchaker, MD, FACS (Immediate Past President)

Young Urologists Committee
Anthony J. Polcari, MD (Committee Chair)
Kyle A. Richards, MD, FACS (Vice Chair)
Aaron Benson, MD (Illinois Representative)
Larissa Bresler, MD, DABMA (Illinois Representative)
Benjamin G. Martin, MD (Indiana Representative)
Clint Cary, MD, MPH (Indiana Representative)
Kenneth G. Nepple, MD (Iowa Representative)
Timothy P. Kresowik, MD (Iowa Representative)
Steven M. Lucas, MD (Michigan Representative)
Candace F. Granberg, MD (Minnesota Representative)
Sri Sivalingam, MD, FRCSC (Ohio Representative)
To Be Determined (Ohio Representative)
Sara L. Best, MD (Wisconsin Representative)
Nathan D. Grunewald, MD (Wisconsin Representative)
NCS Representatives to the AUA Committees

NOTE: The NCS members below list only those serving on AUA Committees selected by the NCS, and does not include NCS members serving on AUA Committees selected by the AUA.

AUA President
Robert C. Flanigan, MD, FACS

AUA Board of Directors
Patrick H. McKenna, MD, FAAP, FACS (Alternate Representative)
Manoj Monga, MD (Secretary)
Chandru P. Sundaram, MD, FACS (Representative)

AUA Bylaws Committee
Aaron J. Milbank, MD (Representative)
Elizabeth B. Takacs, MD (Representative)

AUA Editorial Board Committee
David C. Miller, MD, MPH (Representative)
Bradley F. Schwartz, DO, FACS (Representative)

AUA Health Policy Council
James M. Dupree IV, MD, MPH (Representative)
Peter M. Knapp Jr., MD, FACS (Representative)

AUA History Committee
Edward E. Cherullo, MD (Representative)

AUA Judicial & Ethics Council
Matthew T. Gettman, MD (Representative)
Gary J. Faerber, MD (Representative)

AUA Leadership Program
Humphrey O. Atiemo, MD (Representative)
Larissa Bresler, MD, DABMA (Representative)
Audrey C. Rhee, MD (Representative)

AUA Practice Management Committee
Teresa D. Beam, MD, FACS (Representative)

AUA Research Committee
Daniel A. Shoskes, MD (Representative)
John T. Wei, MD, MS (Representative)

AUA Resident's Committee
Kevin B. Ginsburg, MD (Representative)

AUA Section Secretaries/Membership Council
Jeffrey A. Triest, MD (Representative)

AUA Young Urologist Committee
Kyle A. Richards, MD, FACS (Representative)
<table>
<thead>
<tr>
<th>Year</th>
<th>President</th>
<th>City, State</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>James C. Ulchaker, MD, FACS</td>
<td>Scottsdale, AZ</td>
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<tr>
<td>2016</td>
<td>Gary M. Kirsh, MD</td>
<td>Chicago, IL</td>
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<tr>
<td>2015</td>
<td>Patrick H. McKenna, MD, FAAP, FACS</td>
<td>Amelia Island, FL</td>
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<td>2014</td>
<td>Christopher S. Cooper, MD, FAAP, FACS</td>
<td>Chicago, IL</td>
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<td>2013</td>
<td>Chandru P. Sundaram, MD</td>
<td>Naples, FL</td>
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<td>2012</td>
<td>Howard N. Winfield, MD, FACS</td>
<td>Chicago, IL</td>
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<td>2011</td>
<td>Peter M. Knapp Jr., MD, FACS</td>
<td>Rancho Mirage, CA</td>
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<td>2010</td>
<td>Steven W. Siegel, MD</td>
<td>Chicago, IL</td>
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<tr>
<td>2009</td>
<td>Stephen Y. Nakada, MD, FACS</td>
<td>Scottsdale, AZ</td>
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<td>2008</td>
<td>Jay B. Hollander, MD</td>
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<td>2007</td>
<td>Dennis A. Pessis, MD</td>
<td>Hollywood, FL</td>
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<td>2006</td>
<td>David E. Patterson, MD</td>
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<td>2005</td>
<td>Robert C. Flanigan, MD</td>
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<td>2004</td>
<td>Frank P. Begun, MD</td>
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<td>2003</td>
<td>Elroy D. Kursh, MD</td>
<td>Vancouver, BC, Canada</td>
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<td>2002</td>
<td>R. Bruce Bracken, MD</td>
<td>Chicago, IL</td>
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<td>2001</td>
<td>Richard A. Memo, MD</td>
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<td>2000</td>
<td>J. Randolf Beahrs, MD</td>
<td>Scottsdale, AZ</td>
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<td>1999</td>
<td>* Richard D. Williams, MD</td>
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<td>1998</td>
<td>James E. Lingeman, MD</td>
<td>Amelia Island, FL</td>
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<td>1997</td>
<td>Ananias C. Diokno, MD</td>
<td>Monterey, CA</td>
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<td>Earl H. Johnson, MD</td>
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<td>* Joseph W. Segura, MD</td>
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<td>Jack L. Summers, MD, PhD</td>
<td>Boca Raton, FL</td>
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<td>Arthur J. Johnson, MD</td>
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<td>1992</td>
<td>Eugene T. McEnery, MD</td>
<td>Dorado, PR</td>
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<td>Charles E. Hawtrey, MD</td>
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<td>Lawrence S. Ross, MD</td>
<td>Colorado Springs, CO</td>
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<td>Charles W. Troup, MD</td>
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<td>Paul R. Hartig, MD</td>
<td>Orlando, FL</td>
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<td>Kenneth A. Kropp, MD</td>
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<td>Joseph C. Cerny, MD</td>
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<td>1985</td>
<td>* John D. Silbar, MD</td>
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<td>1984</td>
<td>* Edwin D. Kennedy, MD</td>
<td>Cedar Rapids, IA</td>
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<td>1983</td>
<td>* John P. Donohue, MD</td>
<td>Maui, HI</td>
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<tr>
<td>Year</td>
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<tr>
<td>1982</td>
<td>Everette J. Duthoy, MD</td>
<td>Marco Island, FL</td>
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<td>1981</td>
<td>William E. Forsythe, MD</td>
<td>Indianapolis, IN</td>
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<td>David C. Utz, MD</td>
<td>Hamilton,</td>
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<td>Charles F. McKiel Jr., MD</td>
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<td>Laurence F. Greene, MD</td>
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<td>Harry E. Lichtwardt, MD</td>
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<td>1975</td>
<td>David Presman, MD</td>
<td>Phoenix, AZ</td>
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<td>1974</td>
<td>David A. Culp, MD</td>
<td>Columbus, OH</td>
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<td>1973</td>
<td>Lester Persky, MD</td>
<td>Acapulco, DF, Mexico</td>
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<td>George J. Bulkley, MD</td>
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<td>Jack N. Taylor, MD</td>
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<td>Myron H. Nourse, MD</td>
<td>Cincinnati, OH</td>
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<td>James W. Sargent, MD</td>
<td>Milwaukee, WI</td>
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<td>Baxter Allen Smith Jr., MD</td>
<td>Rochester, MN</td>
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<td>Paul J. Schildt, MD</td>
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<td>Frank B. Bicknell, MD</td>
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<td>1965</td>
<td>Ormond Culp, MD</td>
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<td>1964</td>
<td>Donald J. Jaffar, MD</td>
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<td>F. Harold Entz, MD</td>
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<td>Charles J. Cooney, MD</td>
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<td>Edwin C. Graf, MD</td>
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<td>T. Brent Wayman, MD</td>
<td>French Lick, IN</td>
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<td>N. Warren Bourne, MD</td>
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<td>C. Grafton Weller, MD</td>
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<td>John L. Emmett, MD</td>
<td>Mackinac Island, MI</td>
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<td>C.D. Creevy, MD</td>
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<td>1955</td>
<td>William J. Butler, MD</td>
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<td>1954</td>
<td>Rubin H. Flocks, MD</td>
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<td>1953</td>
<td>William J. Engel, MD</td>
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<td>1952</td>
<td>Reed M. Nesbit, MD</td>
<td>Minneapolis, MN</td>
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<td>1951</td>
<td>William N. Wishard Jr., MD</td>
<td>Toledo, OH</td>
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<td>1950</td>
<td>Russell D. Herrold, MD</td>
<td>Milwaukee, WI</td>
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<td>1949</td>
<td>James C. Sargent, MD</td>
<td>Grand Rapids, MI</td>
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<td>1948</td>
<td>Robert S. Breakey, MD</td>
<td>Des Moines, IA</td>
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<td>1947</td>
<td>William J. Baker, MD</td>
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<tr>
<td>1946</td>
<td>Walter M. Kearns, MD</td>
<td>Rochester, MN</td>
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</tbody>
</table>
1944 * H.W. Plaggemeyer, MD  
   Chicago, IL
1941 * G.J. Thompson, MD  
   Detroit, MI
1940 * Ernest Rupel, MD  
   Milwaukee, WI
1939 * Charles C. Higgins, MD  
   Indianapolis, IN
1938 * W.G. Sexton, MD  
   Peoria, IL
1937 * Charles M. McKenna, MD  
   Madison, WI
1936 * Parke Smith, MD  
   Cincinnati, OH
1935 * Robert E. Cumming, MD  
   Rochester, MN
1934 * Frederic E.B. Foley, MD  
   Cleveland, OH
1933 * Vincent J. O'Connor, MD  
   Chicago, IL
1932 * William N. Taylor, MD  
   Detroit, MI
1931 * H.M. Stang, MD  
   St. Paul, MN
1930 * Ira R. Sisk, MD  
   Indianapolis, IN
1929 * Harry Culver, MD  
   Rochester, MN
1928 * J.L. Crenshaw, MD  
   Columbus, OH
1927 * E.O. Smith, MD  
   Madison, WI
1926 * H.L. Morris, MD  
   Cincinnati, OH
1925 * N.G. Alcock, MD  
   Detroit, MI
1924 * G.J. Thomas, MD  
   Iowa City, IA

*Deceased
Board of Directors and Committee Meetings

TUESDAY, SEPTEMBER 4, 2018

9:00 a.m. - 9:45 a.m. Executive Committee Meeting  
Location: Crystal Room (3rd Floor)

9:45 a.m. - 10:30 a.m. Finance Committee Meeting  
Location: Crystal Room (3rd Floor)

10:30 a.m. - 11:30 a.m. Long Range Planning Committee Meeting  
Location: Crystal Room (3rd Floor)

11:15 a.m. - 12:00 p.m. Annual Meeting Committee Meeting  
Location: Crystal Room (3rd Floor)

12:00 p.m. - 1:00 p.m. Board of Directors Luncheon  
Location: State Room (2nd Floor)

1:00 p.m. - 5:00 p.m. Board of Directors Meeting  
Location: Crystal Room (3rd Floor)

WEDNESDAY, SEPTEMBER 5, 2018

11:00 a.m. - 1:15 p.m. Nominating Committee Meeting  
Location: Regal Room (B2 Level)

5:15 p.m. - 6:30 p.m. Industry Roundtable Meeting  
Location: Chancellor Room (3rd Floor)

5:30 p.m. - 6:30 p.m. Health Policy Council Meeting  
Location: Regal Room (B2 Level)

THURSDAY, SEPTEMBER 6, 2018

12:00 p.m. - 1:15 p.m. Past Presidents Committee Meeting  
Location: Regal Room (B2 Level)

5:30 p.m. - 6:00 p.m. Young Urologists Committee Meeting  
Location: Regal Room (B2 Level)
General Meeting Information

Scientific Sessions: General Session
Location: International Ballroom (2nd Floor)
Wednesday, September 5, 2018 8:00 a.m. - 5:20 p.m.
Thursday, September 6, 2018 6:30 a.m. - 5:30 p.m.
Friday, September 7, 2018 6:30 a.m. - 5:30 p.m.
Saturday, September 8, 2018 7:00 a.m. - 12:00 p.m.
*Concurrent session locations are indicated in the full scientific program.

Registration/Information Desk Hours
Location: International Foyer (2nd Floor)
Wednesday, September 5, 2018 7:00 a.m. - 5:30 p.m.
Thursday, September 6, 2018 6:00 a.m. - 5:30 p.m.
Friday, September 7, 2018 6:00 a.m. - 5:30 p.m.
Saturday, September 8, 2018 6:30 a.m. - 12:00 p.m.

Exhibit Hall Hours
Location: Imperial Ballroom (B2 Level)
Wednesday, September 5, 2018
  Welcome Reception 6:30 p.m. - 8:30 p.m.
Thursday, September 6, 2018 7:00 a.m. - 4:30 p.m.
Friday, September 7, 2018 7:00 a.m. - 11:00 a.m.

Spouse Guest/Hospitality Suite Hours
Location: Embassy Room (2nd Floor)
Wednesday, September 5, 2018 7:30 a.m. - 11:00 a.m.
Thursday, September 6, 2018 7:30 a.m. - 11:00 a.m.
Friday, September 7, 2018 7:30 a.m. - 11:00 a.m.
Saturday, September 8, 2018 7:30 a.m. - 11:00 a.m.
Evening Functions

One ticket to each evening function is included in attendee and spouse/guest registration. To purchase additional tickets, please visit the Registration/Information desk.

WELCOME RECEPTION
Date: Wednesday, September 5, 2018
Time: 6:30 p.m. - 8:30 p.m.
Location: Imperial Ballroom (B2 Level)
Attire: Casual
Cost: One ticket is included in registration; additional tickets are $50 for adults and free for children under the age of 13.
Description: Join NCS for a sports themed Welcome Reception where attendees are encouraged to wear their favorite sports jersey. Attendees can sample a variety of craft beers and specialty wines, connect with fellow attendees and visit our industry sponsors and exhibitors while enjoying an array of appetizers.

YOUNG UROLOGISTS MIXER
Date: Thursday, September 6, 2018
Time: 6:00 p.m. - 7:00 p.m.
Location: Regent Room (3rd Floor)
Attire: Business Casual
Cost: This is a free event open to residents and urologists who are within 10 years post-training.
Description: This is a great way to network with other urologists and learn how to become more active in the Section.

PRESIDENT’S RECEPTION
Date: Friday, September 7, 2018
Time: 6:00 p.m. - 7:30 p.m.
Location: Rouge (Lobby Level)
Attire: Business Casual
Cost: One ticket included in registration; additional tickets are $85.00.
Description: The 2018 President’s Reception will be a night to remember. Attendees will enjoy cocktails and hors d’oeuvres while being surrounded by Chicago’s beautiful scenery.
The North Central Section thanks all the presenters for their outstanding commitment to the 92nd Annual Meeting.

**Speaker Guidelines**
All presentations shall be loaded onto the computer in the Speaker Ready Room. An AV technician will be present during the Speaker Ready Room hours to load presentations and answer any question you may have. We strongly encourage you to turn in your presentations as early as possible. At a minimum, presentations must be turned in to the AV Technicians four hours prior to your presentation. Remember, all media must be IBM Compatible.

**Poster Presentation Guidelines**
Presenters may hang their posters starting at 8:00 a.m. for the Thursday sessions. Please look for the board containing your poster number. NCS will provide pushpins. Posters must be removed immediately at the close of the session. NCS will not hold or be responsible for posters left behind.

**Moderator Guidelines**
Please make every effort to ensure that the program runs on schedule by checking the speaker timer before each talk and each discussion. Also, encourage the speakers and discussants to adhere to the allotted time. Please be sure to inform the audience that all speakers have completed the AUA faculty disclosure process, a written report is included in the registration envelopes. Finally, remember to introduce presentations by the following: Title of Presentation, Speaker’s Name, and Speaker’s City. Please do not cite all of the authors’ names.

**Speaker Ready Room Hours**  
*Location: Royal Room (B2 Level)*  
<table>
<thead>
<tr>
<th>Date</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Wednesday, September 5</td>
<td>7:00 a.m. - 5:30 p.m.</td>
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<tr>
<td>Thursday, September 6</td>
<td>6:00 a.m. - 5:30 p.m.</td>
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<td>Friday, September 7</td>
<td>6:00 a.m. - 5:30 p.m.</td>
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<td>Saturday, September 8</td>
<td>6:30 a.m. - 12:00 p.m.</td>
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Scientific Program

All sessions will be located in International Ballroom unless otherwise noted
Speakers and times are subject to change

WEDNESDAY, SEPTEMBER 05, 2018

OVERVIEW

7:00 a.m. - 5:30 p.m. Registration/Information Desk Hours
Location: International Foyer

7:00 a.m. - 5:30 p.m. Speaker Ready Room Hours
Location: Royal Room

7:30 a.m. - 11:00 a.m. Spouse/Guest Hospitality Suite Hours
Location: Embassy Room

7:30 a.m. - 8:30 a.m. Breakfast
Location: International Foyer

6:30 p.m. - 8:30 p.m. Exhibit Hall Hours
Location: Imperial Ballroom

6:30 p.m. - 8:30 p.m. Welcome Reception
Location: Imperial Ballroom

GENERAL SESSION

8:00 a.m. - 9:30 a.m. Robotic Urologic Surgery: Technique and Troubleshooting-
A Video Session with Panel Discussion
Moderator: Chandru P. Sundaram, MD, FACS
Indianapolis, IN
Panelists: Igor Frank, MD Rochester, MN
Arieh L. Shalhav, MD Chicago, IL

9:30 a.m. - 10:30 a.m. Defining the Opioid Epidemic and Its Implications for
Prescribing Practices in Urology
Guest Speaker: Jay S. Lee, MD Ann Arbor, MI

10:30 a.m. - 10:40 a.m. ABU Update
Speaker: Stephen Y. Nakada, MD, FACS, FRCS(Glasg.)
Madison, WI

10:40 a.m. - 11:00 a.m. Break
Location: International Foyer

11:00 a.m. - 12:00 p.m. AUA Course of Choice Lecture - AUA Guidelines 2017: Non-
Muscle Invasive Bladder Cancer
AUA Course of Choice
Guest Speaker: Sam S. Chang, MD, MBA
Nashville, TN

12:00 p.m. - 1:15 p.m. Lunch
Location: International Foyer
Concurrent Sessions Begin

Concurrent Session 1 of 2

1:15 p.m. - 5:20 p.m.  Health Policy and Practice Management  
*Location: International Ballroom*

1:15 p.m. - 1:45 p.m.  Washington Update, Focusing on Existing and Emerging Payment Reform and Quality Programs from CMS  
Moderator: James M. Dupree IV, MD, MPH  
*Ann Arbor, MI*

1:15 p.m. - 1:30 p.m.  What's Next? How MACRA/MIPS/BPCI Advanced Might be Impacting Your Practice  
Speaker: Hans C. Arora, MD, PhD  
*Cleveland, OH*

1:30 p.m. - 1:45 p.m.  What Do Practicing Urologists Really Need to Know About the RUC Process?  
Speaker: Kyle A. Richards, MD, FACS  
*Madison, WI*

1:45 p.m. - 2:40 p.m.  Burnout Among Urologists: What Can We Do Now and What Can We Change?  
Moderator: Patrick H. McKenna, MD, FAAP, FACS  
*Madison, WI*

1:45 p.m. - 2:00 p.m.  What Does the AUA Census Tell Us About Our Workforce and Physician Burnout?  
Speaker: Lindsey A. Herrel, MD, MS  
*Ann Arbor, MI*

2:00 p.m. - 2:40 p.m.  Debate: How Different Productivity Measurement Systems Enable or Prevent Burnout  

2:00 p.m. - 2:15 p.m.  RVU-Based Productivity Measurement  
Speaker: Miriam Hadj-Moussa, MD  
*Ann Arbor, MI*

2:15 p.m. - 2:30 p.m.  Collections-Based Productivity Measurement  
Speaker: Dhruti M. Patel, MD  
*Cincinnati, OH*

2:30 p.m. - 2:40 p.m.  Discussion and Q&A

2:40 p.m. - 3:25 p.m.  Access to Urologic Care with a Focus on Rural Care and Delivery  
Moderator: Thomas H. Tarter, MD, PhD  
*Decatur, IL*

2:40 p.m. - 2:55 p.m.  How Telemedicine Can Improve Access to Urologic Care  
Speaker: Matthew T. Gettman, MD  
*Rochester, MN*

2:55 p.m. - 3:10 p.m.  Working Across State Lines: What Works and What Doesn’t  
Speaker: Candace F. Granberg, MD  
*Rochester, MN*
3:10 p.m. - 3:25 p.m.  Leveraging Mid-Level Providers to Improve Urologic Care in Rural Areas  
Speaker:  Thomas H. Tarter, MD, PhD  
Decatur, IL

3:25 p.m. - 3:40 p.m.  Break  
Location: International Foyer

3:40 p.m. - 4:30 p.m.  Special Presentation: Opioids in Urologic Care  
Moderator:  Matthew T. Gettman, MD  
Rochester, MN

3:40 p.m. - 4:00 p.m.  National Trends and Interventions for Improved Use of Opioids: A View from the AUA  
Speaker:  Gregory B. Auffenberg, MD, MS  
Ann Arbor, MI

4:00 p.m. - 4:20 p.m.  Report from the Front Lines: What's Mayo Clinic Doing to Improve Local Use of Opioids  
Speaker:  Matthew J. Ziegelmann, MD  
Rochester, MN

4:20 p.m. - 4:30 p.m.  Discussion

4:30 p.m. - 5:15 p.m.  Peering Into the Future: Different Perspectives on the Future of Health Policy in Urology  
Moderator:  James M. Dupree IV, MD, MPH  
Ann Arbor, MI

4:30 p.m. - 4:45 p.m.  Private Practice Perspective  
Speaker:  Aaron J. Milbank, MD  
Woodbury, MN

4:45 p.m. - 5:00 p.m.  Academic Perspective  
Speaker:  Robert C. Flanigan, MD, FACS  
Maywood, IL

5:00 p.m. - 5:15 p.m.  Discussion and Q&A

5:15 p.m. - 5:20 p.m.  Health Policy Young Investigator Award  
Introducer:  James M. Dupree IV, MD, MPH  
Ann Arbor, MI

Concurrent Session 2 of 2

1:15 p.m. - 5:20 p.m.  Primary Care Update in Urology  
Location: Gold Room  
Moderator:  Tracy M. Downs, MD, FACS  
Madison, WI

1:15 p.m. - 1:35 p.m.  Strategic Planning: My Approach to Antibiotic Selection Prior to Transrectal Ultrasound Guided Prostate Needle Biopsy - Shared Lessons Learned from the MUSIC Research Consortium  
Speaker:  Damon E. Davis, MD  
East Lansing, MI
1:35 p.m. - 1:55 p.m.  Hormone-Refractory Prostate Cancer: A Primer for the Primary Care Physician  
Speaker: Christopher A. Warlick, MD, PhD  
Minneapolis, MN

1:55 p.m. - 2:15 p.m.  Smoking Cessation Intervention: An Integral Part of Bladder Cancer Treatment  
Speaker: Courtney M. Hollowell, MD  
Chicago, IL

2:15 p.m. - 2:35 p.m.  Diagnosis and Management of Erectile and Sexual Dysfunction  
Speaker: Lawrence C. Jenkins, MD, MBA  
Columbus, OH

2:35 p.m. - 3:05 p.m.  Break  
Location: International Foyer

3:05 p.m. - 3:25 p.m.  BPH for Primary Care Providers  
Speaker: Maria A. Ordonez, MD  
Minneapolis, MN

3:25 p.m. - 3:45 p.m.  Gender Confirmation Surgery  
Speaker: Miriam Hadj-Moussa, MD  
Ann Arbor, MI

3:45 p.m. - 4:05 p.m.  Diagnosis and Treatment of Overactive Bladder in Women: AUA/SUFU Guidelines  
Speaker: Sarah E. McAchran, MD, FACS  
Madison, WI

4:05 p.m. - 4:25 p.m.  Recurrent UTIs in Women - How to Manage and When to Refer  
Speaker: Elizabeth B. Takacs, MD  
Iowa City, IA

4:25 p.m. - 4:45 p.m.  Acute Management of Kidney Stones  
Speaker: Kristin G. Baldea, MD  
Maywood, IL

4:45 p.m. - 5:05 p.m.  What's New/Old in the Management of Pediatric Vesicoureteral Reflux?  
Speaker: Ruthie R. Su, MD  
Madison, WI

5:05 p.m. - 5:20 p.m.  Closing Remarks  
Speaker: Tracy M. Downs, MD, FACS  
Madison, WI

Concurrent Sessions End

6:30 p.m. - 8:30 p.m.  Welcome Reception  
Location: Imperial Ballroom
THURSDAY, SEPTEMBER 06, 2018

OVERVIEW

6:00 a.m. - 5:30 p.m. Registration/Information Desk Hours
Location: International Foyer

6:00 a.m. - 5:30 p.m. Speaker Ready Room Hours
Location: Royal Room

7:00 a.m. - 4:30 p.m. Exhibit Hall Hours
Location: Imperial Ballroom

7:30 a.m. - 11:00 a.m. Spouse/Guest Hospitality Suite Hours
Location: Embassy Room

Concurrent Sessions Begin

Concurrent Session 1 of 2

6:30 a.m. - 7:30 a.m. Video Session I
Location: Gold Room
Moderators: Mark D. Dabagia, MD, FACS
Fort Wayne, IN
Steven M. Lucas, MD
Detroit, MI

Video #1 ROBOT-ASSISTED PYELOTOMY & ILEAL URETER SUBSTITUTION: VIDEO DEMONSTRATION
Rachel Shannon, BS, Deborah L Jacobson, MD, Edward M Gong, MD and Bruce W Lindgren, MD
Ann & Robert H. Lurie Children's Hospital of Chicago
Presented By: Rachel L. Shannon, BS

Video #2 NOVEL SURGICAL APPROACHES TO NEO-UMBILICOPLASTY IN THE SETTING OF BLADDER EXSTROPHY
Eric Anderson, BS¹, Jessica Goetz, DO², Jennifer Frazier, MPH³, Bryn Sack, MD⁴, Travis Groth, MD², Douglas Canning, MD³, Aseem Shukla, MD³, Dana Weiss, MD³, Michael Mitchell, MD², Joseph Borer, MD⁴, John Kryger, MD² and Elizabeth Roth, MD²
¹Medical College of Wisconsin; ²Children's Hospital of Wisconsin; ³Children's Hospital of Philadelphia; ⁴Boston Children's Hospital
Presented By: Eric R. Anderson, BS

Video #3 PERINEAL URETHROPLASTY FOR CRYOABLATION-INDUCED PROSTATOMEMBRANOUS URETHRAL STENOSIS
Yaejee Hong, MD, Daniel Box, MD, Nilesh Patil, MD and Ayman Mahdy, MD, PhD
University of Cincinnati College of Medicine
Presented By: Yaejee Hong
Video #4

ROBOT ASSISTED LAPAROSCOPIC PARTIAL NEPHRECTOMY IN RENAL TRANSPLANT VIA CLAMPING OF COMMON AND EXTERNAL ILIAC ARTERIES

Leo Dreyfuss¹, Mark Waples, MD², Peter Leonovicz, MD² and Jacob Clendenon, MD³
¹University of Wisconsin-Madison; ²Aurora St. Lukes Medical Center, Urology; ³Aurora St. Lukes Medical Center, Transplant Surgery
Presented By: Leo Dreyfuss

Video #5

INTRAOPERATIVE APPLICATION OF PLATELET RICH PLASMA TO THE NEUROVASCULAR BUNDLES DURING NERVE SPARING RADICAL PROSTATECTOMY: AN OPEN LABEL PROSPECTIVE CLINICAL TRIAL

Mary Westerman, MD, Kathryn J. Doty, CCRP, Stephen A. Boorjian, MD, Igor Frank, MD, R. Jeffrey Karnes, MD, Jay Smith, MD, R. Houston Thompson, MD, Matthew K. Tollefson, MD, Camille M. van Buskirk, MD and Matthew T. Gettman, MD
Mayo Clinic
Presented By: Mary E. Westerman, MD

Video #6

TIPS AND TRICKS FOR HOLMIUM LASER ENucleATION OF THE PROSTATE

Blake Anderson, MD, Tim Large, MD, Joshua Heiman, BS, Amy Krambeck, MD and James Lingeman, MD
IU School of Medicine
Presented By: Blake Anderson, MD

Video #7

SURGICAL MANAGEMENT OF URETHRAL DIVERTICULUM

Yaejje Hong, MD, Beibei Oelrich, MD, PhD and Ayman Mahdy, MD, PhD
University of Cincinnati College of Medicine
Presented By: Yaejee Hong

Video #8

ROBOTIC PARTIAL NEPHRECTOMY FOR A T2B RENAL CELL CARCINOMA

Joel Rosenberg, BS, Shyam Sukumar, MD and Christopher Weight, MD, MS
University of Minnesota
Presented By: Joel W. Rosenberg, MD

Concurrent Session 2 of 2

6:30 a.m. - 7:30 a.m. Adrenal/ Kidney/ Ureter - Malignant Podium Session

Location: International Ballroom
Moderators: Paul Gellhaus, MD
Iowa City, IA
Alon Z. Weizer, MD, MS
Ann Arbor, MI
Discussant: Thomas A. Gardner, MD, MBA
Indianapolis, IN

6:30 a.m. #1 COMPARISON OF THE SAFETY AND EFFICACY OF URETEROSCOPY WITH OR WITHOUT ANESTHESIA FOR UPPER TRACT UROTHELIAL CARCINOMA

Saad Hatahet¹, Mohamed Hendawi, MD², David Sharp, MD², Geoffrey Box, MD² and Ahmad Shabsigh, MD²
¹The Ohio State University, Wexner Medical Center; ²The Ohio State University
Presented By: Saad Hatahet, MD
LONG-TERM OUTCOMES AFTER TOPICAL TREATMENT FOR UPPER TRACT UROTHELIAL CARCINOMA
Jeremy West, MD, Kenneth Nepple, MD, Brenton Sherwood, MD, Anthony Oberle, MD, Sara Mott, MS and Michael O'Donnell, MD
University of Iowa Department of Urology
Presented By: Brenton Gregory Sherwood, MD

CELL CYCLE PROGRESSION SCORE AS A PREDICTOR FOR METASTATIC PROGRESSION AFTER RESECTION OF STAGE 1 CLEAR CELL RENAL CELL CARCINOMA
Jeremy West, MD1, Vincent Cheval, DO1, Sarah Mott, MS2 and James Brown1
1University of Iowa Hospitals and Clinics; 2Holden Comprehensive Cancer Center, University of Iowa
Presented By: Jeremy M. West, MD

PERCUTANEOUS BIOPSY FOR UPPER TRACT UROTHELIAL CARCINOMA - SAFETY AND DIAGNOSTIC ACCURACY
Jason Joseph, MD1, Amir Toussi, MD1, Theodora Potretzke, MD2, Tanner Miest, MD, PhD1, Thomas Atwell, MD2, Bradley Leibovich, MD1, Matthew Tollefson, MD1 and Aaron Potretzke, MD1
1Department of Urology, Mayo Clinic; 2Department of Radiology, Mayo Clinic
Presented By: Jason P. Joseph, MD

MULTIFOCAL RENAL TUMORS: EVALUATING PREDICTORS OF MULTIFOCALITY AND CONCORDANCE WITHIN THE KIDNEY
Chandra K. Flack, MD, Ting Wei, MS, Adam C. Calaway, MD, K. Clint Cary, MD, MPH and Ronald S. Boris, MD
Indiana University School of Medicine
Presented By: Chandra K. Flack, MD

CHARACTERIZATION OF ONCOLYTIC MEASLES VIRUS IN PATIENT-DERIVED RENAL CELL CARCINOMA XENOGRAFTS GROWN ON CHICKEN CHORIOALLANTOIC MEMBRANES AS A MODEL FOR EARLY METASTATIC DISEASE
Tanner Miest, MD, PhD1, Ianko Iankov, PhD2, Yaroslav Fedysyn1, Pierce Reynolds1, Matthew Lowerison, PhD1, Jeffrey Karnes, MD1, Stephen Boorjian, MD1, Houston Thompson, MD1, Matthew Tollefson, MD1, Igor Frank, MD1, Eva Galanis, MD2 and Bradley Leibovich, MD1
1Mayo Clinic, Department of Urology; 2Mayo Clinic, Department of Molecular Medicine
Presented By: Tanner Miest, MD, PhD
FREQUENCY AND PREDICTORS OF RENAL TRANSPLANTATION AMONG PATIENTS RENDERED SURGICALLY ANEPHRIC FOR SPORADIC RENAL CANCER
Timothy Boswell, MD1, Vidit Sharma, MD1, Mary Westerman, MD1, Patrick Dean, MD2, George Chow, MD1, Robert Thompson, MD1, Bradley Leibovich, MD1 and Stephen Boorjian, MD1
1Department of Urology, Mayo Clinic, Rochester, MN; 2Department of Surgery, Division of Transplantation Surgery, Mayo Clinic, Rochester, MN
Presented By: Timothy C. Boswell, MD

SALVAGE AND PALLIATIVE RADIATION IN OLIGOMETASTATIC RENAL CELL CARCINOMA: A DESCRIPTIVE COHORT ANALYSIS
Ross Avant, MD, Mary Westerman, MD and Aaron M. Potretzke, MD
Mayo Clinic
Presented By: Mary E. Westerman, MD

PROGNOSTIC SIGNIFICANCE OF SARCOMATOID FACTORS IN RENAL CELL CARCINOMA IN THE SETTINGS OF LOCALIZED AND METASTATIC DISEASE
Jonathan Schmidt, BS, Jay Sulek, MD, Liang Cheng, MD and Chandru Sundaram, MD, FACS, FRCS
Indiana University School of Medicine
Presented By: Jonathan Paul Schmidt, BS

DISTRIBUTION OF M0 RENAL CELL CARCINOMA METASTASES STRATIFIED BY PATHOLOGIC NODAL STATUS
David Yang, MD1, Theodora Potretzke, MD2, Ajay Gopalakrishna, MD1, Christine Lohse, MS3, John Cheville, MD4, Bernard King, MD2, Bradley Leibovich, MD1, R Houston Thompson, MD1 and Aaron Potretzke, MD1
1Mayo Clinic, Department of Urology; 2Mayo Clinic, Department of Radiology; 3Mayo Clinic, Division of Biomedical Statistics and Informatics; 4Mayo Clinic, Department of Pathology
Presented By: Ajay Gopalakrishna, BS, BA

SURVIVAL AND CHARACTERISTICS OF PATIENTS WITH UNCLASSIFIED RENAL CELL CARCINOMA
Jay Sulek, MD, Naveen Krishnan, MD, Caleb Cooper, BS, Liang Cheng, MD and Chandru Sundaram, MD
Indiana University
Presented By: Naveen Krishnan

PREDICTORS OF COMPLICATIONS FOLLOWING PERCUTANEOUS RENAL MASS BIOPSY IN 1053 PATIENTS
Natasza M. Posielski, MD1, Anthony Bu1i, Shane A. Wells, MD3, Sara L. Best, MD1, Lori M. Gettle, MD3, Timothy J. Ziemlewicz, MD3, Meghan J. Lubner, MD3, J. Louis Hinshaw, MD3, Fred T. Lee, MD3, Stephen Y. Nakada, MD1 and E. Jason Abel, MD1
1University of Wisconsin Department of Urology; 2University of Wisconsin Medical School; 3University of Wisconsin Department of Radiology
Presented By: Natasza Posielski, MD
7:30 a.m. - 8:00 a.m.  Break - Visit Exhibits
Location: Imperial Ballroom

8:00 a.m. - 8:05 a.m.  President's Welcome
President: Gary J. Faerber, MD
Durham, NC

8:05 a.m. - 8:40 a.m.  State-of-the-Art Lecture: Treatment of Priapism
Speaker: Tobias S. Kohler, MD, MPH, FACS
Rochester, MN

8:40 a.m. - 9:15 a.m.  State-of-the-Art Lecture: New Devices and Technologies for OAB Management
Speaker: Howard B. Goldman, MD, FACS
Cleveland, OH

9:15 a.m. - 10:00 a.m.  Panel Discussion: Controversies in Pediatric Urology
Moderator: Ranjiv Mathews, MD
Springfield, IL
Panelists: John V. Kryger, MD
Milwaukee, WI
Rosalia Missieri, MD
Indianapolis, IN
Kristina D. Suson, MD
Detroit, MI

10:00 a.m. - 10:30 a.m.  Advances in Bladder Cancer: Making Real Progress in 2018
Speaker: Cheryl T. Lee, MD
Columbus, OH

10:30 a.m. - 11:00 a.m.  Break - Visit Exhibits
Location: Imperial Ballroom

11:00 a.m. - 12:00 p.m.  Panel Discussion: Prostate Cancer
Moderator: David F. Jarrard, MD
Madison, WI
Panelists: Kathleen A. Cooney, MD, MACP
Durham, NC
Brian T. Helfand, MD, PhD
Evanston, IL
Jianfeng Xu, MD, PhD
Evanston, IL

12:00 p.m. - 1:15 p.m.  Industry Sponsored Lunch Symposium
Location: Crystal Room

12:00 p.m. - 1:15 p.m.  Industry Sponsored Lunch Symposium
Location: Regent Room

1:15 p.m. - 2:00 p.m.  Case Discussion: Urolithiasis Case Panel
Moderator: Bodo E. Knudsen, MD, FRCSC
Columbus, OH
Panelists: Khurshid Ghani, MD, MBChB, MS, FRCS
Ann Arbor, MI
Mark J. Noble, MD
Cleveland, OH
Thomas M. Turk, MD
Maywood, IL
Concurrent Sessions Begin

Concurrent Session 1 of 3

2:00 p.m. - 3:00 p.m.  Pediatric Podium Session
Location: Rouge Room
Moderators:  Alison Keenan, MD  
           Madison, WI  
           George F. Steinhardt, MD  
           Grand Rapids, MI  
Discussant:  Candace F. Granberg, MD  
           Rochester, MN  

2:00 p.m.  #13  RENAL DISEASE PROGRESSION IN ADULT AND PEDIATRIC PATIENTS WITH A HISTORY OF POSTERIOR URETHRAL VALVES
Benjamin Abelson, MD1, Victoria Huang, BS2, Alice Crane, MD, PhD1, Abhinav Khanna, MD, MPH1, Katherine Dell, MD1 and Audrey Rhee, MD1  
1Cleveland Clinic; 2Case Western Reserve University School of Medicine  
Presented By: Benjamin Abelson

2:04 p.m.  #14  NOVEL SURGICAL APPROACHES TO NEO-UMBILICOPLASTY IN THE SETTING OF BLADDER EXSTROPHY
Eric Anderson, BS1, Jessica Goetz, DO2, Jennifer Frazier, MPH3, Bryn Sack, MD4, Travis Groth, MD2, Douglas Canning, MD3, Aseem Shukla, MD3, Dana Weiss, MD3, Michael Mitchell, MD2, Joseph Borer, MD4, John Kryger, MD2 and Elizabeth Roth, MD2  
1Medical College of Wisconsin; 2Children's Hospital of Wisconsin; 3Children's Hospital of Philadelphia; 4Boston Children's Hospital  
Presented By: Eric Raymond Anderson, BS

2:08 p.m.  #15  THE CLINICAL SIGNIFICANCE OF URODYNAMIC TESTING AND IMAGING STUDIES IN THE MYELOMENINGOCELE INFANT
Kathryn Marchetti, MD, Ted Lee, MD, Lauren Corona, MD, Courtney Shepard, MD, Vesna Ivancic, MD, Kate H Kraft, MD, David A Bloom, MD, Julian Wan, MD and John Park, MD  
Department of Urology, Michigan Medicine  
Presented By: Kathryn Marchetti, MD

2:12 p.m.  #16  THE SMART ARTIFICIAL URINARY SPHINCTER (SAUS) AS A NOVEL DEVICE IN TREATING BLADDER OUTLET INCOMPETENCE IN THE PEDIATRIC PATIENT
Jesse Jacobs, MD1, Kahlil Saad, MD1, Bert Muller, PhD2, Bekin Osmani, PhD2, Jeremy Rickli, PhD1, Tino Topper, PhD2, Steve Majerus, PhD3, Kirstan Meldrum, MD1 and Nivedita Dhar, MD1  
1Wayne State University, Department of Urology; 2University of Basel; 3Cleveland Clinic Lerner Research Institute  
Presented By: Jesse Jacobs, MD
2:16 p.m. #17 PROXIMAL HYPOSPADIAS AND ACQUIRED CRYPTORCHIDISM: PREVALENCE, MORPHOLOGY, AND CLINICAL IMPLICATIONS
Anthony D'Oro, BA, Ilina Rosoklija, MPH, Elizabeth Yerkes, MD, Bruce Lindgren, MD and Earl Cheng, MD
Ann Robert H. Lurie Children's Hospital of Chicago
Presented By: Anthony D'Oro, BA

2:20 p.m. #18 SCREENING VOIDING CYSTOUREROGRAHM IN CHILDREN WITH MULTICYSTIC DYSPLASTIC KIDNEY DOES NOT CHANGE PATIENT MANAGEMENT OR PREVENT FEBRILE URINARY TRACT INFECTION
Christopher Brown, MD, Daryl McLeod, MD, MPH and Christina Ching, MD
Nationwide Children’s Hospital
Presented By: Christopher T. Brown, MD

2:24 p.m. #19 OUTCOME OF CIRCUMCISION FOR NEWBORNS WITH WEB PENIS: OBLIQUE SKIN INCISION FOLLOWED BY PENIS SHAFT SKIN PHYSICAL THERAPY AVERTS SURGICAL RECONSTRUCTION
Max Maizels, MD, Patrick Meade, BA, Ilina Rosoklija, MPH, Melanie Mitchell, RN and Dennis Liu, MD
Lurie Children's Hospital of Chicago
Presented By: Max Maizels, MD

2:28 p.m. #20 POSTOPERATIVE COMPLICATIONS AFTER URETERAL ACCESS SHEATH USE DURING FLEXIBLE URETEROSCOPY: MULTI-INSTITUTIONAL OUTCOMES
Nicholas Raja1, Ted Lee, MD2, Kathryn Marchetti, MD2, Kate H Kraft, MD2, Julian Wan, MD2 and Jonathan Ellison, MD3
1University of Michigan Medical School; 2Department of Urology, Michigan Medicine; 3Department of Urology, University of Washington
Presented By: Nicholas Raja

2:32 p.m. #21 POSTOBSTRUCTIVE BLADDER SMOOTH MUSCLE REMODELING IS DEPENDENT ON BLADDER MESENCHYMAL STEM CELLS
Belinda Li, MD, Megan Devine, BS, Nicholas Tassone, BS, Robert Dettman, PhD and Edward Gong, MD
Ann Robert H. Lurie Children's Hospital of Chicago
Presented By: Belinda Li, MD

2:36 p.m. #22 THE EFFECT OF CONCEALED PENIS REPAIR ON STRETCHED PENILE LENGTH
Wesley Baas, MD, Kristin Delfino, PhD and Ranjiv Mathews, MD
Southern Illinois University School of Medicine
Presented By: Wesley Baas, MD

2:40 p.m. #23 EPIDURAL ANALGESIA DECREASES NARCOTIC REQUIREMENTS IN LOW LEVEL SPINA BIFIDA PATIENTS
Joshua Roth, MD, Rosalia Misseri, MD, Stephanie Whittaker, APRN, Francesca Monn, MD, Nicole Horn, MD, Mark Cain, MD and Morton Green, MD
Riley Hospital for Children at Indiana University Health
Presented By: Joshua Roth, MD

2:45 p.m. - 3:00 p.m. Q&A
Concurrent Session 2 of 3

2:00 p.m. - 3:00 p.m.  
Endourology/ Stone Disease I Podium Session  
Location: Gold Room  
Moderators: Casey A. Dauw, MD  
Ann Arbor, MI  
Marcelino E. Rivera, MD  
Rochester, MN  
Discussant: Amy E. Krambeck, MD  
Indianapolis, IN

2:00 p.m.  #24  
DIETARY ALTERNATIVES TO PRESCRIPTION POTASSIUM CITRATE  
Tim Large, MD, John Asplin, MD, James Williams, PhD, Ignacio Grangja and Amy Krambeck, MD  
IU School of Medicine  
Presented By: Tim Large, MD, MA

2:04 p.m.  #25  
OUTCOMES OF OCTOGENARIANS UNDERGOING PERCUTANEOUS NEPHROLITHOTOMY  
Joshua Heiman, BS, Tim Large, MD, Blake Anderson, MD, James Lingeman, MD and Amy Krambeck, MD  
IU School of Medicine  
Presented By: Joshua Heiman, BS

2:08 p.m.  #26  
ULTRA LOW DOSE LIMITED RENAL CT: RENAL STONE SURVEILLANCE WITH LOWER RADIATION THAN KUB AND COST EQUIVALENT TO ULTRASOUND.  
Natasza M. Posielski, MD1, Virginia B. Planz, MD2, Perry J. Pickhardt, MD2 and Stephen Y. Nakada, MD1  
1University of Wisconsin Department of Urology; 2University of Wisconsin Department of Radiology  
Presented By: Natasza Posielski, MD

2:12 p.m.  #27  
THE MOSES HOLMIUM SYSTEM – TIME IS MONEY  
Karen Stern, MD and Manoj Monga, MD  
Cleveland Clinic  
Presented By: Karen L. Stern, MD

2:16 p.m.  #28  
INVESTIGATIONAL TEXT MESSAGES: ASSESSING PAIN AFTER URETEROSCOPIC STONE REMOVAL  
Kevin Flynn, MD1, Paul Guidos, MD2, Shelby Francis1, Jacob Simmering1, Philip Polgreen, MD, MPH3, Bradley Erickson, MD, MPH4 and Chad Tracy, MD5  
1University of Iowa; 2Department of Urology, University of Iowa Hospitals and Clinics; 3Department of Internal Medicine, University of Iowa Hospitals and Clinics  
Presented By: Kevin J. Flynn, MD

2:20 p.m.  #29  
IMPACT OF DIETARY PROTEIN ON URINARY OXALATE LEVELS UTILIZING THE NUTRITIONAL DATA SYSTEM FOR RESEARCH (NDSR)  
Robert Medairos, MD1, Halle Foss, BS1, Jack Kleinman, MD1, Kristina Penniston, PhD, RD2, Andrea Moosreiner, MPH, RD1, Jeffrey Wesson, PhD, MD1 and Carly Davis, MD1  
1Medical College of Wisconsin; 2University of Wisconsin, Madison  
Presented By: Robert Anthony Medairos, MD
2:24 p.m. #30 RELATIVE VALIDITY OF A DIETARY SCREENING TOOL TO IDENTIFY RISK FACTORS FOR CALCIUM UROLITHIASIS
Kristina L. Penniston, PhD, RDN, FAND1, Mariana M. Coughlin1 and R. Allan Jhagroo, MD2
1University of Wisconsin School of Medicine and Public Health, Department of Urology; 2University of Wisconsin School of Medicine and Public Health, Department of Medicine-Division of Nephrology
Presented By: Kristina L. Penniston, PhD, RDN, FAND

2:28 p.m. #31 USE OF ABDOMINAL PLAIN FILM (KUB) VERSUS ULTRA-LOW DOSE COMPUTED TOMOGRAPHY FOR ASSESSMENT OF STONE FREE RATES AFTER SHOCK WAVE LITHOTRIPSY: IMPLICATIONS FOR SUBSEQUENT EMERGENCY DEPARTMENT VISITS AND UNPLANNED LITHOTRIPSY PROCEDURES
Akshay Sood, MD1, Phil Wong, MD, PhD2, Chase Heilbronn, BS2, Matthew Hanna, BS2, Ben Eilender, BS2 and David Leavitt, MD2
1Henry Ford Health System; 2Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI
Presented By: Akshay Sood, MD

2:32 p.m. #32 IDENTIFYING POTENTIAL PROBIOTIC AND PATHOGENIC BACTERIA IN THE FECAL MICROBIOME OF URINARY STONE FORMERS
Anna Zampini, MD, MBA, MS, Andrew Nguyen, MD, Emily Rose, BS, Manoj Monga, MD and Aaron Miller, MD
Cleveland Clinic
Presented By: Anna M. Zampini, MD, MBA

2:36 p.m. #33 CORRELATION OF AGE AND GENDER WITH PATIENTS’ KIDNEY STONE RELATED QUALITY OF LIFE
Karen Stern, MD1, Jodi Antonelli, MD2, Davis Viprakasit, MD3, Timothy Averch, MD4, Thomas Chi, MD5, Ben Chew, MD6, Vincent Bird, MD7, Vernon Pais, MD8, Necole Streeper, MD9, Roger Sur, MD8, Stephen Nakada, MD9, Kristina Penniston, PhD11 and Sri Sivalingam, MD1
1Cleveland Clinic; 2UT Southwestern; 3University of North Carolina; 4University of Pittsburgh; 5University of San Francisco; 6University of British Columbia; 7University of Florida; 8Dartmouth-Hitchcock; 9Pennsylvania State; 10UC San Diego; 11University of Wisconsin
Presented By: Karen L. Stern, MD

2:40 p.m. #34 WITHDRAWN

2:45 p.m. - 3:00 p.m. Q&A
Concurrent Session 3 of 3

2:00 p.m. - 3:00 p.m. Socioeconomics/ Health Policy & Outcomes Research Podium Session
Location: International Ballroom
Moderators: Krishnanath Gaitonde, MD
           Cincinnati, OH
           Mark D. Stovsky, MD, MBA, FACS
           Cleveland, OH
Discussant: John M. Hollingsworth, MD, MS
           Ann Arbor, MI

2:00 p.m. #35 PERCEPTIONS OF PROSTATE MRI AND FUSION BIOPSY FOR PATIENTS DIAGNOSED WITH PROSTATE CANCER: RESULTS FROM A NATIONAL SURVEY OF RADIATION ONCOLOGISTS AND UROLOGISTS
Laura Bukavina, MD MPH1, Jon Tilburt, MD MPH2, Badrinath Konety, MD MBA3, Nilay Shah, PhD4, Cary Gross, MD5, James Yu, MD6, Robert Abouassaly, MD7, Robert Schumacher, PhD8,12, Alexander Kutikov, MD9, Marc Smaldone, MD9 and Simon Kim, MD MPH10,13
1Case Western Reserve University; 2Mayo Clinic, Division of Bioethics, Department of Medicine; 3University of Minnesota, Department of Urology; 4Mayo Clinic, Division of Health Policy & Research; 5Yale University, Department of Medicine, Cancer Outcomes and Public Policy Effectiveness Research Center; 6Yale University, Department of Radiation Oncology; 7Cleveland Clinic, Glickman Urology and Kidney Institute; 8Case Western Reserve University, Department of Population and Quantitative Health Sciences; 9Fox Chase Cancer Center, Department of Surgical Oncology; 10University Hospitals Cleveland Medical Center, Urology Institute; 11Louis Stokes Cleveland VA Medical Center; 12Case Western Reserve University Comprehensive Cancer Center and School of Medicine; 13Yale University, Cancer Outcomes and Public Policy Effectiveness Research Center
Presented By: Laura Bukavina, MD, MPH

2:04 p.m. #36 OUTCOMES OF PELVIC FLOOR PHYSICAL THERAPY IN THE TREATMENT OF LEVATOR SPASM AND VOIDING DYSFUNCTION
Diana Kakos, MD Candidate1, Vicki Irish, CNP2, Mireya Diaz-Insua, PhD2 and Humphrey Atiemo, MD2
1Wayne State University School of Medicine/Henry Ford Hospital; 2Henry Ford Health System-Vattikuti Urology Institute
Presented By: Diana Kakos, MD Candidate

2:08 p.m. #37 SOCIOECONOMIC DISPARITIES EXIST IN THE ACUTE MANAGEMENT OF STONE DISEASE
Eric Kirshenbaum, MD1, Chirag Doshi, MD1, Robert Blackwell, MD2, Petar Bajic, MD1, Gopal Gupta, MD1, Thomas Turk, MD1, Robert Flanigan, MD1, Haroon Janjua, MSc1 and Kristin Baldea, MD1
1Loyola University; 2University of Southern Illinois
Presented By: Eric Kirshenbaum, MD
2:12 p.m.  #38  VIDEO VISITS CAN BE USED TO SUBSTITUTE FOR TRADITIONAL UROLOGICAL CLINIC VISITS
Parth Shah, MD, Juan Andino, MD, MBA, William Roberts, MD, Alon Weizer, MD, Jim Dupree, MD, MPH, Todd Morgan, MD, Stanley Mukundi, PA-C and Chad Ellimoottil, MD
University of Michigan
Presented By: Parth K. Shah, MD

2:16 p.m.  #39  SCREENING POSTOPERATIVE HEMOGLOBIN AFTER ROBOT-ASSISTED RADICAL PROSTATECTOMY: FREQUENTLY UTILIZED, BUT NECESSARY?
Jason Joseph, MD1, Elizabeth Habermann, PhD, MPH2, Amy Glasgow, MHA2, Rachel Carlson, BA3, Igor Frank, MD1, Matthew Tollefson, MD1, Stephen Boorjian, MD1, R. Houston Thompson, MD1, R. Jeffrey Karnes, MD1 and Matthew Gettman, MD1
1Department of Urology, Mayo Clinic; 2Center for the Science of Healthcare Delivery, Mayo Clinic; 3Department of Health Sciences Research, Mayo Clinic
Presented By: Jason P. Joseph, MD

2:20 p.m.  #40  RACE AND SOCIOECONOMIC DISPARITIES IN ORGAN TYPE, RECOVERY AND READMISSION IN KIDNEY TRANSPLANT RECIPIENTS
Alice Crane, MD, PhD, Nitin Yerram, MD, Tyler Coy, BA, Mohamed Eltemamy, MD, Emilio Poggio, MD, Richard Fatica, MD, Alvin Wee, MD, Charles Modlin, MD, MBA and Venkatesh Krishnamurthi, MD
Cleveland Clinic
Presented By: Alice L. Crane, MD, PhD

2:24 p.m.  #41  MRI SCREENING FOR PROSTATE: A COMPARATIVE STUDY WITH BREAST, COLON, AND LUNG SCREENING MODALITIES
Julia Yang1, Bissan Abboud2, Christina Buzzy, PhD2, Amr Mahran, MD, MS2 and Lee Ponsky, MD1
1University Hospitals; 2Case Western Reserve University
Presented By: Julia Yang, MS

2:28 p.m.  #42  THE IMPACT OF VIDEO VISITS ON MEASURES OF CLINICAL EFFICIENCY AND REIMBURSEMENT
Juan Andino, MD, MBA, Parth Shah, MD, William Roberts, MD, Alon Weizer, MD, James Dupree, MD, MPH, Todd Morgan, MD, Stanley Mukundi, PA-C and Chad Ellimoottil, MD, MPH
Michigan Medicine
Presented By: Juan Jose Andino, MD, MBA

2:32 p.m.  #43  DEFINING PRODUCTIVITY BENCHMARKS AND FINANCIAL MARGINS FOR ADVANCED PRACTICE PROVIDERS IN UROLOGY
Melody Chen, MD1, Jonathan Kiechle, MD1, Zachary Maher, MBA2 and Christopher Gonzalez, MD, MBA1
1Case Western Reserve University and University Hospitals Cleveland Medical Center; 2University Hospitals Cleveland Medical Center
Presented By: Melody Chen, MD

2:36 p.m.  #44  WITHDRAWN
BARriers to obtaining a prostate multi-parametric magnetic resonance imaging in men on active surveillance for prostate cancer

Eric Walton, Mustafa Deebajah, MD, Grace Yaguchi, MD, Richard Thompson, Milan Pantelic, MD, Craig Rogers, MD, Hakmin Park, MD, Mani Menon, MD, James Peabody, MD, Shaheen Alanee, MD and Ali Dabaja, MD
Henry ford health system
Presented By: Eric Walton

2:45 p.m. - 3:00 p.m.  Q&A

Concurrent Sessions End

3:00 p.m. - 4:00 p.m.  State-of-the-Art Lecture: Innovations in Renal and Ureteral Stone Management
Guest Speaker: Glenn M. Preminger, MD
Durham, NC

4:00 p.m. - 4:30 p.m.  Break - Visit Exhibits
Location: Imperial Ballroom

Concurrent Sessions Begin

Concurrent Session 1 of 4

4:30 p.m. - 5:30 p.m.  Prostate Malignant I Podium Session
Location: International Ballroom
Moderator: Christopher L. Coogan, MD
Chicago, IL
Discussant: Nilesh Patil, MD
Cincinnati, OH

4:30 p.m.  #46  WHICH SCORES NEED A CORE? AN EVALUATION OF MR-TARGETED BIOPSY YIELD BY PIRADS SCORE ACROSS DIFFERENT BIOPSY INDICATIONS
Niranjan Sathianathen, MBBS, Badrinath Konety, MD, MBA, Ayman Soubra, MD, Gregory Metzger, MD, PhD, Benjamin Spilseth, MD, Paari Murugan, MD, Christopher Weight, MD, Maria Ordonez, MD and Christopher Warlick, MD, PhD
University of Minnesota
Presented By: Niranjan Sathianathen, MD
PERCEPTIONS OF BARRIERS TOWARDS ACTIVE SURVEILLANCE FOR LOW-RISK PROSTATE CANCER: RESULTS FROM A NATIONAL SURVEY OF RADIATION ONCOLOGIST AND UROLOGISTS

Kirtishri Mishra, MD¹, Cary Gross, MD², Nilay Shah, PhD³, Jon Tilburt, MD, MPH⁴, Badrinath Konety, MD, MBA⁵, Stephen Williams, MD⁶, Christopher Weight, MD⁷, James Yu, MD⁷, Aryavarta Kumar, MD⁸ and Simon Kim, MD, MPH⁹,¹⁰

¹University Hospitals/Case Western Reserve University; ²Yale University, Cancer Outcomes and Public Policy Effectiveness Research Center; ³Mayo Clinic, Division of Health Policy & Research; ⁴Mayo Clinic, Division of Bioethics; ⁵University of Minnesota, Department of Urology; ⁶University of Texas Medical Branch, Division of Urology; ⁷Yale University, Department of Radiation Oncology; ⁸Louis Stokes Cleveland VA Medical Center, Department of Radiation Oncology; ⁹University Hospitals Cleveland Medical Center, Urology Institute; ¹⁰Case Western Reserve University Comprehensive Cancer Center and School of Medicine

Presented By: Kirtishri Mishra, MD

SEMEN AMACR PROTEIN AS A NOVEL METHOD FOR DETECTING PROSTATE CANCER

Tyler Etheridge¹, Jane Straus, RN², Mark A. Ritter, MD, PhD³, David F. Jarrard, MD⁴ and Wei Huang, MD⁵

¹University of Wisconsin School of Medicine and Public Health; ²University of Wisconsin School of Medicine and Public Health UW Carbone Cancer Center; ³University of Wisconsin School of Medicine and Public Health Department of Human Oncology, UW Carbone Cancer Center; ⁴University of Wisconsin School of Medicine and Public Health Department of Urology, UW Carbone Cancer Center; ⁵University of Wisconsin School of Medicine and Public Health Department of Pathology and Laboratory Medicine, UW Carbone Cancer Center

Presented By: Tyler Etheridge, BA

THE EFFECT OF RACIAL DISPARITY ON THE NEGATIVE PREDICTIVE VALUE OF PROSTATE IMAGING REPORTING AND DATA SYSTEM (PI-RADS) ON MULTI-PARAMETRIC MAGNETIC RESONANCE IMAGING OF THE PROSTATE (MPMRI)

Amr Mahran, MD¹, Julia Yang, MS¹, Christina Buzzy, PhD², Rayan Abboud, MS¹, Irina Jaeger, MD¹, Vikas Gulani, MD, PhD¹ and Lee Ponsky, MD¹

¹University Hospitals Cleveland Medical Center; ²Case Western Reserve University

Presented By: Amr Mahran, MD
4:46 p.m. #50 OPTIMIZING TECHNIQUES FOR MRI-TARGETED PROSTATE BIOPSY: ESTIMATING MARGINAL DIAGNOSTIC BENEFIT FROM ADDITIONAL BIOPSY CORES
Chad Tracy, MD2, Daniel Sjoberg, MS3, Kevin Flynn, MD1, Maheen Rajput, MD4, and Behfar Ehdaie, MD, MPH5
1University of Iowa; 2Department of Urology, University of Iowa Hospitals and Clinics; 3Department of Epidemiology and Biostatistics, Memorial Sloan Kettering Cancer Center; 4Department of Radiology, University of Iowa Hospitals and Clinics; 5Department of Surgery, Urology Service, Memorial Sloan Kettering Cancer Center
Presented By: Kevin J. Flynn, MD

4:50 p.m. #51 UTILIZATION OF SALVAGE RADIATION THERAPY (SRT) FOR BIOCHEMICAL RECURRENCE AFTER RADICAL PROSTATECTOMY (RP)
Scott Hawken, MD, MS1, Daniel E Spratt, MD2, Ji Qi, MS1, Susan M Linsell, MHSA1, Michael L Cher, MD3, Khurshid R Ghani, MBCHB1, David C Miller, MD MPH1, James E Montie, MD1 and Todd M Morgan, MD1
1University of Michigan, Department of Urology; 2University of Michigan, Department of Radiation Oncology; 3Wayne State University, Department of Urology
Presented By: Scott R. Hawken, MD, MS

4:54 p.m. #52 CORRELATING MULTI-PARAMETRIC MAGNETIC RESONANCE IMAGING PI-RADS SCORE WITH PROSTATE VOLUME
Hannah Levine, MS1, Amr Mahran, MD1, Christina Buzzy, PhD2, Irina Jaeger, MD1, Vikas Gulani, MD, PhD1 and Lee Ponsky, MD1
1University Hospitals Cleveland Medical Center; 2Case Western Reserve University School of Medicine
Presented By: Amr Mahran, MD

4:58 p.m. #53 USE OF STATINS IN COMBINATION WITH ANDROGEN DEPRIVATION THERAPY IN PATIENTS WITH ADVANCED PROSTATE CANCER: IMPACT ON ONCOLOGICAL OUTCOMES
India Anderson-Carter, BS Biology and Spanish1, Natasza Posielski, MD2, Jinn-ing Liou, MS3, Tracy Downs, MD2, David Jarrard, MD2, Jason Abel, MD2 and Kyle Richards, MD, FACS2,4
1University of Wisconsin School of Medicine and Public Health; 2The University of Wisconsin-Madison, Department of Urology; 3The University of Wisconsin-Madison, Department of Medicine; 4William S. Middleton Memorial Veterans Hospital, Department of Surgery, Section of Urology
Presented By: India Anderson-Carter, BS
LONG-TERM FOLLOW-UP FROM STAMP, A PHASE 2 TRIAL, EVALUATING SİPULEUCEL-T AND CONCURRENT VS SEQUENTIAL ABIRATERONE ACETATE + PREDNISONE IN METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (MCRPC) PATIENTS

Thomas Gardner, MD1, Neal D. Shore, MD2, Raymond S. Lance, MD3, Charles H. Redfern, MD4, Frederick E. Millard, MD5, Nancy A. Dawson, MD6, Lawrence Fong, MD7, Lawrence I. Karsh, MD8, John M. Corman, MD9, Luke T. Nordquist, MD10, Myron I. Murdock, MD11, Brendan D. Curti, MD12, Nancy N. Chang, PharmD13 and Eric J. Small, MD14

1Indiana University Health System; 2Carolina Urologic Research Center; 3Eastern Virginia Medical School; 4Oncology Associates of San Diego; 5Moores Cancer Center, University of California, San Diego; 6Lombardi Comprehensive Cancer Center, Georgetown University; 7Helen Diller Family Comprehensive Cancer Center, University of California San Francisco; 8The Urology Center of Colorado; 9Virginia Mason Medical Center; 10GU Research Network; 11MidAtlantic Urology Associates; 12Earle A. Chiles Research Institute, Providence Cancer Center; 13Celgene Corporation

Presented By: Thomas A. Gardner, MD, MBA

DOES INCREASING THE NUMBER OF TARGETED BIOPSY CORES INCREASE PROSTATE CANCER DETECTION RATES DURING MRI-US FUSION BIOPSIES?

Vidit Sharma, MD, Matteo Soligo, MD, Michele Colicchia, MD, Adam T. Froemming, MD, Robert H. McLaren, MD, Lance A Mynderse, MD and R. Jeffrey Karnes, MD

Mayo Clinic

Presented By: Vidit Sharma, MD

CHANGES IN A 17-GENE PROSTATE CANCER RISK STRATIFICATION ASSAY OVER TIME IN MEN ON ACTIVE SURVEILLANCE: EARLY OBSERVATIONS ON THE ACCURACY OF SERIAL BIOLOGICAL MONITORING

Anna Faris, BA1, Daniel Hettel, BA, BS1, Shree Agrawal, BS2, Bryan Naeltitz, BA1, Khaleed Fareed, MD3, James Ulchaker, MD3, Andrew Stephenson, MD3, Michael Gong, MD3 and Eric Klein, MD3

1Cleveland Clinic Lerner College of Medicine; 2Case Western Reserve University School of Medicine; 3Cleveland Clinic

Presented By: Anna E. Faris, BA

IsoPSA™ IN THE DIAGNOSIS OF PROSTATE CANCER, A COMPARISON OF PRELIMINARY PROSPECTIVE MULTI-CENTER AND VALIDATION TRIAL DATA SETS FOR THE DETECTION OF HIGH GRADE ADENOCARCINOMA OF THE PROSTATE

Eric Klein, MD1, Arnon Chait, PhD2, Jason Haftron, MD3, Kenneth Kernen, MD3, Kannan Manickam, MD4, Andrew Stephenson, MD1, Mathew Wagner, MD5, Hui Zhu, MD5, Aimee Kestranek, PhD2, Boris Zaslavsky, PhD2 and Mark Stovisky, MD, MBA, FACS1

1Cleveland Clinic; 2Cleveland Diagnostics, Inc; 3Michigan Institute of Urology; 4Chesapeake Urology Associates; 5Kaiser Permanente Northwest; 6Louis Stokes VA Medical Center

Presented By: Mark D. Stovisky, MD, MBA, FACS

5:15 p.m. - 5:30 p.m.  Q&A
4:30 p.m. - 5:30 p.m.  Penis/ Urethra/ Testis/ Scrotum - Benign/ Malignant Podium Session
Location: Gold Room
Moderators: Edward E. Cherullo, MD
Chicago, IL
Grace B. Delos Santos, MD
Maywood, IL
Discussant: Hadley M. Wood, MD
Cleveland, OH

4:30 p.m.  #57
ASSOCIATION OF BURIED PENIS WITH THE DEVELOPMENT OF PENILE CANCER IN CIRCUMCISED MEN
Ahmad N. Alzubaidi, MD, Kenneth G. Nepple, MD and Bradley A. Erickson, MD
University of Iowa Hospitals and Clinics
Presented By: Ahmad Alzubaidi, MD

4:34 p.m.  #58
DEVELOPMENT AND VALIDATION OF A NOVEL URETHRAL STRICTURE STAGING SYSTEM
Kevin Flynn, MD1, Katherine Cotter, MD1, Amy Hahn1, Nejd Alsikafi, MD2, William Brant, MD3, Benjamin Breyer, MD, MAS4, Joshua Broghammer, MD1, Jill Buckley, MD6, Sean Elliot, MD, MS7, Jeremy Myers, MD3, Andrew Peterson, MD8, Keith Rourke, MD9, Thomas Smith III, MD10, Alex Vanni, MD11, Bryan Volzke, MD, MS12, Lee Zhao, MD, MS13 and Bradley Erickson, MD, MS1
1University of Iowa; 2Uropartners; 3University of Utah; 4University of California San Francisco; 5University of Kansas; 6University of California San Diego; 7University of Minnesota; 8Duke University; 9University of Alberta; 10Baylor College of Medicine; 11Lahey Hospital and Medical Center; 12University of Washington Medical Center; 13New York University Langone Medical Center
Presented By: Kevin J. Flynn, MD

4:38 p.m.  #59
INCIDENCE AND MANAGEMENT OF ADULT ACQUIRED BURIED PENIS AND URETHRAL STRICTURE DISEASE
Kristen Meier, MD1, Thomas Fuller, MD2, Frank Burks, MD3, Paul Rusilko, DO4, Daniel Stein, MD5, Jonathan Warner, MD6 and Alex Tapper, MD1
1Beaumont Health; 2UPMC; 3George Washington; 4City of Hope
Presented By: Kristen Marie Meier, MD

4:42 p.m.  #60
INTERNAL URETHROTOMY WITH INTRALESIONAL MITOMYCIN C FOR BULBAR URETHRAL STRICTURES AFTER FAILED URETHROPLASTY
M. Ryan Farrell, MD, MPH and Laurence Levine, MD
Rush University Medical Center
Presented By: M. Ryan Farrell, MD, MPH

4:46 p.m.  #61
IMPACT OF LOW TESTOSTERONE LEVEL ON OUTCOMES OF URETHROPLASTY FOR URETHRAL STRICURE DISEASE
Lauren Cooley, MD, PhD1, Christopher Gonzalez, MD2 and Matthias Hofer, MD, PhD1
1Northwestern; 2Case Western Reserve University
Presented By: Lauren Folgosa Cooley, MD, PhD
4:50 p.m.  #62  INTRALESIONAL MITOMYCIN C IS SAFE AND EFFECTIVE IN THE MANAGEMENT OF BLADDER NECK CONTRACTURE
Mohammed Zaher, DO, Joseph Pariser, MD, Omar Soto-Aviles, MD and Richard Santucci, MD
Detroit Medical Center
Presented By: Mohammed T. Zaher, DO

4:54 p.m.  #63  USE OF RECTAL MUCOSA IN AUGMENTATION URETHROPLASTY: AN EARLY SERIES
M. Francesca Monn, MD, MPH¹, Joshua A. Waters, MD² and Matthew J. Mellon, MD¹
¹Indiana University School of Medicine Department of Urology; ²Indiana University School of Medicine Department of Colorectal Surgery
Presented By: M. Francesca Monn, MD, MPH

4:58 p.m.  #64  PARTIAL ORCHIECTOMY AND UTILIZATION PATTERNS IN THE TESTIS CANCER NATIONAL CANCER DATABASE
Michael Moriarty, MD, Keegan Zuk, MD, Nicholas Gannon, Johnathon Doolittle, MD, Peter Langenstroer, MD, Kenneth Jacobsohn, MD, William See, MD and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Michael A. Moriarty, MD

5:02 p.m.  #65  ANTIMICROBIAL PROPHYLAXIS MAY BE UNNECESSARY AFTER URETHROPLASTY
Adarsh Manjunath, MD¹, Chris Gonzalez, MD, MBA² and Matthias Hofer, MD, PhD¹
¹Northwestern University Feinberg School of Medicine; ²Case Western Reserve University
Presented By: Adarsh Manjunath, MD

5:06 p.m.  #66  ETIOLOGY OF ERECTILE DYSFUNCTION AND DURATION OF SYMPTOMS IN PATIENTS UNDERGOING PENILE PROSTHESIS: A SYSTEMATIC REVIEW
Joseph Mahon, MD¹, Martha Faraday, PhD² and Kevin McVary, MD¹
¹SIU; ²AUA
Presented By: Kevin T. McVary, MD, FACS

5:10 p.m.  #67  INCREASING ADIPOSE BURDEN WITH CYTOTOXIC CHEMOTHERAPY IN YOUNG MEN WITH METASTATIC TESTICULAR CANCER
Karan Arora, BSc, Caroline Kato, MD, Kunnal Batra, MD, Michael Mulane, MD, Thomas Lad, MD and Sarah Psutka, MD
John H. Stroger, Jr. Hospital of Cook County
Presented By: Karan Arora, BSc

5:14 p.m.  #68  DOES PRIMARY SITE LOCATION IMPACT THE MANAGEMENT OF LOWER-RISK SQUAMOUS CELL CARCINOMA OF THE PENIS?
Ross Everett and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Ross G. Everett, MD, MPH

5:15 p.m. - 5:30 p.m.  Q&A
4:30 p.m. - 5:30 p.m.  
**Pediatrics Poster Session**

**Location:** State Room

**Moderators:**  
Katherine H. Chan, MD, MPH  
*Indianapolis, IN*  
Zachary Liss, MD  
*St Clair Shores, MI*

**Poster #1**  
**COMBINATION THERAPY FOR CICATRIX FORMATION AFTER NEONATAL CIRCUMCISION**  
Christopher Jaeger, MD\(^1\), Christina Ching, MD\(^2\), Daniel DaJusta, MD\(^2\), Daryl McLeod, MD\(^2\), Molly Fuchs, MD\(^2\), Venkata Janyathi, MD\(^2\) and Seth Alpert, MD\(^2\)

\(^1\)Ohio State University; \(^2\)Nationwide Childrens Hospital

**Presented By:** Christopher Jaeger, MD

**Poster #2**  
**PRENATAL DETECTION AND EVALUATION OF DIFFERENCES OF SEX DEVELOPMENT AND IMPACT OF GENETIC TESTING**  
Esther L. Finney, BA\(^1\), Courtney Finlayson, MD\(^2,6\), Ilina Rosoklijia, MPH\(^3\), Elizabeth A. Leeth, MS\(^4,7\), Diane Chen, PhD\(^5,8\) and Emilie K. Johnson, MD, MPH\(^1,3\)

\(^1\)Northwestern University Feinberg School of Medicine, Department of Urology; \(^2\)Northwestern University Feinberg School of Medicine, Department of Pediatrics; \(^3\)Ann & Robert H. Lurie Children's Hospital of Chicago, Division of Urology; \(^4\)Northwestern University Feinberg School of Medicine, Center for Genetic Medicine; \(^5\)Northwestern University Feinberg School of Medicine, Department of Psychology and Behavioral Sciences; \(^6\)Ann & Robert H. Lurie Children's Hospital of Chicago, Division of Endocrinology; \(^7\)Ann & Robert H. Lurie Children's Hospital of Chicago, Department of Pediatrics; \(^8\)Ann Robert H. Lurie Children's Hospital of Chicago, Division of Child Adolescent Psychiatry

**Presented By:** Esther Finney

**Poster #3**  
**WHAT ADVICE ARE PARENTS RECEIVING ON CARE OF THE UNCIRCUMCISED PENIS?**  
Patrick Meade, Ilina Rosoklijia, MPH and Dennis Liu, MD

Lurie Children's Hospital of Chicago

**Presented By:** Patrick Meade

**Poster #4**  
**CAN ANDROGENS HAVE SIGNIFICANT EFFECTS ON MESENCHYMAL STEM CELLS**  
Megan Devine, BS, Paula Firmiss, BS, Diana Bowen, MD, Natalie Kukulka, BA, Robert Dettman, PhD and Edward Gong, MD

Ann Robert H. Lurie Children's Hospital of Chicago

**Presented By:** Megan Y. Devine, BS

**Poster #5**  
**SPILLING THE BEANS: UNRELIABILITY OF ESTIMATED RENAL FUNCTION IN SPINA BIFIDA PATIENTS**  
Belinda Li, MD, Cameron Arkin, BA, Theresa Meyer, MS, RN, CPN, Ilina Rosoklijia, MPH, Kavita Hodgkins, MD, Earl Cheng, MD, Elizabeth Yerkes, MD and David Chu, MD, MSCE

Ann Robert H. Lurie Children's Hospital of Chicago

**Presented By:** Belinda Li, MD
Poster #6  TRENDS IN VESICOURETERAL REFLUX MANAGEMENT: AN ANALYSIS OF AMERICAN BOARD OF UROLOGY CASE LOGS 2006-2016
Derek Gearman, MD1, Tijani Osumah1, Glenn Cannon, MD2, Jonathan Routh, MD3, Candace Granberg, MD1 and Patricio Gargollo, MD1
1Mayo Clinic - Rochester; 2UMPC; 3Duke
Presented By: Derek J. Gearman, MD

Poster #7  REFERRAL PATTERNS FOR UNDESCENDED TESTIS: A 7 YEAR COMPARATIVE ANALYSIS OF PRIMARY CARE PROVIDERS
Colby Dixon, MD, Elizabeth Bearrick, BS and Jane Lewis, MD
University of Minnesota
Presented By: Colby A. Dixon, MD

Poster #8  ROBOT-ASSISTED SURGERY IN PEDIATRIC UROLOGY: ASSESSING CLINICAL CLAIMS ON WEBSITES OF UNITED STATES CHILDREN'S HOSPITALS
Jorge Whitley, Tijani Osumah, MD, MS, Candace Granberg, MD and Patricio Gargollo, MD
Mayo Clinic
Presented By: Tijani S. Osumah, MD, MS

Poster #9  ALL IN THE FAMILY: A QUESTIONNAIRE BASED INVESTIGATION INTO THE RELATIONSHIP BETWEEN PEDIATRIC AND PARENTAL BLADDER AND BOWEL DYSFUNCTION
Kevin Flynn, MD, Denise Juhr, Patrick Ten Eyck, MS, PhD, Rachel Doggett, PA-C, MPAS, Kristine Bonnett, ARNP, Gina Lockwood, MD, Christopher Cooper, MD and Douglas Storm, MD
University of Iowa
Presented By: Kevin J. Flynn, MD

Poster #10  THE NEED FOR SPECIALIZED TRANSITION TRAINING: DISAGREEMENTS AMONGST SPECIALTIES
Joshua Roth, MD1, Sean Elliott, MD, MS2, Konrad Szymanski, MD, MPH1, Mark Cain, MD1 and Rosalia Misseri, MD1
1Riley Hospital for Children at Indiana University Health; 2University of Minnesota
Presented By: Joshua Roth, MD

Poster #11  FUNDING SUCCESS IN PEDIATRIC UROLOGY: FROM EARLY CAREER TO RESEARCH INDEPENDENCE
Soojin Kim, MD1, Belinda Li, MD2, Ilina Rosoklija, MPH2, Elizabeth Yerkes, MD2 and David Chu, MD, MSCE2
1Ann & Robert H. Lurie Children's Hospital/Northwestern Medicine Feinberg School of Medicine; 2Ann Robert H. Lurie Children's Hospital
Presented By: Soojin Kim, MD
Poster #12  
**IS A SURGICAL-DRAIN ALWAYS NECESSARY IN A STENTED PEDIATRIC PYELOPLASTY?**  
Mohammed Zaher, DO\(^2\), Akshay Sood, MD\(^1\), Rebecca Ellens, PsyD\(^2\), Colin Brannagan, BS\(^2\), Janae Preece, MD\(^2,3\), Kristina Suson, MD\(^2,3\) and Yegappan Lakshmanan, MD\(^2,3\)  
\(^1\)Henry Ford Health System; \(^2\)Children's Hospital Michigan, Detroit Medical Center; \(^3\)Vattikuti Urology Institute, Henry Ford Hospital  
Presented By: Akshay Sood, MD

Poster #13  
**PROSPECTIVE ANALYSIS OF A URODYNAMICS PROTOCOL: CAN ROUTINE URINE CULTURES BE ELIMINATED?**  
Rachel Shannon, BS, Dawn Diaz Saldano, APN, MSN, CPNP, Devon C. Snow-Lisy, MD, Theresa Meyer, MS, RN, CPN, Ilina Rosoklija, MPH, Emilie K Johnson, MD, MPH and Elizabeth B. Yerkes, MD  
Ann Robert H. Lurie Children's Hospital of Chicago  
Presented By: Rachel L. Shannon, BS

Concurrent Session 4 of 4

4:30 p.m. - 5:30 p.m.  
**Patient Safety, Quality Improvement Initiatives & Outcomes Research Poster Session**  
Location: *Ambassador Room*  
Moderators:  
Damon J. Dyche, MD  
*Ames, IA*  
Kyle A. Richards, MD, FACS  
*Madison, WI*

Poster #14  
**READMISSION TO INDEX HOSPITAL: IMPROVING POST-OPE aggregation in Radical Cystectomy Patients**  
Chirag Doshi, MD, Eric Kirshenbaum, MD, Alex Gorbonos, MD, Marcus Quek, MD and Gopal Gupta, MD  
Loyola University Medical Center  
Presented By: Chirag Doshi, MD

Poster #15  
**A NATIONWIDE ANALYSIS OF COMPLETE URINARY TRACT EXTRIPATION**  
Jacob Jipp\(^1\), Zachary Smith, MD\(^2\), Peter Langenstroer, MD\(^1\), Kenneth Jacobsohn, MD\(^1\) and Scott Johnson, MD\(^1\)  
\(^1\)Medical College of Wisconsin; \(^2\)University of Chicago  
Presented By: Jacob Jipp, MD

Poster #16  
**QUALITY OF LIFE, ANXIETY, AND UROLOGICAL SYMPTOMS IN Males DIAGNOSED WITH LOCALIZED PROSTATE CANCER ON ACTIVE SURVEILLANCE: RESULTS FROM A 5 YEAR, PROSPECTIVE CLINICAL STUDY**  
Nicholas Kirwen, BA\(^1\), Brittany Lapin, PhD\(^1\), Kristian Novakovic, MD\(^1\), Brian Helfand, MD\(^1\), Jacqueline Petkewicz, MA\(^1\), Chih-Hsiung Wang, PhD\(^1\), Charles Brendler, MD\(^1\) and David Victorson, PhD\(^2\)  
\(^1\)NorthShore University HealthSystem; \(^2\)Northwestern University Feinberg School of Medicine  
Presented By: Nicholas Kirwen, BA
Poster #17  CHRONIC PELVIC PAIN: CLINICAL OUTCOMES FROM A MULTIDISCIPLINARY CLINIC
Lauren Westbay, MD1, Margaret Kistner, BS2, William Adams, PhD3, Larissa Bresler, MD1 and Colleen Fitzgerald, MD1
1Loyola University Medical Center; 2Loyola University Stritch School of Medicine; 3Loyola University Chicago Health Sciences Division
Presented By: Lauren Westbay, MD

Poster #18  PATIENT-REPORTED OUTCOMES IN NON-COMPLIANT PATIENTS AFTER ANTERIOR URETHROPLASTY
Michael Maidaa, BS, Christopher Tam, MD, Denise Juhr and Bradley Erickson, MD, MS
University of Iowa
Presented By: Michael Maidaa, BS

Poster #19  USE OF COMPUTER VISION MOTION ANALYSIS TO AID IN SURGICAL SKILL ASSESSMENT OF SUTURING TASKS
Brady Miller, MD, David Azari, BS, Robert Radwin, PhD and Brian Le, MD, MA
University of Wisconsin - Madison
Presented By: Brady L. Miller, MD, MPH

Poster #20  PATTERNS OF CONSULTATION FOR DIFFICULT URETHRAL CATHETERIZATION
John Cooper, MD, Mit Shah, BS, Daniel Szabo, MD, Amy Lehman, MAS, Tatevik Broutian, PhD and Fara Bellows, MD
Ohio State University Wexner Medical Center
Presented By: John L. Cooper, MD

Poster #21  QUALITY IMPROVEMENT: PROSTATE CANCER SCREENING PILOT AT THE ENGLEWOOD MILE SQUARE HEALTH CENTER
James Stinson, MS1, Michael Abern, MD2, Perrin Greene, MSW2, Karriem Watson, DHSc, MPH3 and Peter Gann, MD, PhD4
1University of Illinois Chicago College of Medicine; 2University of Illinois Hospital, Department of Urology Prostate Cancer Working Group; 3University of Illinois Hospital, Cancer Center Prostate Cancer Working Group; 4University of Illinois Hospital, Department of Pathology
Presented By: James A. Stinson III, MS.

Poster #22  PATIENT SATISFACTION WITH TELECYSTOSCOPY: USE OF REMOTE VIDEO TECHNOLOGY FOR BEDSIDE FLEXIBLE CYSTOSCOPY
Alex Tapper, MD1, Harjivan S. Kohli2, Adam J. Folbe, MD3, Jay B. Hollander, MD1 and Frank N. Burks, MD1
1Beaumont Health-Royal Oak, MI Department of Urology; 2Oakland University William Beaumont School of Medicine; 3Beaumont Health-Royal Oak, MI Department of Otolaryngology
Presented By: Alexander D. Tapper, MD
CHARACTERIZING AND PREDICTING UNPLANNED HEALTHCARE UTILIZATION AFTER UROLOGIC SURGICAL PROCEDURES IN THE ADULT POPULATION
Nicholas Arpey, Matthew Sloan, BS, Amy Hahn, BA, Denise Juhr, BA, Douglas Storm, MD and Bradley Erickson, MD
University of Iowa
Presented By: Matthew Sloan, BS, MD

Concurrent Sessions Begin

Concurrent Session 1 of 2

6:30 a.m. - 7:30 a.m. Video Session II
Location: Gold Room
Moderators: Clinton D. Bahler, MD, MS
            Carmel, IN
            Gopal N. Gupta, MD
            Maywood, IL

Video #9 BASE LAYER CLOSURE TECHNIQUES WITH OMISSION OF CORTICAL RENORRAPHY
Clinton Bahler, MD MS², Mark Pickhardt, MD¹, Jay Sulek, MD² and Chandru Sundaram, MD²
¹Indiana University Department of Su; ²Indiana University-Department of Urology
Presented By: Mark W. Pickhardt, MD

Video #10 INITIAL EXPERIENCE WITH MOSES LASER LITHOTRIPSY TECHNOLOGY
Tim Large, MD, Blake Anderson, MD, Joshua Heiman, BS and Amy Krambeck, MD
IU School of Medicine
Presented By: Tim Large, MD, MA
Video #11  OUTPATIENT BULBAR URETHROPLASTY: SURGICAL
TECHNIQUE AND PATHWAY TO ENHANCED RECOVERY
Jason Joseph, MD, Adam Miller, MD and Boyd Viers, MD
Department of Urology, Mayo Clinic
Presented By: Jason P. Joseph, MD

Video #12  ROBOTIC-ASSISTED LAPAROSCOPIC RETROPERITONEAL
RADICAL ADRENALECTOMY
Elizabeth Koehne, MD, Petar Bajic, MD and Gopal Gupta, MD
Loyola University
Presented By: Elizabeth L. Koehne, MD

Video #13  THE HEMOSTATIC BANDAGE: SUTURE-LESS NEPHRON
SPARING SURGERY
Marc Nelson, MD, Arpeet Shah, MD, Nicholas Elliot, MD and
Gopal Gupta, MD
Loyola University Medical Center
Presented By: Marc Nelson, MD

Video #14  ROBOTIC PYELOLITHOTOMY FOR THE INTACT REMOVAL
OF A COMPLETE STAGHORN STONE: A FEASIBLE
APPROACH EVEN AFTER PREVIOUS OPEN
PYELOLITHOTOMY
Alexander Chow, MD, Raymond Yong, BS, Peter Tsambarlis,
MD and Leslie Deane, MBBS, FRCSC
Rush University Medical Center
Presented By: Alexander Chow, MD

Video #15  ROBOTIC RADICAL ADRENALECTOMY FOR
PHEOCHROMOCYTOMA ASSOCIATED WITH ADRENAL
AND RENAL VEIN TUMOR THROMBUS
Parth Patel, MD, Chirag Doshi, MD, Gaurav Pahouja, MD and
Gopal Gupta, MD
Loyola University Medical Center
Presented By: Parth Patel, MD

Concurrent Session 2 of 2

6:30 a.m. - 7:30 a.m.  Male and Couple Infertility/ Sexual Dysfunction Podium
Session
Location: International Ballroom
Moderators: Ali A. Dabaja, MD
Detroit, MI
Amar Nath Rambhatla, MD
Detroit, MI
Discussant: David R. Paolone, MD
Madison, WI

6:30 a.m.  #69  SURGICAL OUTCOMES OF PLAQUE EXCISION AND
GRAFTING AND SUPPLEMENTAL TUNICA ALBUGINEA
PLICATION FOR TREATMENT OF PEYRONIE’S DISEASE
WITH SEVERE COMPOUND CURVATURE
Alexander Chow, MD, Steven Sidelsky, PharmD and Laurence
Levine, MD
Rush University Medical Center
Presented By: Alexander Chow, MD
WHICH SEXUAL DYSFUNCTIONS ARE MOST ASSOCIATED WITH RELATIONSHIP DISTRESS?
Jack Andrews, MD, Mathew Ziegelmann, MD, Manaf Alom, MBBS, Mary E. Westerman, MD, Kevin Hebert, MD and Landon Trost, MD
Mayo Clinic
Presented By: Jack Andrews, MD

TWO YEAR COST ANALYSIS OF PENILE REHABILITATION POST-PROSTATECTOMY FOR VARIOUS REGIMENS AT A SINGLE INSTITUTION
Mehul Patel, MD, Matthew Hudnall, MD, James Wren, MD, Anuj Desai, MD, Lauren Cooley, MD, PhD, Minh Pham, MD, Mary Kate Fitzgerald, MPH, Robert Brannigan, MD and Nelson Bennett, MD
Northwestern University
Presented By: Mehul Patel, MD

INFECTIOUS ADVERSE EVENTS OF PENILE PROSTHESES: A SYSTEMATIC REVIEW.
Joseph Mahon, MD1, Martha Faraday, PhD2 and Kevin McVary, MD1
1SIU; 2AUA
Presented By: Kevin T. McVary, MD, FACS

PATIENT AND PARTNER SATISFACTION RATES AFTER PENILE PROSTHESES SURGERY: A SYSTEMATIC REVIEW.
Joseph Mahon, MD1, Martha Faraday, PhD2 and Kevin McVary, MD1
1SIU; 2AUA
Presented By: Kevin T. McVary, MD, FACS

AGGLUTINATION: PREVALENCE AND CONTRIBUTORY FACTORS
Garrett Berger, PharmD1, Luriel Smith-Harrison, MD2 and Jay Sandlow, MD2
1College of Medicine, Medical College of Wisconsin; 2Department of Urology, Medical College of Wisconsin
Presented By: Garrett K. Berger, PharmD

SURGICAL TREATMENT OF PEYRONIE’S DISEASE IN THE OLDER MAN: CHARACTERISTICS AND OUTCOMES
George Abdelsayed, MD, Shaan Setia, MD and Laurence Levine, MD
Rush University Medical Center
Presented By: Shaan Aariyan Setia

TESTOSTERONE REPLACEMENT THERAPY IN MEN WITH HYPOGONADAL SYMPTOMS AND LOW-NORMAL TO NORMAL BASELINE TESTOSTERONE
Minh Pham, MD1, Alec Zhu, BA1, Alicia Roston, MPH2, Esther Finney, BA1, Eric Li, BA1, James Wren, MD1, Mary Kate Fitzgerald, MPH1, Lauren Cooley, MD, PhD1, Anuj Desai, MD1, Mehul Patel, MD1, Matthew Hudnall, MD, MPH1, Nicolas Francone, BS1, Robert Brannigan, MD1 and Nelson Bennett, MD1
1Northwestern University Feinberg School of Medicine; 2University of Illinois College of Medicine
Presented By: Minh Nguyen Pham, MD
7:02 a.m.  #77  A NOVEL TECHNIQUE FOR DIRECT VISUALIZATION OF RESERVOIR PLACEMENT FOR PENOSCROTAL INFLATABLE PENILE PROSTHESES USING A SINGLE INCISION
Joshua D. Roth, MD, M. Francesca Monn, MD, MPH, Thomas M. Shelton, MD and Matthew J. Mellon, MD
Indiana University School of Medicine Department of Urology
Presented By: M. Francesca Monn, MD, MPH

7:06 a.m.  #78  UNCERTAIN IMPACT OF ANTI-TNF AGENTS ON MALE FERTILITY: ARE MEN BEING COUNSELED?
Lauren Cooley, MD, PhD, Isaac Lam, BS, James Wren, MD, Nelson Bennett, MD and Robert Brannigan, MD
Northwestern
Presented By: Lauren Folgosa Cooley, MD, PhD

Concurrent Sessions End

7:30 a.m. - 8:00 a.m.  Break - Visit Exhibits
Location: Imperial Ballroom

8:00 a.m. - 8:45 a.m.  State-of-the-Art Lecture: Prostate Cancer Revisited
Guest Speaker: Joel B. Nelson, MD
Pittsburgh, PA

8:45 a.m. - 9:30 a.m.  Panel Discussion: Infertility
Moderator: Jay I. Sandlow, MD
Milwaukee, WI
Panelists: James M. Dupree IV, MD, MPH
Ann Arbor, MI
Craig S. Niederberger, MD
Chicago, IL
Daniel H. Williams IV, MD
Madison, WI

9:30 a.m. - 10:00 a.m.  Break - Visit Exhibits
Location: Imperial Ballroom

10:00 a.m. - 10:45 a.m.  NCS Resident Bowl: Round 1
Moderator: Bradley F. Schwartz, DO, FACS
Springfield, IL
Judges: Matthew T. Gettman, MD
Rochester, MN
Charles R. Powell, II, MD
Indianapolis, IN
Kyle A. Richards, MD, FACS
Madison, WI
Concurrent Sessions Begin

Concurrent Session 1 of 4

10:45 a.m. - 12:00 p.m.  Women in Urology Session*
Location: Gold Room
*This session is not CME accredited
Moderator: Elizabeth B. Takacs, MD
Iowa City, IA

10:45 a.m. - 11:30 a.m.  Panel Discussion: Facing the Challenges of Being a Woman Surgeon - How to Achieve Balance and Success
Moderator: Elizabeth B. Takacs, MD
Iowa City, IA
Panelists: Stephanie J. Kielb, MD
Chicago, IL
Kate H. Kraft, MD
Ann Arbor, MI
Cheryl T. Lee, MD
Columbus, OH
Tamra E. Lewis, MD, FACS
Lake Barrington, IL

11:30 a.m. - 12:00 p.m.  Achieving Financial Security Considerations in Your 30s, 40s, 50s, and 60s
Guest Speaker: Christine B. Long, JD
Des Moines, IA

Concurrent Session 2 of 4

10:45 a.m. - 12:00 p.m.  Young Urologists Speed Mentoring Program*
Location: Chancellor Room
*This session is not CME accredited

Concurrent Session 3 of 4

10:45 a.m. - 12:00 p.m.  Prostate Malignant II Podium Session
Location: International Ballroom
Moderators: Geoffrey N. Box, MD
Columbus, OH
Richard C. Sarle, MD
Dearborn, MI
Discussant: David F. Jarrard, MD
Madison, WI

10:45 a.m.  #79  EVALUATION OF PRE-BIOPSY RECTAL SWABS, AUGMENTED ANTIBIOTICS, AND FORMALIN NEEDLE DISINFECTION ON RATES OF TRANSRECTAL PROSTATE BIOPSY COMPLICATIONS
Christopher Russell, MD¹, Khurshid R. Ghani, MB, BCh², Ji Qi, MS², Susan Linsell, MHSA² and John T. Wei, MD²
¹University of Michigan; ²Department of Urology
Presented By: Christopher M. Russell, MD
MR IMAGING OF PROSTATE CANCER SHOWS REDUCED ENHANCEMENT KINETIC CURVES IN MEN ON 5-ALPHA REDUCTASE INHIBITORS: IMPLICATIONS FOR CANCER DETECTION
Shivashankar Damodaran, MD, Brady Miller, MD, MPH, Lori Mankowski Gettle, MD, Kelcz Frederick, MD, PhD, Glen O. Allen, MPH, Kyle A. Richards, MD, E. Jason Abel, MD, Tracy Downs, MD and David Jarrard, MD
University of Wisconsin
Presented By: Brady L. Miller, MD, MPH

CREATION AND PILOT TESTING OF AN MRI/US FUSION BIOPSY TRAINING SYSTEM
Brandon Caldwell, BA, David Greenwald, MD, Daniel Moreira, MD, Rongwen Tain, PhD, Winnie Mar, MD, Karen Xie, MD, Christopher Coogan, MD and Michael Abern, MD
University of Illinois at Chicago
Presented By: Brandon Caldwell, BA

NATIVE AMERICAN AND WEST AFRICAN ANCESTRY ARE ASSOCIATED WITH RISK OF SIGNIFICANT PROSTATE CANCER AMONG RACIALLY DIVERSE MEN UNDERGOING PROSTATE BIOPSY
James Stinson, MS, Adam B. Murphy, MD, MBA, Oluwarotimi S. Nettey, MD, MHS, Maria Ruden, Pooja Gogana, M.A. Dixon, Courtney M.P. Hollowell, MD, Roohallah R. Sharifi Sharifi, MD, William J. Catalona, MD, Andre Kajdacsy-Balla, MD, PhD, Virgilia Macias, MD and Rick Kittles, MD, PhD
University of Illinois Chicago College of Medicine; Northwestern University Feinberg School of Medicine, Department of Urology; John H. Stroger Hospital of Cook County, Division of Urology; Jesse Brown VA Medical Center, Division of Urology, Dept. of Surgery; University of Illinois at Chicago, Department of Pathology; City of Hope Dept. of Population Sciences, Division of Health Equities
Presented By: James A. Stinson III, MS

THE EFFECT OF PROSTATE VOLUME ON MRI/US FUSION BIOPSY POSITIVITY RATES
Robert Batler, MD, Ericka Bagi, RN, Jesse Miles, David Hollensbe, MD, Ronald Suh, MD and Jason Mullinix, MD
Urology of Indiana; Radiology of Indiana
Presented By: Robert A. Batler, MD, MBA

PERINEURAL INVASION DOES NOT ASSOCIATE WITH WORSE GENOMIC PROSTATE SCORE OUTCOMES IN MEN ELIGIBLE FOR ACTIVE SURVEILLANCE
Bryan Naelitz, BA, Daniel Hettle, BS, Anna Faris, BA, Shree Agrawal, BS and Eric Klein, MD
Cleveland Clinic Glickman Urology and Kidney Institute
Presented By: Bryan D. Naelitz, BA

PATIENTS PERCEPTION ON OBTAINING THEIR GENETIC RISK SCORE FOR PROSTATE CANCER
Richard Fantus, MD, Jianfeng Xu, MD, PhD, Elena Genova-Peeva, Holly Laduca, Chi Wang, PhD, Brian Helfand, MD, PhD and Joshua Aizen, MD
University of Chicago; NorthShore University; Ambry Genetics
Presented By: Joshua M. Aizen, MD
11:13 a.m. #86  THE EFFECT OF THE TIMING OF BIOCHEMICAL FAILURE AFTER EXTERNAL BEAM RADIOTHERAPY OR LOW DOSE-RATE BRACHYTHERAPY FOR DEFINITIVE PROSTATE CANCER TREATMENT
James Ulchaker, MD, FACS, Jay Ciezki, MD, Chandana Reddy, MS, Omar Mian, MD, PhD, Rahul Tendulkar, MD, Kenneth Angermeier, MD, Steven Campbell, MD, PhD, Andrew Stephenson, MD and Eric Klein, MD
Cleveland Clinic
Presented By: James C. Ulchaker, MD, FACS

11:17 a.m. #87  THE IMPACT OF CELECOXIB ON OUTCOMES IN ADVANCED PROSTATE CANCER PATIENTS UNDERGOING ANDROGEN DEPRIVATION THERAPY
Tyler Etheridge¹, Jinn-ing Liou, PhD², Tracy M. Downs, MD³, E. Jason Abel, MD⁴, Kyle A. Richards, MD⁵ and David F. Jarrard, MD⁶
¹University of Wisconsin School of Medicine and Public Health; ²University of Wisconsin School of Medicine and Public Health, Department of Medicine; ³University of Wisconsin School of Medicine and Public Health, Department of Urology
Presented By: Tyler Etheridge, BA

11:21 a.m. #88  DIFFERENCES IN PATHOLOGIC OUTCOMES OF UNIVERSITY AND COMMUNITY-BASED PROSTATECTOMY: IS IT THE SURGEON OR THE PATIENT?
David Greenwald¹, Alicia Roston, MPH¹, Matt Wonais, BS¹, Jason Huang, MD¹, Ikenna Madueke, MD, PhD¹, Laurel Sofer, MD¹, Neha Malhotra, MD¹, Daniel P. Dalton, MD²,³, Simone Crivellaro, MD¹ and Paul Yonover, MD¹,³
¹University of Illinois, Chicago; ²Northwestern; ³Uropartners
Presented By: David T. Greenwald, MD

11:25 a.m. #89  GLEASON SCORE (GS) UPGRADING AT RADICAL PROSTATECTOMY: IS IT AN ACTUAL UPGRADING? AN OVERVIEW USING MULTI-PARAMETRIC MRI
Amr Mahran, MD¹, Christina Buzzy, PhD², Bahar Mansori, MD¹, Julia Yang, MS¹, Irina Jaeger, MD¹, Vikas Gulani, MD, PhD¹ and Lee Ponsky, MD¹
¹University Hospitals Cleveland Medical Center; ²Case Western Reserve University School of Medicine
Presented By: Amr Mahran, MD

11:29 a.m. #90  MATCHED COMPARISON OF OPEN RETROPUBIC AND ROBOT-ASSISTED RADICAL PROSTATECTOMY FOR PROSTATIC ADENOCARCINOMA: LONG TERM ONCOLOGIC OUTCOMES
Jason Joseph, MD¹, Laureano Rangel, MS², Igor Frank, MD¹, Matthew Tollefson, MD¹, Stephen Boorjian, MD¹, R. Houston Thompson, MD¹, R. Jeffrey Karnes, MD¹ and Matthew Gettman, MD¹
¹Department of Urology, Mayo Clinic; ²Department of Health Sciences Research, Division of Biostatistics, Mayo Clinic
Presented By: Jason P. Joseph, MD
11:33 a.m. #91 PREOPERATIVE MULTIPARAMETRIC PROSTATE MRI ALLOWS FOR HIGHER RATE OF NERVE SPARING IN MEN WITH HIGH RISK PROSTATE CANCER WITHOUT COMPROMISING ONCOLOGIC OUTCOMES
Chirag Doshi, MD, Michael Gong, BS, Michelle Van Kuiken, MD, Cara Joyce, PhD, Marcus Quek, MD and Gopal Gupta, MD
Loyola University Medical Center
Presented By: Chirag Doshi, MD

11:37 a.m. #92 EVALUATING THE POTENTIAL ROLE OF SALVAGE VESICULECTOMY FOR PROSTATE CANCER RECURRENCE
Kevin Wymer, MD, Vidit Sharma, MD, Brian Davis, MD, Eugene Kwon, MD, Lance Mynderse, MD and R. Jeffrey Karnes, MD
Mayo Clinic
Presented By: Kevin Wymer, MD

11:41 a.m. #93 PROSTATE HEALTH INDEX DENSITY AS A PREDICTOR OF CLINICALLY SIGNIFICANT PROSTATE CANCER
Richard Fantus, MD1, Joshua Aizen, MD1, Jianfeng Xu, MD, PhD2, Brian Helfand, MD, PhD2 and Craig Labbate, MD1
1University of Chicago; 2NorthShore University
Presented By: Craig Labbate, MD

11:45 a.m. - 12:00 p.m. Q&A

Concurrent Session 4 of 4
10:45 a.m. - 12:00 p.m. Adrenal/ Kidney/ Ureter - Benign/Malignant Poster Session
Location: Ambassador Room
Moderators: Kenneth Jacobsohn, MD
Milwaukee, WI
Daniel M. Moreira, MD, MHS
Chicago, IL

Poster #24 THE URINARY MICROBIOME: DEFINING THE DIFFERENCE BETWEEN VOIDED AND CATHETERIZED URINE IN NON-INFECTED MALES
Petar Bajic, MD1, Michelle Van Kuiken, MD1, Ryan Dornbier, MD1, Bethany Burge, MD1, Alan Wolfe, PhD2, Kristin Baldea, MD1, Larissa Bresler, MD1 and Ahmer Farooq, MD1
1Loyola University Medical Center; 2Loyola University Chicago
Presented By: Petar Bajic, MD

Poster #25 DOES RADIATION EXPOSURE PORTEND WORSE POSTOPERATIVE OUTCOMES AFTER CYSTECTOMY WITH URINARY DIVERSION FOR BENIGN INDICATIONS?
Paurush Babbar, MD, Andrew Sun, MD, Ann Kim, BS, Daniel Hettel, BS, Shree Agrawal, BS, Alice Crane, MD, Daniel Sun, MD, Ryan Berglund, MD, Hadley Wood, MD and Kenneth Angermeier, MD
Cleveland Clinic
Presented By: Paurush Babbar, MD
**Poster #26**
PREDICTING MORBID OUTCOMES IN PATIENTS PRESENTING WITH XANTHOGANULOMATOUS PYELONEPHRITIS: A SINGLE INSTITUTIONAL EXPERIENCE
Ting Wei, Medical Student2, Chandra Flack, MD1, Adam Calaway, MD1, Clint Cary, MD1 and Ronald Boris, MD1
1Dept. of Urology, Indiana University; 2Indiana University, School of Medicine
Presented By: Ronald S. Boris, MD

**Poster #27**
MESENCHYMAL STEM CELL SECRETOME IMPROVES RECOVERY OF KIDNEY FUNCTION AFTER ISCHEMIC INJURY IN RATS INDEPENDENT OF ROUTE OF ADMINISTRATION
Daniel Sun, MD, Bradley Gill, MD, Paurush Babbar, MD, Dan Li Lin, Mei Kuang and Margot Damaser, PhD
Cleveland Clinic Foundation
Presented By: Daniel Z. Sun, MD

**Poster #28**
PERCUTANEOUS MICROWAVE ABLATION FOR CO-MORBID PATIENTS WITH 4-7CM RENAL CELL CARCINOMA TUMORS
Daniel Shapiro, MD, Sara Best, MD, Shane Wells, MD, Timothy Ziemlewicz, MD, Meghan Lubner, MD, David Jarrard, MD, Kyle Richards, MD, Tracy Downs, MD, Stephen Nakada, MD FACS FRCS and E. Jason Abel, MD FACS
University of Wisconsin School of Medicine and Public Health
Presented By: Daniel D. Shapiro, MD

**Poster #29**
IDENTIFYING BARRIERS TO OBTAINING GENETIC COUNSELING IN EARLY-ONSET RENAL CELL CARCINOMA
Brady Miller, MD, MPH and E Jason Abel, MD
University of Wisconsin
Presented By: Brady L. Miller, MD, MPH

**Poster #30**
INCREASED USE OF ABLATION FOR T1B RENAL CANCERS WITH IMPROVED SURVIVAL RELATIVE TO OBSERVATION
M. Ryan Farrell, MD, MPH1, Jordan Tasse, MD2, Sreekumar Madassery, MD2, Bulent Arslan, MD2 and Srinivas Vourganti, MD1
1Rush University Medical Center; 2Rush University Medical Center, Division of Interventional Radiology
Presented By: M. Ryan Farrell, MD, MPH

**Poster #31**
CLINICOPATHOLOGIC ANALYSIS OF RENAL CELL CARCINOMA CONTAINING INTRATUMORAL FAT AND OSSEOUS METAPLASIA
Zhaoying Xian, BS, Jason Orien, MD, Geoffrey Box, MD and Debra Zynger, MS, MD
The Ohio State University Medical Center
Presented By: Zhaoying Xian, MD

**Poster #32**
EVOLVING TRENDS FOR SELECTED TREATMENTS OF T1A RENAL CELL CARCINOMA
Johnathan Doolittle, MD, Keegan Zuk, MD, Josh Piotrowski, MD, Peter Langenstroer, MD, Kenneth Jacobsohn, MD, William See, MD and Scott Johnson, MD
MCW
Presented By: Johnathan Doolittle, MD
COMPARATIVE ANALYSIS OF PERIOPERATIVE OUTCOMES FOR PATIENTS WITH 4-7CM RCC TREATED WITH EITHER MICROWAVE ABLATION, PARTIAL NEPHRECTOMY OR RADICAL NEPHRECTOMY

Daniel Shapiro, MD, Shane Wells, MD, Meghan Lubner, MD, David Jarrard, MD, Kyle Richards, MD, Tracy Downs, MD, Glenn Allen, Sara Best, MD, Stephen Nakada, MD, FACS, FRCS, and E. Jason Abel, MD, FACS

University of Wisconsin School of Medicine and Public Health

Presented By: Daniel D. Shapiro, MD

NOVEL USE OF FOLATE-TARGETED INTRAOPERATIVE FLUORESCENCE, OTL38, IN ROBOT-ASSISTED LAPAROSCOPIC PARTIAL NEPHRECTOMY: CLINICAL EXPERIENCE WITH FIRST 9 CASES

Jay Sulek, MD, Ethan Ferguson, MD, Max Jacobsen, PhD, Courtney Finnearty, BS, George Sandusky, MD and Chandru Sundaram, MD

Indiana University

Presented By: Ethan L. Ferguson, MD

Concurrent Sessions End

12:00 p.m. - 1:15 p.m.  Industry Sponsored Lunch Symposium
Location: Crystal Room

12:00 p.m. - 1:15 p.m.  Industry Sponsored Lunch Symposium
Location: Regent Room

1:15 p.m. - 1:55 p.m.  NCS Faculty Lecture: Testosterone-What's The Fuss?
Speaker: Daniel H. Williams IV, MD
Madison, WI

1:55 p.m. - 2:10 p.m.  AUA Update
AUA President: Robert C. Flanigan, MD, FACS
Maywood, IL

2:10 p.m. - 2:20 p.m.  Report from the NCS AUA Foundation Scholar
Presenter: Christina B. Ching, MD
Columbus, OH

2:20 p.m. - 2:25 p.m.  Award Presentation: John D. Silbar, Thirlby and Traveling Fellowship
Presenter: Aaron J. Milbank, MD
Woodbury, MN

2:25 p.m. - 3:00 p.m.  Presidential Address: The Importance of Mentors and Mentoring
President: Gary J. Faerber, MD
Durham, NC

3:00 p.m. - 3:45 p.m.  Annual Business Meeting
3:45 p.m. - 4:30 p.m.  **Panel Discussion: Urologic Reconstruction**
Moderator: Christopher M. Gonzalez, MD, MBA, FACS
*Maywood, IL*
Panelists: Richard Bihrl, MD
*Indianapolis, IN*
Sean P. Elliott, MD, MS
*Minneapolis, MN*
Michael L. Guralnick, MD, FRCSC
*Milwaukee, WI*

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**Concurrent Sessions Begin**

Concurrent Session 1 of 4

4:30 p.m. - 5:30 p.m.  **Bladder Malignant Podium Session**
Location: *Gold Room*
Moderators: Hristos Z. Kaimakliotis, MD
*Zionsville, IN*
Marcus L. Quek, MD
*Maywood, IL*
Discussant: Gary D. Steinberg, MD
*Chicago, IL*

4:30 p.m.  #94  AGE AND GENDER HAVE NO EFFECT ON EXPRESSION LEVELS OF MARKERS OF IMMUNE CELL INFILTRATION AND IMMUNE CHECKPOINT PATHWAYS IN PATIENTS WITH MUSCLE INVASIVE TRANSITIONAL CELL CARCINOMA OF THE BLADDER: A RETROSPECTIVE STUDY OF 50 PATIENTS TREATED WITH RADICA
Bradley Holland¹, Akshay Sood, MD², Ali Dabaja, MD², Kristin Delfino, PHD¹, Danuta Dynda, MD¹, Natalie Freed, MD³, Sofia Ran, PHD¹ and Shaheen Alanee, MD²
¹South Illinois University; ²Henry Ford Health System; ³Memorial Medical Center
Presented By: Bradley Holland, MD

4:34 p.m.  #95  PATHOLOGICAL RESPONSE AT RADICAL CYSTECTOMY WITH CISPLATIN-BASED CHEMOTHERAPY: DOES VARIANT HISTOLOGY MATTER?
Adam Calaway, Elhaam Bandali, Naveen Krishnan, MD, Clint Cary, MD, Timothy Masterson, MD, Thomas Gardner, MD, Richard Bihrl, MD, Richard Foster, MD, Michael Koch, MD and Hristos Kaimakliotis, MD
Indiana University
Presented By: Adam C. Calaway, MD

4:38 p.m.  #96  INCIDENCE AND RESISTANCE PATTERNS OF POST RADICAL CYSTECTOMY INFECTIONS, SINGLE INSTITUTION EXPERIENCE
Mohamed Hendawi, MD¹, Hiroko Miyagi, MD², Saad Hatahet, MD², Kamak Pohar, MD², Megan Merrill, MD², Cheryl Lee, MD² and Ahmad Shabsigh, MD²
¹The Ohio State University, Wexner Medical Center; ²The Ohio State University
Presented By: Mohamed Hendawi
4:42 p.m.  #97  EPIDURAL USE AT CYSTECTOMY AND ITS ASSOCIATION WITH PERIOPERATIVE AND SURVIVAL OUTCOMES IN THE UNITED STATES, 2002-2014: A POPULATION-BASED STUDY
Brady Miller, MD, MPH, E. Jason Abel, MD, Glenn Allen, MPH, Jeff Havlena, MS, Jessica R. Schumacher, PhD, David Jarrard, MD, Tracy Downs, MD and Kyle A. Richards, MD
University of Wisconsin
Presented By: Brady L. Miller, MD, MPH

4:46 p.m.  #98  PROSPECTIVE ENHANCED RECOVERY AFTER SURGERY INTERVENTION FOR CYSTECTOMY IN NEOADJUVANT CHEMOTHERAPY RECIPIENTS
Anna Faris, BA, Abhinav Khanna, MD, Anna Zampini, MD, Alice Crane, MD, Kyle Ericson, MD, Michele Fascelli, MD, Prithvi Murphy, MD, Byron Lee, MD and Georges-Pascal Haber, MD
1Cleveland Clinic Lerner College of Medicine; 2Cleveland Clinic
Presented By: Anna E. Faris, BA

4:50 p.m.  #99  FRAILTY AND ITS IMPACT ON PATIENTS RECEIVING NEOADJUVANT CHEMOTHERAPY PRIOR TO RADICAL CYSTECTOMY
Jeremy West, MD, Anthony Oberle, MD, Nathan Brooks, MD, Lewis Thomas, MD, Sarah Mott, MS, Michael O’Donnell, MD and Kenneth Nepple, MD
1University of Iowa Hospitals and Clinics; 2Holden Comprehensive Cancer Center, University of Iowa
Presented By: Jeremy M. West, MD

4:54 p.m.  #100  LONGTERM FOLLOW-UP OF A PHASE II CLINICAL TRIAL OF INTRAVESICAL BACILLUS CALMETTE-GUERIN (BCG) FOLLOWED BY SUNITINIB FOR THE TREATMENT OF HIGH-RISK NON-MUSCLE INVASIVE BLADDER CANCER (NMIBC)
Colton H. Walker, MD, Amir H. Lebastchi, MD, Christopher M. Russell, MD, Stephanie Daignault-Newton, MS, Monica Liebert, PhD, Khaled S. Hafez, MD, Maha H. Hussain, MD, Jeffrey S. Montgomery, MD, David C. Miller, MD, Brent K. Hollenbeck, MD, Alon Z. Weizer, MD and Samuel D. Kaffenberger, MD
1Department of Urology, University of Michigan; 2Robert H. Lurie Comprehensive Cancer Center, Northwestern University
Presented By: Colton H. Walker, MD

4:58 p.m.  #101  PARTIAL CYSTECTOMY AND RADICAL CYSTECTOMY FOR BLADDER CANCER: AN ANALYSIS OF THE NATIONAL CANCER DATABASE
Keegan Zuk, MD, Michael Moriarty, MD, Johnathan Doolittle, MD, Joshua Piotrowski, MD, PhD, Peter Dietrich, MD, Kenneth Jacobsohn, MD, Peter Langenstroer, MD and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Keegan Zuk, MD
5:02 p.m. #102 THE IMPACT OF LYMPH NODE YIELD ON SURVIVAL FOLLOWING ROBOTIC AND OPEN RADICAL CYSTECTOMY FOR BLADDER CANCER
Peter Dietrich, MD, Keegan Zuk, MD, Kenneth Jacobsohn, MD, Peter Langenstroer, MD, William See, MD and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Peter Dietrich, MD

5:06 p.m. #103 VALIDATION OF A NOMOGRAM FOR TREATMENT DECISION-MAKING IN BLADDER CANCER PATIENTS UNDERGOING RADICAL CYSTECTOMY
Albert Kim, MD, PhD, Stephen Williams, MD, Fredrick Schumacher, PhD, Robert Abouassaly, MD, Zhengyi Chen, PhD and Simon Kim, MD
Case Western University
Presented By: Albert H. Kim, MD, PhD

5:10 p.m. #104 INTRAVESICAL QUADRUPLE CHEMOTHERAPY IN THE ULTIMATE SALVAGE TREATMENT OF UNRESPONSIVE NON-MUSCLE INVASIVE BLADDER CANCER
Anthony Oberle, Ryan Steinberg, MD, Lewis Thomas, MD and Michael O’Donnell, MD
University of Iowa Hospitals and Clinics
Presented By: Anthony D. Oberle, MD

5:15 p.m. - 5:30 p.m. Q&A

Concurrent Session 2 of 4

4:30 p.m. - 5:30 p.m. Laparoscopy/Robotics Podium Session
Location: International Ballroom
Moderators: Sapan N. Ambani, MD
Ann Arbor, MI
Alex Gorbonos, MD, FACS
Maywood, IL
Discussant: Ronald S. Boris, MD
Indianapolis, IN

4:30 p.m. #105 COMPARISON OF PERIOPERATIVE OUTCOMES BETWEEN PARENCHYMAL SPARING ROBOTIC PARTIAL NEPHRECTOMY APPROACHES
Asha Mannancheril¹, Arpeet Shah, MD², Sara Capodice, MD², Cara Joyce, PhD², Marcus Quek, MD² and Gopal Gupta, MD²
¹Stritch School of Medicine at Loyola University Chicago; ²Loyola University
Presented By: Asha Mannancheril, MA, BS

4:34 p.m. #106 EFFECT OF MINIMALLY INVASIVE PARTIAL VERSUS RADICAL NEPHRECTOMY FOR LARGE RENAL MASSES ON RENAL FUNCTION IN PATIENTS WITH PREOPERATIVE CHRONIC KIDNEY DISEASE: A MULTICENTER STUDY
Peter Dietrich, MD¹, Ross Everett, MD¹, Scott Johnson, MD¹, Kenneth Jacobsohn, MD¹ and Ricardo Autorino, MD²
¹Medical College of Wisconsin; ²Virginia Commonwealth University
Presented By: Peter Dietrich, MD
4:38 p.m.  #107  FOLATE RECEPTOR ALPHA (FRA) EXPRESSION IN TUMOR AND NORMAL RENAL PARENCHYMA: AN ANALYSIS OF RESULTS FROM PHASE 2 FOLATE-TARGETED FLUORESCENCE STUDY
Jay Sulek, MD, Ethan Ferguson, MD, Max Jacobsen, PhD, Courtney Finnearty, BS, George Sandusky, PhD and Chandru Sundaram, MD
Indiana University
Presented By: Ethan L. Ferguson, MD

4:42 p.m.  #108  LAPAROSCOPIC/ROBOTIC-ASSISTED VERSUS OPEN NEPHROURETERECTOMIES: PERIOPERATIVE AND ONCOLOGIC OUTCOMES IN UPPER TRACT UROTHELIAL CARCINOMA
Keerthana Mohankumar, Jay Sulek, MD, Francesca Monn, MD and Chandru Sundaram, MD
Indiana University
Presented By: Keerthana Mohankumar

4:46 p.m.  #109  ROBOTIC NEPHRECTOMY FOR MASSIVE RENAL TUMORS
Ronney Abaza, MD, FACS
OhioHealth
Presented By: Ronney Abaza, MD, FACS

4:50 p.m.  #110  BARRIERS TO MINIMALLY INvasive RENAL SURGERY FOR RENAL MALIGNANCY: A NATIONAL CANCER DATABASE ANALYSIS
Michael Moriarty, MD, Keegan Zuk, MD, Nicholas Gannon, Johnathon Doolittle, MD, Kenneth Jacobsohn, MD, Peter Langenstroer, MD, William See, MD and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Michael A. Moriarty, MD

4:54 p.m.  #111  IMPACT OF ROBOTIC INTRACORPOREAL DIVERSION ON RECOVERY AND READMission IN CYSTECTOMY PATIENTS
Alice Crane, MD, PhD, Abhinav Khanna, MD, MPH, Vishnuvardhan Ganesan, MD, Anna Zampini, MD, Kyle Ericson, MD, Prithvi Murthy, MD, Michele Fascelli, MD, Byron Lee, MD, PhD and Georges-Pascal Haber, MD, PhD
Cleveland Clinic
Presented By: Alice L. Crane, MD, PhD

4:58 p.m.  #112  INTRAURETERAL INDOCYANINE GREEN EFFECTIVELY AUGMENTS URETERAL IDENTIFICATION DURING COMPLEX NON-UROLOGIC ROBOTIC SURGERY
Jason Joseph, MD1, David Yang, MD1, Scott Kelley, MD2, Kellie Mathis, MD2, Amy Lightner, MD2 and Boyd Viers, MD1
1Department of Urology, Mayo Clinic; 2Division of Colon and Rectal Surgery, Department of Surgery, Mayo Clinic
Presented By: Jason P. Joseph, MD

5:02 p.m.  #113  OPEN VERSUS MINIMALLY INVASIVE CYSTECTOMY WITH URINARY DIVERSION FOR BENIGN INDICATIONS – DOES THE APPROACH MATTER?
Paurush Babbar, MD, Andrew Sun, MD, Shree Agrawal, BS, Ann Kim, BS, Daniel Hettel, BS, Hadley Wood, MD, Kenneth Angermeier, MD and Ryan Berglund, MD
Cleveland Clinic
Presented By: Andrew Y. Sun, MD
5:06 p.m.  #114  SAFETY AND FINANCIAL IMPACT OF CLINICAL PATHWAY WITH SAME-DAY DISCHARGE FOLLOWING ROBOTIC PROSTATECTOMY
Matthew Ferroni, MD, Pablo Sierra, MD and Ronney Abaza, MD, FACS
OhioHealth
Presented By: Ronney Abaza, MD, FACS

5:15 p.m. - 5:30 p.m.  Q&A

Concurrent Session 3 of 4

4:30 p.m. - 5:30 p.m.  Endourology/ Stone Disease Poster Session
Location: State Room
Moderators:  Bodo E. Knudsen, MD, FRCSC
               Columbus, OH
               David A Leavitt, MD
               Detroit, MI

Poster #35  WITHDRAWN

Poster #36  DIABETES MELLITUS AND DECREASED ESTIMATED GLOMERULAR FILTRATION RATE ARE ASSOCIATED WITH LOW URINARY PH IN PATIENTS WITH NEPHROLITHIASIS
Ryan Dornbier, MD¹, Spencer Hart, MD², Parth Patel, MD², Alex Kandabarow, MD², Carrie Johans, MD², Robert Blackwell, MD³, Kristin Baldea, MD² and Thomas Turk, MD²
¹Loyola University Medical Center; ²Loyola University; ³Southern Illinois University
Presented By: Ryan A. Dornbier, MD

Poster #37  URETEROSCOPY FOR THE MANAGEMENT OF RENAL TRANSPLANT UROLITHIASIS
Rebecca Gerber, MD, Viacheslav Iremashvili, MD, Sara Best, MD, Sean Hedican, MD and Stephen Nakada, MD, FACS, FRCS
University of Wisconsin Department of Urology
Presented By: Rebecca Gerber, MD

Poster #38  PUBLIC PERCEPTIONS OF THE INFLUENCE OF DIET ON KIDNEY STONE FORMATION
Benjamin Marsh, MD, Niranjan Sathianathen, MBBS, Resha Tejpaul, Jacob Albersheim-Carter, Elizabeth Bearrick and Michael Borofsky, MD
University of Minnesota
Presented By: Benjamin M. Marsh, MD

Poster #39  PREOPERATIVE AND POSTOPERATIVE FACTORS ARE PREDICTORS OF POSTOPERATIVE PROSTATE VOLUME AFTER HOLMIUM LASER ENucleation OF THE PROSTATE (HOLEP)
Deepak Agarwal, MD, Vidit Sharma, MD and Marcelino Rivera, MD
Mayo Clinic
Presented By: Deepak K. Agarwal, MD
Poster #40  INITIAL EXPERIENCE WITH MOSES TECHNOLOGY FOR UPPER URINARY TRACT CALCULI
Tim Large, MD, Heiman Joshua, BS, Anderson Blake, MD and Krambeck Amy, MD
IU School of Medicine
Presented By: Tim Large, MD, MA

Poster #41  DOES VOLUMETRIC STONE MEASUREMENT AUGMENT OUR UNDERSTANDING?
Parth Patel, MD1, Abrar Mian2, Alex Kandabarow, MD1, Spencer Hart, MD1, Carrie Johans, MD1, Ryan Dornbier, MD1, Robert Blackwell, MD1, Kristin Baldea, MD1 and Thomas Turk, MD1
1Loyola University Medical Center; 2Loyola University Chicago
Presented By: Parth Patel, MD

Poster #42  CONCURRENT HOLMIUM LASER ENucleATION OF THE PROSTATE AND MINIMALLY INVASIVE UPPER URINARY TRACT STONE PROCEDURES
Joshua Heiman, BS, Blake Anderson, MD, Tim Large, MD, Amy Krambeck, MD and James Lingeman, MD
IU School of Medicine
Presented By: Joshua Heiman, BS

Poster #43  SINGLE HOSPITAL REVIEW OF FLEXIBLE FIBEROPTIC URETEROSCOPE BREAKAGE
Deepak Agarwal, MD, Vidit Sharma, MD and Marcelino Rivera, MD
Mayo Clinic
Presented By: Deepak K. Agarwal, MD

Concurrent Session 4 of 4
4:30 p.m. - 5:30 p.m.  Prostate Malignant Poster Session
Location: Ambassador Room
Moderator: James O. Peabody, MD
Detroit, MI

Poster #44  THE ROLE OF SPOP IN THE REGULATION OF ESTROGENIC ACTIVITY IN PROSTATE STEM CELLS
David Greenwald, Dan-Ping Hu, MD, Wen-Yang Hu, PhD and Gail Prins, PhD
University of Illinois, Chicago
Presented By: David T. Greenwald, MD

Poster #46  CANCER DETECTION AND INFECTIOUS COMPLICATION RATES FOR AN OFFICE-BASED ULTRASOUND-GUIDED TRANSPERINEAL PROSTATE BIOPSY
Adam Cole, MD, Arvin George, MD and John Wei, MD
University of Michigan
Presented By: Adam I. Cole, MD

Poster #47  IN-OFFICE FREEHAND TRANSPERINEAL TEMPLATE MAPPING BIOPSY PERFORMED UNDER LOCAL ANESTHESIA USING A NOVEL NEEDLE GUIDE: FEASIBLE, SAFE, AND EFFECTIVE FOR CANCER DETECTION
Matthew Lee, MD1, Shaan Setia, MD2, Adam Cole, MD1, Chandy Ellimoottil, MD1, Lindsay Herrel, MD1, John Wei, MD1, Srinivas Vourganti, MD2, Arvin George, MD1 and Matthew Allaway, MD
1University of Michigan; 2Rush University Medical Center
Presented By: Matthew Lee, MD
Poster #48

PROSTATE CANCER UPGRADING IN A COMMUNITY-BASED PRACTICE: HOW ACCURATE IS CORE NEEDLE BIOPSY?

David Greenwald1, Jason Huang, MD1, Ikenna Madueke, MD, PhD1, Laurel Sofer, MD1, Neha Malhotra, MD1, Lester Raff, MD2, Justin J. Cohen, MD2, Daniel P. Dalton, MD2,3 and Paul Yonover, MD1,2
1University of Illinois, Chicago; 2Uropartners; 3Northwestern
Presented By: David T. Greenwald, MD

Poster #49

VANISHING PROSTATE CANCER IN PREVIOUSLY BIOPSY PROVEN GLEASON 3+3 MEN ON ACTIVE SURVEILLANCE

Chirag Doshi, MD, Michelle Van Kuiken, MD, Cara Joyce, PhD, Marcus Quek, MD and Gopal Gupta, MD
Loyola University Medical Center
Presented By: Chirag Doshi, MD

Poster #50

SEMINAL VESICAL INVASION CORRELATES WITH PCSM AMONG PATIENTS WITH NCCN-DEFINED ADVERSE PATHOLOGIC FEATURES

Shree Agrawal2, Nitin Yerram, MD3, Michael Rydberg, MD1, Sudhir Isharwal, MD3, Paurush Babbar, MD3, Andrew Stephenson, MD3 and Eric Klein, MD3
1Cleveland Clinic Foundation; 2Cleveland Clinic Lerner College of Medicine; 3Cleveland Clinic Foundation - Glickman Urological and Kidney Institute
Presented By: Michael G. Rydberg, MD

Poster #51

EFFECT OF MRI FUSION BIOPSY ON PATHOLOGIC UPGRADE AND DOWNGRADE RATES FOR RADICAL PROSTATECTOMY

Antoin Douglawi, MD1, Adam Calaway, MD2, Clinton Bahler, MD2, Thomas Gardner, MD2, Temel Tirkes, MD2, Clint Cary, MD2, Michael Koch, MD2 and Timothy Masterson, MD2
1Indiana University, Dept. of Urology; 2Indiana University
Presented By: Antoin Douglawi, MD

Poster #52

PSA SCREENING IN MEN WITH FAMILY HISTORY OF PROSTATE AND BREAST CANCER: AN NHIS ANALYSIS

Matthew Kasson, BS1, Connor Hoge, BS1, Dhruti Patel, MD2 and Abhinav Sidana, MD2
1University of Cincinnati College of Medicine; 2UC Health Department of Urology
Presented By: Matthew Kasson, BS

Poster #53

THE ASSOCIATION OF PROSTATE BIOPSY CHARACTERISTICS ON ADVERSE PATHOLOGY AT RADICAL PROSTATECTOMY IN THE MRI ERA

Adam Cole, MD, Arvin George, MD and Todd Morgan, MD
University of Michigan
Presented By: Adam I. Cole, MD

Poster #54

ASSOCIATION OF URINARY PCA3 AND TMPRSS2:ERG RISK GROUPS WITH DETECTION OF PROSTATE CANCER AT REPEAT BIOPSY IN MEN WITH AN INITIAL NEGATIVE PROSTATE BIOPSY

Matthew Lee, MD, Javed Siddiqui, BS, Ganesh Palapattu, MD, John Wei, MD, Arul Chinnaiyan, MD, Scott Tomlins, MD and Simpa Salami, MD
University of Michigan
Presented By: Matthew Lee, MD
Poster #55

THE IMPACT OF TIME FROM PROSTATE BIOPSY ON RATES OF PROSTATE HEMATOMA ARTIFACT ON POST-BIOPSY PROSTATE MRI
Vidit Sharma, MD¹, Alessandro Morlacco, MD², Matteo Soligo, MD², Adam T. Froemming, MD², Robert H. McLaren, MD², Lance A. Mynderse, MD² and R. Jeffrey Karnes, MD²
¹Mayo Clinic; ²Department of Urology, Mayo Clinic
Presented By: Vidit Sharma, MD

Concurrent Sessions End

6:00 p.m. - 7:30 p.m.  President's Reception
Location: Rouge Room

SATURDAY, SEPTEMBER 08, 2018

OVERVIEW

6:30 a.m. - 8:00 a.m.  Breakfast
Location: International Foyer

6:30 a.m. - 12:00 p.m.  Registration/Information Desk Hours
Location: International Foyer

6:30 a.m. - 12:00 p.m.  Speaker Ready Room Hours
Location: Royal Room

7:30 a.m. - 11:00 a.m.  Spouse/Guest Hospitality Suite Hours
Location: Embassy Room

Concurrent Sessions Begin

Concurrent Session 1 of 3

7:00 a.m. - 8:00 a.m.  Patient Safety & Quality Improvement Initiatives Podium Session
Location: Rouge Room
Moderators: Candace F. Granberg, MD  
  Rochester, MN
  Patrick H. McKenna, MD, FAAP, FACS  
  Madison, WI
Discussant: Simone Crivellaro, MD, MHA  
  Chicago, IL

7:00 a.m.  #115  IMPROVING THE SAFETY AND EFFICIENCY OF DIRECT HOSPITAL TRANSFERS
Alice Crane, MD, PhD, Benjamin Abelson, MD, Abhinav Khanna, MD, MPH, Andrew Nguyen, MD, Daniel Sun, MD, Michelle Ponziano, RN, Edmund Sabanegh, MD, Venkatesh Krishnamurthi, MD and Howard Goldman, MD
Cleveland Clinic
Presented By: Benjamin Abelson
A CLOUD-BASED APPLICATION FOR PREVENTING RETAINED URETERAL STENTS
Christopher Tam, MD¹, Mark Newman, PhD², Michael Engelsbe, MD¹ and John Hollingsworth, MD¹
¹Michigan Medicine; ²University of Michigan School of Information
Presented By: Christopher Tam, MD

INDICATIONS FOR REOPERATION AND READMISSIONS AFTER MAJOR SURGICAL PROCEDURES IN UROLOGIC ONCOLOGY. A NATIONAL DATABASE ANALYSES
Saad Hatahet¹, Mohamed Hendawi, MD² and Ahmad Shabsigh, MD³
¹The Ohio State University, Wexner medical center; ²The Ohio State University
Presented By: Saad Hatahet, MD

CAN IMPROVED COMMUNICATION PREVENT UNNECESSARY DELAYS AND COST IN THE OPERATING ROOM?
Sara Maskal, BS¹, Donald Fedrigon, BS¹, Emily Rose, BS², Rajat Jain, MD³, Manoj Monga, MD³ and Sri Sivalingam, MD³
¹Case Western Reserve University School of Medicine; ²Cleveland Clinic Lerner College of Medicine; ³Cleveland Clinic
Presented By: Sara Maskal, BS

IMMUNONUTRITION PRIOR TO CYSTECTOMY OR COMPLEX OPEN RADICAL NEPHRECTOMY REDUCES LENGTH OF STAY, WEIGHT LOSS, AND NEED FOR TOTAL PARENTERAL NUTRITION SUPPORT
Kristina L. Penniston, PhD, RDN, FAND¹, Grace M. Maples, MS², Tracy L. Schmotzer, MS, RDN, CNSC², Kyle A. Richards, MD¹, E. Jason Abel, MD¹ and Tracy M. Downs, MD, FACS¹
¹University of Wisconsin School of Medicine and Public Health, Department of Urology; ²University of Wisconsin Hospital and Clinics
Presented By: Kristina L. Penniston, PhD, RDN, FAND

OPIOID PRESCRIBING PATTERNS, PATIENT UTILIZATION AND PATIENT SATISFACTION AFTER UROLOGIC SURGERY
Anna Zampini, MD, MBA¹, Daniel Z Sun, MD¹, Shree Agrawal, BS², Yaw Nyame, MD, MBA¹, JJ Haijing Zhang, MD¹, Sarah C. Vij, MD¹, Countenay Moore, MD¹, Howard B Goldman, MD¹ and Edmund Sabanegh, MD¹
¹Cleveland Clinic; ²Case Western Reserve School of Medicine
Presented By: Anna M. Zampini, MD, MBA

FLUOROQUINOLONE USAGE AFTER FDA BLACK BOX WARNING: DIVISION OF UROLOGY RESPONSE AND IMPACT ON UTI RATES FOLLOWING SPECIFIC UROLOGIC PROCEDURES
Austen Slade, MD and Gary Faerber, MD
University of Utah
Presented By: Gary J. Faerber, MD
7:28 a.m.  #122  THE LEARNING CURVE REQUIRED TO REACH ACCEPTABLE PROSTATE CANCER DETECTION RATE ON MAGNETIC RESONANCE IMAGING TARGETED BIOPSY OF THE PROSTATE
Grace Yaguchi, MD, Mustafa Deebajah, MD, Richard Thompson, Milan Pantelic, MD, Hakmin Park, MD, James Peabody, MD, Mani Menon, MD, Shaheen Alanee, MD and Ali Dabaja, MD
Henry Ford Health System
Presented By: Grace Yaguchi, MD

7:32 a.m.  #123  ROBOTIC INSTRUMENT FAILURE - A CRITICAL ANALYSIS OF CAUSE AND QUALITY IMPROVEMENT STRATEGIES
Alex Tapper, MD, Derek Leale, Gregory Megahan, Kimberly Nacker, RN and Jason Hafron, MD
1Beaumont Health-Royal Oak, MI Department of Urology; 2Oakland University William Beaumont School of Medicine; 3Beaumont Health-Royal Oak, MI Department of Biochemical Engineering; 4Beaumont Health-Royal Oak, MI Department of Nursing
Presented By: Alexander D. Tapper, MD

7:36 a.m.  #124  EVALUATION OF A SIMULATION MODEL FOR TRAINING AND ASSESSMENT OF URINARY CATHETERIZATION SKILLS
Colby Dixon, MD, Benjamin Marsh, MD and Kristin Chrouser, MD, MPH
1University of Minnesota; 2University of Michigan
Presented By: Colby A. Dixon, MD

7:40 a.m.  #125  OUTPATIENT INFUSION CENTER ASSOCIATED WITH REDUCED HOSPITAL READMISSIONS FOLLOWING RADICAL CYSTECTOMY
Abhinav Khanna, MD, MPH, Anna Zampini, MD, Alice Crane, MD PhD, Kyle Ericson, MD, Michele Fasceili, MD, Prithvi Murthy, MD, Byron Lee, MD, PhD and Georges-Pascal Haber, MD, PhD
Cleveland Clinic
Presented By: Abhinav Khanna, MD, MPH

7:45 a.m. - 8:00 a.m.  Q&A
Concurrent Session 2 of 3

7:00 a.m. - 8:00 a.m.  Endourology/ Stone Disease II Podium Session
Location: Gold Room
Moderators: Carley M. Davis, MD
Milwaukee, WI
Khaled Shahrour, MD
Lake Mary, FL
Discussant: James E. Lingeman, MD
Indianapolis, IN

7:00 a.m.  #126  ASSESSMENT OF HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH CYSTINURIA ON TIOPRONIN THERAPY
Frank Modersitzki, MPH, David Goldfarb, MD, Ross Goldstein, MD, MBA, Roger Sur, MD and Kristina Pennistone, PhD, RDN
1New York University School of Medicine; 2NYU Langone Health; 3Retrophin, Inc.; 4UCSD Comprehensive Kidney Stone Center; 5UW School of Medicine and Public Health
Presented By: Frank Modersitzki, MPH
THE EFFECT OF MAGNESIUM SUPPLEMENTATION ON URINARY CITRATE EXCRETION
Natasza M. Posielski, MD¹, R. Allan Jhagroo, MD², Stephen Y. Nakada, MD¹ and Kristina L. Penniston, PhD, RD¹
¹University of Wisconsin Department of Urology; ²University of Wisconsin Department of Nephrology
Presented By: Natasza Posielski, MD

CAN A PRE-URETEROSCOPY MEDICATION BUNDLE DECREASE POSTOPERATIVE PAIN AND UNPLANNED HEALTHCARE ENCOUNTERS?
Lee Baumgarten, MD, Alex Borchert, MD, Ben Eilender, MS and David Leavitt, MD
Henry Ford Hospital
Presented By: Lee C. Baumgarten, MD

REDUCING FLUOROSCOPY TIME IN PERCUTANEOUS NEPHROLITHOTOMY
Michael Sourial, MD², Andrew Todd, MD¹ and Bodo Knudsen, MD³
¹Ohio State University Dept. of Urology, Resident; ²Endourology Fellow; ³Associate Professor Urology
Presented By: Michael Sourial, MD

ASSESSING THE UTILITY OF STONE VOLUME TO PREDICT SUCCESS OF MEDICAL EXPULSIVE THERAPY IN PATIENTS PRESENTING WITH ACUTE RENAL COLIC
Sara Maskal, BS¹, Rajat Jain, MD², Leonard Kahn, MD², Jason Milk, DO² and Sri Sivalingam, MD²
¹Case Western Reserve University School of Medicine; ²Cleveland Clinic
Presented By: Sara Maskal, BS

UPFRONT URETEROSCOPY: A MISSED OPPORTUNITY
Eric Kirshenbaum, MD, Chirag Doshi, MD, Robert Blackwell, MD, Gopal Gupta, MD, Thomas Turk, MD and Kristin Baldea, MD
Loyola University Medical Center
Presented By: Chirag Doshi, MD

UROLOGIST OBTAINED SUPRACOSTAL, UPPER POLE ACCESS FOR PERCUTANEOUS NEPHROLITHOTOMY IS SAFE AND EFFECTIVE.
Joshua Altschuler, BS¹, Rajat Jain, MD², Vishnu Ganesan, MD³ and Manoj Monga, MD²
¹Case Western Reserve University School of Medicine; ²Cleveland Clinic Foundation; ³University of Texas Southwestern Medical Center
Presented By: Joshua H. Altschuler, BS

LASER PAPILLOTOMY FOR CHRONIC FLANK PAIN – A REASSESSMENT OF EFFICACY IN THE ERA OF AUTOMATED OPIOID PRESCRIPTION MONITORING
Karen Stern, MD and Manoj Monga, MD
Cleveland Clinic
Presented By: Anna E. Faris, BA
7:32 a.m.  #134  INCREASING FLUID INTAKE TO REDUCE STONE RECURRENCE RISK: IS MORE TECHNOLOGY BETTER?
Kristina L. Penniston, PhD, RDN, FAND\textsuperscript{1}, Mariana M. Coughlin\textsuperscript{1} and R. Allan Jhagroo, MD\textsuperscript{2}
\textsuperscript{1}University of Wisconsin School of Medicine and Public Health, Department of Urology; \textsuperscript{2}University of Wisconsin School of Medicine and Public Health, Department of Medicine-Division of Nephrology
Presented By: Kristina L. Penniston, PhD, RDN, FAND

7:36 a.m.  #135  COMORBIDITIES AFFECT THE HEALTH-RELATED QUALITY OF LIFE OF PATIENTS WITH UROLITHIASIS: CROSS-SECTIONAL ANALYSIS FROM THE NORTH AMERICAN STONE QUALITY OF LIFE CONSORTIUM
Kristina L. Penniston, PhD, RDN, FAND\textsuperscript{1}, Shuang Li, PhD\textsuperscript{1}, Jodi A. Antonelli, MD\textsuperscript{2}, Davis P. Viprakasit, MD, FACS\textsuperscript{3}, Timothy D. Averch, MD, FACS\textsuperscript{4}, Sri Sivalingam, MD, MSc, FRCSC\textsuperscript{5}, Thomas Chi, MD\textsuperscript{6}, Ben H. Chew, MD, MSc, FRCSC\textsuperscript{7}, Vincent G. Bird, MD\textsuperscript{8}, Vernon M. Pais, Jr., MD\textsuperscript{9}, Necole M. Streeper, MD\textsuperscript{10}, Roger L. Sur, MD\textsuperscript{11} and Stephen Y. Nakada, MD, FACS\textsuperscript{1}
\textsuperscript{1}University of Wisconsin School of Medicine and Public Health, Department of Urology; \textsuperscript{2}University of Texas Southwestern Medical Center; \textsuperscript{3}University of North Carolina School of Medicine; \textsuperscript{4}University of Pittsburgh Medical Center; \textsuperscript{5}Cleveland Clinic, Glickman Urological and Kidney Institute; \textsuperscript{6}University of California San Francisco School of Medicine; \textsuperscript{7}University of British Columbia, Vancouver; \textsuperscript{8}University of Florida College of Medicine; \textsuperscript{9}Dartmouth, Geisel School of Medicine; \textsuperscript{10}Penn State University, Milton S. Hershey Medical Center; \textsuperscript{11}University of California San Diego School of Medicine
Presented By: Kristina L. Penniston, PhD, RDN, FAND

7:40 a.m.  #136  POST-URETEROSCOPY PAIN DOES NOT CORRELATE WITH HYDRODISTENSION
Anna Faris, BA\textsuperscript{1}, Andrew Nguyen, MD\textsuperscript{2}, Vishnuvardhan Ganesan, MD\textsuperscript{2}, Anna Zampini, MD\textsuperscript{2}, Karen Stem, MD\textsuperscript{2}, Rajat Jain, MD\textsuperscript{2}, Wahib Isaac, MD\textsuperscript{2}, Mark Noble, MD\textsuperscript{2}, Srinaharan Sivalingam, MD\textsuperscript{2} and Manoj Monga, MD\textsuperscript{2}
\textsuperscript{1}Cleveland Clinic Lerner College of Medicine; \textsuperscript{2}Cleveland Clinic; \textsuperscript{3}University of Texas Southwestern
Presented By: Anna E. Faris, BA

7:45 a.m. - 8:00 a.m.  Q&A
Concurrent Session 3 of 3

7:30 a.m. - 8:00 a.m.  Trauma/ Transplant Podium Session
Location: International Ballroom
Moderators: Frank N. Burks, MD
Royal Oak, MI
Brian V. Le, MD, MA
Madison, WI
Discussant: Bradley A. Erickson, MD, MS, FACS
Iowa City, IA

7:30 a.m. #137 ROBOTIC KIDNEY TRANSPLANTATION WITH REGIONAL HYPOTHERMIA VERSUS OPEN KIDNEY TRANSPLANTATION FOR PATIENTS WITH END STAGE RENAL DISEASE: AN IDEAL PHASE 2B STUDY
Akshay Sood, MD¹, Rajesh Ahlawat, MCh², Wooju Jeong, MD³, Jacob Keeley, MS⁴, Firas Abdollah, MD⁴, Vijay Kher, MD², Mahendra Bhandari, MD⁴ and Mani Menon, MD⁴
¹Henry Ford Health System; ²Kidney and Urology Institute, Fortis Escorts, New Delhi, India; ³Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI; ⁴VCORE - Center for Outcomes Research, Analytics and Evaluation, Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI
Presented By: Akshay Sood, MD

7:34 a.m. #138 GLOBAL KIDNEY EXCHANGE: AN INTERNATIONAL APPROACH TO EXPANDING LIVING DONOR KIDNEY TRANSPLANTATION IN MINORITY GROUPS
Robert Brunner¹, Obi Ekwenna, MD¹, Susan Rees¹, Alvin Roth, PhD², Kimberly Krawiec, JD³, Siegfredo Paloyo, MD⁴, Puneet Sindhwani, MD¹ and Michael Rees, MD, PhD¹
¹University of Toledo; ²Stanford University; ³Duke University; ⁴University of the Philippines - Philippine General Hospital, Manila, Philippines
Presented By: Robert J. Brunner, BA

7:38 a.m. #139 RISK OF LONG TERM RENAL INSUFFICIENCY NOT INCREASED BY OBESITY OR AGE
Jay Sulek, MD, Isamu Tachibana, MD, Patrick Huddleston, MD and Chandru Sundaram, MD
Indiana University
Presented By: Isamu Tachibana, MD

7:42 a.m. #140 MOTORCYCLE RELATED GENITOURINARY TRAUMA
James Stinson, MS¹, Matthew Houlihan, DO², Samuel Kingsley, MD, PhD³, Matthew Fakhoury, DO², Richard Fantus, MD² and Courtney M.P. Hollowell, MD²
¹University of Illinois Chicago College of Medicine; ²Cook County Health & Hospitals System, Department of Surgery, Division of Urology; ³Advocate Illinois Masonic Hospital, Department of Surgery, Division of Trauma Acute Care Surgery
Presented By: James A. Stinson III, MS

7:45 a.m. - 8:00 a.m. Q&A

Concurrent Sessions End
8:00 a.m. - 9:00 a.m.  
**Roundtable Discussion: Future of Urology**
Moderator:  Gary J. Faerber, MD  
*Durham, NC*
Panelists:  
- Robert C. Flanigan, MD, FACS  
  *Maywood, IL*  
- Patrick H. McKenna, MD, FAAP, FACS  
  *Madison, WI*  
- Kyle A. Richards, MD, FACS  
  *Madison, WI*  
- Daniel A. Shoskes, MD  
  *Cleveland, OH*  
- Elizabeth B. Takacs, MD  
  *Iowa City, IA*

9:00 a.m. - 9:45 a.m.  
**Bizarre and Interesting Cases Podium Session**
Moderators:  
- Edward E. Cherullo, MD  
  *Chicago, IL*  
- Nick Tadros, MD, MCR  
  *Springfield, IL*

9:00 a.m.  
**#141**  
**A CASE OF BILATERAL UNDESCENDED BILOBED TESTES**
Hannah Agard, MD¹, Neel Parekh, MD¹ and Curtis Clark, MD²  
¹Cleveland Clinic Akron General Urology Residency Program;  
²Pediatric Adolescent Urology, Inc./Akron Children’s Hospital  
Presented By: Hannah E. Agard, MD

9:03 a.m.  
**#142**  
**RETROGRADE URETEROSCOPY IN MANAGEMENT OF DISTAL URETERAL CALCULUS IN A PATIENT WITH URETEROSIGMOIDOSTOMY DIVERSION**
Adam De Fazio, MD, JD and Michael Borofsky, MD  
University of Minnesota Department of Urology  
Presented By: Adam M. De Fazio, MD, JD

9:06 a.m.  
**#143**  
**SIGMOID VAGINOPLASTY FOR FORMATION OF NEOINTROITUS IN A PATIENT WITH PARTIAL ANDROGEN INSensitivity SYNDROME**
Paurush Babbar, MD, Andrew Sun, MD, Yaw Nyame, MD, Maxx Caveney, MD, Rebecca Campbell, MD, Jeffrey Donohoe, MD and Audrey Rhee, MD  
Cleveland Clinic  
Presented By: Paurush Babbar, MD

9:09 a.m.  
**#144**  
**PRESENTATION OF URETHRAL DUPLICATION IN 88 YEAR OLD FEMALE**
Philip Wong, MD, PhD and Humphrey Atiemo, MD  
Henry Ford Hospital  
Presented By: Philip Wong, MD

9:12 a.m.  
**#145**  
**KIDNEY MYSTERY WITH A SALIVARY HISTORY- A CASE REPORT OF METASTATIC SALIVARY GLAND TUMOR**
Kristen Meier, MD and Howard Korman, MD  
Beaumont Health  
Presented By: Kristen M. Meier, MD

9:15 a.m.  
**#146**  
**THE UNCOMMON CASE OF A CORPORAL CUTANEOUS FISTULA**
M. Francesca Monn, MD, MPH and Matthew J. Mellon, MD  
Indiana University School of Medicine Department of Urology  
Presented By: M. Francesca Monn, MD, MPH
9:18 a.m. #147 LIFE-THREATENING BILATERAL RENAL MUCORMYCOSIS PRESENTING AS URINARY "SEA MONSTERS": FIRST REPORTED SURVIVAL WITH CONSERVATIVE MANAGEMENT
Benjamin Marsh, MD, Radha Rajasingham, MD, Sherif Tawfic, MD, PhD and Michael Borofsky, MD
University of Minnesota
Presented By: Benjamin M. Marsh, MD

9:21 a.m. #148 PRIMARY TESTICULAR ANGIOSARCOMA WITH RETROPERITONEAL METASTASIS. A RARE PRESENTATION
Joshua Piotrowski, Meghan Schaefer, MD and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Joshua T. Piotrowski, MD, PhD

9:24 a.m. #149 AN UNUSUAL PRESENTATION OF RECURRENT PROSTATE CANCER: OBSTRUCTING RECTAL MASS ELEVEN YEARS AFTER RADICAL PROSTATECTOMY
Engy Habashy, MD, Jagan Kansal, MD, MBA, Robert Bruce Bracken, MD and Abhinav Sidana, MD
University of Cincinnati Medical Center
Presented By: Engy Habashy, MD

9:27 a.m. #150 MISSED VAGINAL PESSARY CREATES A GENITOURINARY DISASTER
Ahmed El-Zawahry, MD and Ayman Mahdy, MD, PhD
1Southern Illinois University; 2University of Cincinnati
Presented By: Ahmed M. El-Zawahry, MD, MSC

9:30 a.m. #151 PENILE PARAFFINOMA: A DISFIGURING CONSEQUENCE OF MINERAL OIL INJECTION
M. Ryan Farrell, MD, MPH, Peter Tsambarlis, MD and Laurence Levine, MD
Rush University Medical Center
Presented By: M. Ryan Farrell, MD, MPH

9:33 a.m. #152 URINARY DIVERSION IN A CASE WITH MALROTATED BOWEL AND SOLITARY ECTOPIC PELVIC KIDNEY
Jennifer Henderson, MSN and Ayman Mahdy, MD, PhD
University of Cincinnati
Presented By: Jennifer Henderson, MSN, APRN, FNP-BC

9:45 a.m. - 10:00 a.m. Break
Location: International Foyer
Concurrent Sessions Begin

Concurrent Session 1 of 2

10:00 a.m. - 10:45 a.m.  Urinary Incontinence/Neurourology Podium Session
Location: International Ballroom
Moderators: Humphrey O. Atiemo, MD
Detroit, MI
Paholo G. Barboglio Romo, MD, MPH
Ann Arbor, MI
Discussant: Sarah E. McAchran, MD, FACS
Madison, WI

10:00 a.m. #153  ARTIFICIAL URINARY SPHINCTER REVISION WITH QUICK CONNECTS® VERSUS SUTURE–TIE CONNECTORS: DOES TECHNIQUE MAKE A DIFFERENCE?
Jack Andrews, MD, Brian Linder, MD, Joseph Scales, MD and Daniel Elliott, MD
Mayo Clinic
Presented By: Jack Andrews, MD

10:04 a.m. #154  ANTERIOR VAGINAL WALL SUSPENSION AS ALTERNATIVE TO MESH BASED REPAIR AND CAN BE REPLICATED OUTSIDE OF ORIGINATING INSTITUTION
Gabrielle McNary, BS and C.R. Powell, MD
Indiana University School of Medicine
Presented By: Charles R. Powell II, MD

10:08 a.m. #155  WITHDRAWN

10:12 a.m. #156  EFFECTIVENESS OF INTRADETRUSOR ONABOTULINUM TOXIN A INJECTIONS IN MANAGING OVERACTIVE BLADDER AFTER INITIAL SACRAL NEUROMODULATION THERAPY
Hamilton Trinh, BS¹, Vicki Irish, CNP², Mierya Diaz-Insua, PhD² and Humphrey Atiemo, MD²
¹Wayne State University School of Medicine; ²Vattikuti Urology Institute, Henry Ford Hospital
Presented By: Hamilton Trinh, BS

10:16 a.m. #157  USE OF FLEXIBLE CYSTOSCOPY AT TIME OF ARTIFICIAL URINARY SPHINCTER PLACEMENT
M. Francesca Monn, MD, MPH, Brian M Orr, MD and Matthew J Mellon, MD
Indiana University School of Medicine Department of Urology
Presented By: M. Francesca Monn, MD, MPH

10:20 a.m. #158  RISK FACTORS FOR RECURRENT INCONTINENCE/URETHRAL ATROPHY FOLLOWING ARTIFICIAL URINARY SPHINCTER PLACEMENT
Bryan Naelitz, BA, Bradley Gill, MD, MS, Hadley Wood, MD, Drgo Montague, MD and Kenneth Angermeier, MD
Cleveland Clinic Glickman Urology and Kidney Institute
Presented By: Bryan D. Naelitz, BA
ONABOTULINUM TOXIN INJECTION TO TREAT DESD IN PATIENTS WITH CEREBRAL PALSY
Wade Bushman, MD, PhD and Ruthie Su, MD, MS
University of Wisconsin School of Medicine and Public Health
Presented By: Ruthie R. Su, MD

EFFECTIVENESS OF TWO VALIDATED QUESTIONNAIRES TO REMOTELY ASSESS OUTCOMES OF ANTERIOR VAGINAL WALL SUSPENSION WITHOUT CLINIC VISIT
Gabrielle McNary, BS¹ and C.R. Powell, MD²
¹Indiana University; ²Indiana University School of Medicine Dept. of Urology
Presented By: Gabrielle McNary, BS

Q&A
Concurrent Session 2 of 2

PROSTATE BENIGN/ MALIGNANT PODIUM SESSION
Location: Gold Room
Moderators: Fara Bellows, MD
Columbus, OH
Jeffrey Branch, MD
Maywood, IL
Discussant: Kevin T. McVary, MD, FACS
Springfield, IL

CONVECTIVE WATER VAPOR THERMAL THERAPY: 3-YEAR DURABLE OUTCOMES OF A RANDOMIZED CONTROLLED STUDY FOR TREATMENT OF LOWER URINARY TRACT SYMPTOMS DUE TO BENIGN PROSTATIC HYPERPLASIA
Joseph Mahon, MD¹, Claus Roehrborn, MD² and Kevin McVary, MD¹
¹SIU; ²Texas Southwestern
Presented By: Kevin T. McVary, MD, FACS

MAYO CLINIC PILOT EXPERIENCE WITH REZŪM PROSTATE ABLATION
David Yang, MD, Ross Avant, MD, Ajay Gopalakrishna, MD, Sevann Helo, MD, Manaf Alom, MBBS and Tobias Kohler, MD Mayo Clinic, Department of Urology
Presented By: Ajay Gopalakrishna, BS, BA

PREDICTORS OF RESPONSE TO THE PROSTATIC URETHRAL LIFT (PUL) PROCEDURE
Steven Gange, MD, Claus Roehrborn, MD, Daniel Rukstalis, MD, Kevin McVary, MD and Steven Kaplan, MD
Western Urological Clinic
Presented By: Steven N. Gange, MD, FACS

THE UTILITY OF A TEMPORARY PROSTATIC URETHRAL STENT IN THE MANAGEMENT OF BPH WITH URINARY RETENTION
Craig Smith, MD
DuPage Medical Group
Presented By: Craig A. Smith, MD
10:16 a.m.  #165  COMPARISON OF CONVECTIVE WATER VAPOR THERMAL THERAPY OF PROSTATE (REZUM®) TO MTOPS STUDY COHORT SEXUAL FUNCTION RESPONSE AT 3 YEARS
Joseph Mahon, MD¹, Nikhil Gupta, MD² and Kevin McVary, MD¹
¹SIU; ²Rutgers
Presented By: Kevin T. McVary, MD, FACS

10:20 a.m.  #166  VOIED VOLUMES PREDICT DEGREE OF PARTIAL BLADDER OUTLET OBSTRUCTION IN A MURINE MODEL
Nicholas Tassone, BS, Megan Devine, BS, Belinda Li, MD, Michael White, BA, Paula Firmess, BS, Robert Dettman, PhD and Edward Gong, MD
Ann Robert H. Lurie Children’s Hospital of Chicago
Presented By: Nicholas Tassone

10:24 a.m.  #167  SACRAL NEUROMODULATION IN MEN: DOES PRIOR TRANSURETHRAL PROSTATE SURGERY MATTER?
Bradley Gill, MD, MS, James Ulchaker, MD, Howard Goldman, MD, Courtenay Moore, MD, Sandip Vasavada, MD and Raymond Rackley, MD
Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS

10:28 a.m.  #168  CHANGES IN PROSTATE HEALTH INDEX (PHI) VALUES AS A PREDICTOR OF CLINICALLY SIGNIFICANT PROSTATE CANCER
Richard Fantus, MD¹, Joshua Aizen, MD¹, Jianfeng Xu, MD, PhD², Chi Wand, PhD², Brian Helfand, MD, PhD² and Brittany Adamic, MD¹
¹University of Chicago; ²NorthShore University
Presented By: Brittany Adamic, MD

10:32 a.m. - 10:45 a.m.  Q&A

Concurrent Sessions End

10:45 a.m. - 11:45 a.m.  NCS Resident Bowl Finals
Moderator:  Bradley F. Schwartz, DO, FACS
Springfield, IL
Judges:  Gary J. Faerber, MD
Durham, NC
Badrinath R. Konety, MD, MBA
Minneapolis, MN
Dinesh J. Telang, MD
Roseville, MI

11:45 a.m. - 11:50 a.m.  Best Poster, Best Video, and Bizarre & Interesting Case Award Presentations
Presenter:  Bradley F. Schwartz, DO, FACS
Springfield, IL

11:50 a.m. - 12:00 p.m.  Incoming NCS President Remarks
President-Elect:  David F. Jarrard, MD
Madison, WI
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POSIELSKI, NATASZA
9/6/2018 2:08 p.m.  AB #26
9/6/2018 7:14 a.m.  AB #12
9/8/2018 7:04 a.m.  AB #127

POWELL, CHARLES
9/7/2018 10:00 a.m.
9/8/2018 10:04 a.m.  AB #154

PREMINGER, GLENN
9/6/2018 3:00 p.m.

QUEK, MARCUS
9/7/2018 4:30 p.m.

RAJA, NICHOLAS
9/6/2018 2:28 p.m.  AB #20

RAMBHATLA, AMARNATH
9/7/2018 6:30 a.m.

RICHARDS, KYLE
9/5/2018 1:30 p.m.
9/6/2018 4:30 p.m.
9/7/2018 10:00 a.m.
9/8/2018 8:00 a.m.

RIVERA, MARCELINO
9/6/2018 2:00 p.m.

ROSENBERG, JOEL
9/6/2018 6:30 a.m.  Video #8

ROTH, JOSHUA
9/6/2018 2:40 p.m.  AB #23
9/6/2018 4:30 p.m.  Poster #10

RUSSELL, CHRISTOPHER
9/7/2018 10:45 a.m.  AB #79

RYDBERG, MICHAEL
9/7/2018 4:30 p.m.  Poster #50

SANDLOW, JAY
9/7/2018 8:45 a.m.

SARLE, RICHARD
9/7/2018 10:45 a.m.

SATHIANATHEN, NIRANJAN
9/6/2018 4:30 p.m.  AB #46

SCHEIDER, JONATHAN
9/6/2018 7:02 a.m.  AB #9

SCHEIDER, AMY
9/6/2018 7:02 a.m.  AB #9

SCHWARTZ, BRADLEY
9/7/2018 10:00 a.m.
9/8/2018 10:45 a.m.
9/8/2018 11:45 a.m.

SCHWARTZ, BRADLEY
9/7/2018 10:00 a.m.
9/8/2018 10:45 a.m.
9/8/2018 11:45 a.m.

SETIA, SHAAN
9/7/2018 6:54 a.m.  AB #75

SHAH, PARTH
9/6/2018 2:12 p.m.  AB #38

SHAHROUZ, KHALED
9/8/2018 7:00 a.m.

SHALHAY, ARIEH
9/5/2018 8:00 a.m.

SHANON, RACHEL
9/6/2018 4:30 p.m.  Poster #13
9/6/2018 6:30 a.m.  Video #1

SHAPIRO, DANIEL
9/7/2018 10:45 a.m.  Poster #28
9/7/2018 10:45 a.m.  Poster #33

SHARMA, VIDIT
9/6/2018 5:06 p.m.  AB #55
9/7/2018 4:30 p.m.  Poster #55

SHERWOOD, BRENTON
9/6/2018 6:34 a.m.  AB #2

SHOSKES, DANIEL
9/8/2018 8:00 a.m.

SLOAN, MATTHEW
9/6/2018 4:30 p.m.  Poster #23

SMITH, CRAIG
9/8/2018 10:12 a.m.  AB #164

SOOD, AKSHAY
9/6/2018 2:28 p.m.  AB #31
9/6/2018 4:30 p.m.  Poster #12
9/8/2018 7:30 a.m.  AB #137

SOURILAL, MICHAEL
9/8/2018 7:12 a.m.  AB #129

STEINBERG, GARY
9/7/2018 4:30 p.m.

STEINHARDT, GEORGE
9/6/2018 2:00 p.m.
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ZAMPINI, ANNA
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9/8/2018  7:20 a.m.  AB #120

ZIEGELMANN, MATTHEW
9/5/2018  4:00 p.m.

ZUK, KEEGAN
9/7/2018  4:58 p.m.  AB #101
Podium #1
COMPARISON OF THE SAFETY AND EFFICACY OF URETEROSCOPY WITH OR WITHOUT ANESTHESIA FOR UPPER TRACT UROTHELIAL CARCINOMA
Saad Hatahet¹, Mohamed Hendawi, MD², David Sharp, MD², Geoffrey Box, MD² and Ahmad Shabsigh, MD²
¹The Ohio State University, Wexner Medical Center; ²The Ohio State University
Presented By: Saad Hatahet, MD

Introduction: Accurate diagnosis and surveillance of upper urinary tract urothelial carcinoma (UTUC) is challenging. We compare the safety and oncologic efficacy of office based anesthesia-less ureteroscopy (OALU) to the standard operative room ureteroscopy under general anesthesia (ORU).

Methods: The records of patients who underwent ureteroscopy for UTUC between April 2011 and Dec 2015 were retrospectively reviewed. Patients’ tolerance, post-operative complications, recurrence rate, time to detect recurrence, and progression to nephroureterectomy were compared between patients who underwent the procedure under local vs general anesthesia.

Results: A total of 101 patients underwent 278 ureteroscopies for UTUC. OALU was performed 173 times (62.2%). Of these 142 (82.1%) were done for cancer surveillance on 43 patients. OALU was done in 90 (63%) and ORU in 52 (36%). All but two (1.9%) OALU were well tolerated. Both were aborted due to pain. There was no significant difference in postoperative morbidity between the two groups (0.2%, 0.7%, Chi² = 3.278, P=0.07). Most (84%) of these were grades 1-2. The mean numbers of surveillance procedures per patient were 4.2±3.5 for OALU group vs 1.77±0.8 for ORU group. Recurrence rates in patient who underwent surveillance ureteroscopy under local and general anesthesia were 38.1% vs 40.9% (Chi²=0.036, P=0.850) respectively. Disease progression or recurrence requiring nephroureterectomy occurred in 23.8% vs 22.7% of patients (Chi²=0.007, P=0.933) in the OALU and ORU respectively.

Conclusion: Office surveillance ureteroscopy under local anesthesia for UTUC is a safe and effective procedure. Patients tolerated the procedure well with comparable postoperative outcomes to the general anesthesia. There was no increased risk of progression. Office based anesthesia-less ureteroscopy could be an option for UTUC surveillance.

Podium #2
LONG-TERM OUTCOMES AFTER TOPICAL TREATMENT FOR UPPER TRACT UROTHELIAL CARCINOMA
Jeremy West, MD, Kenneth Nepple, MD, Brenton Sherwood, MD, Anthony Oberle, MD, Sara Mott, MS and Michael O'Donnell, MD
University of Iowa Department of Urology
Presented By: Brenton G. Sherwood, MD

Introduction: Topical treatment may be an appropriate alternative to nephroureterectomy (NU) for patients with upper tract urothelial carcinoma (UTUC) who are not surgical candidates or prefer renal preservation.

Methods: Select patients received 6 weekly induction treatments to the upper tracts. Most treatments were via ureteral catheter placed in urology clinic under fluoroscopy. Agents used included BCG/interferon, gemcitabine, docetaxel, adriamycin, or mitomycin. After induction, patients were restaged with cystoscopy and cytology from the bladder and upper tracts. Recurrence-free survival was calculated from time of treatment to recurrence.

Results: Seventy-six patients (98 renal units) were treated. Indications included abnormal upper tract cytology/biopsy (n=59) or adjunct treatment following endoscopic resection (n=17). Disease was low-grade in 12 and high-grade in 64. At median follow-up of 40 months, 41 patients (54%) had upper tract recurrence (low-grade=33%, high-grade=58%) (Figure 1). Of these, 14 (18%) ultimately underwent NU, 9 (12%) were not surgical candidates or refused NU, 38 (50%) developed urothelial carcinoma in the bladder, and 8...
(11%) developed metastatic disease. At median follow-up of 94 months, 26 patients (34%) died with 15 (20%) attributable to urothelial cancer.

**Conclusion:** To our knowledge, this is the largest cohort of topical treatments for UTUC. Topical treatment may be an appropriate alternative to NU in select patients when renal preservation is necessary or patients are willing to accept the risk of recurrence and/or progression.

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**Podium #3**

**CELL CYCLE PROGRESSION SCORE AS A PREDICTOR FOR METASTATIC PROGRESSION AFTER RESECTION OF STAGE 1 CLEAR CELL RENAL CELL CARCINOMA**

Jeremy West, MD¹, Vincent Cheval, DO¹, Sarah Mott, MS² and James Brown¹

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Presented By: Jeremy M. West, MD

**Introduction:** There is an ongoing effort to identify a biomarker which predicts metastatic progression of clear cell renal cell carcinoma (ccRCC). Expression levels of cell cycle progression (CCP) genes have been found to be associated with progression in several different cancers including ccRCC. We evaluated the utility of CCP score in metastasis free survival in ccRCC after local resection of Stage 1 (T1N0M0) disease.

**Methods:** Pathologic T1 tumors resected at the University of Iowa between 1995 and 2010 were reviewed. Patients with known or suspected metastasis, received neoadjuvant or adjuvant chemotherapy, or developed metastasis within 60 days of surgery were excluded. Measured levels of 31 cell cycle genes and 15 control genes from the tumor were calculated as a CCP score. A Cox regression model was used to assess the association between CCP score and metastasis free survival, time to metastasis, or death due to any cause.

**Results:** 327 patients were included in the analysis. After a median follow up of 61 months (IQR: 17.6-98.3), 15 patients developed metastasis and 99 died. The mean score for patient developing and not developing metastatic disease was 0.4 and -0.1, respectively. Each one unit increase in CCP Score increased the risk of metastatic progression by 1.49 times (HR 1.49, 95%CI 1.1-1.9, p<0.01).

**Conclusion:** The CCP score has prognostic value in predicting metastasis free survival after resection of stage 1 ccRCC. CCP score may have the potential to be a useful biomarker for select patients considering active surveillance with clinical T1 tumors.
Podium #4
PERCUTANEOUS BIOPSY FOR UPPER TRACT UROTHELIAL CARCINOMA - SAFETY AND DIAGNOSTIC ACCURACY
Jason Joseph, MD1, Amir Toussi, MD1, Theodora Potretzke, MD2, Tanner Miest, MD, PhD1, Thomas Atwell, MD2, Bradley Leibovich, MD1, Matthew Tollefson, MD1 and Aaron Potretzke, MD1
1Department of Urology, Mayo Clinic; 2Department of Radiology, Mayo Clinic
Presented By: Jason P. Joseph, MD

Introduction: Short of surgical extirpation, ureteropyeloscopy with endoscopic biopsy remains the standard for establishing a histologic diagnosis of upper tract urothelial carcinoma (UTUC). Endoscopic biopsy is safe and affords visualization; however, it is not always feasible, and its diagnostic accuracy is debated. We report our experience with percutaneous image-guided core-needle biopsy (CNB) for UTUC to better understand safety and diagnostic accuracy.

Methods: We retrospectively reviewed 444 patients undergoing radical nephroureterectomy (RNU) for UTUC at Mayo Clinic between 2009 and 2017. Forty-two patients undergoing CNB prior to RNU were identified. Clinical notes, imaging, and pathology reports were reviewed. Major complications were those grade 3 or higher according to the Common Terminology Criteria for Adverse Events.

Results: Median age at biopsy was 72.8 years (37.8-91.5). All lesions were intrarenal. Median tumor size was 3.2 cm (1.2-8.3). CT-guidance was utilized in 52.4% (n=22), ultrasound-guidance in 47.5% (n=20). Relative to RNU pathology, rate of histologic diagnosis by CNB was 95.2% (n=40). When CNB provided histologic grade (n=29, 69%), rate of concordance with surgical pathology was 86.2% (n=25). Minor and major complication rates were 14.3% (n=6) and 2.4% (n=1) respectively. At a median biopsy-to-interval imaging time of 26.2 months (1.2-76.5), no cases of CNB tract seeding were identified.

Conclusion: In our cohort undergoing RNU for UTUC, CNB was a safe and effective diagnostic tool. To our knowledge, this represents the largest reported experience with CNB for diagnosis of UTUC. Additional studies are underway to compare the diagnostic accuracy of CNB to that of endoscopic biopsy.

Podium #5
MULTIFOCAL RENAL TUMORS: EVALUATING PREDICTORS OF MULTIFOCALITY AND CONCORDANCE WITHIN THE KIDNEY
Chandra K. Flack, MD, Ting Wei, MS, Adam C. Calaway, MD, K. Clint Cary, MD, MPH and Ronald S. Boris, MD
Indiana University School of Medicine
Presented By: Chandra K. Flack, MD

Introduction: Our objective was to assess characteristics of multifocal disease as well as size, grade, and histologic concordance among tumors in a single renal unit.

Methods: We reviewed all nephrectomies between 2005-2017, including with non-hereditary multifocal renal masses in a single renal unit. Concordance was defined as all tumors having the same subtype, grade (low or high), or stage. Renal units were categorized based on the histology of the stage-defining tumor.

Results: 1501 surgeries were performed, of those, 63 patients underwent surgery for multifocal renal masses (prevalence 4.5%). Multifocal histology demonstrated: 31 clear-cell (44.9%), 30 papillary (43.5%), 4 chromophobe (5.8%) 2 angiomylipoma (2.9%), 9 oncocytoma (11.6%), 5 unclassified (7.3%). Median tumor number per kidney was 2. Patients with multifocal disease showed higher percent male gender (54/69, 78.3%), papillary histology (43.5%), and African American race (16/69, 23.2%) when compared to our overall RCC cohort. Fifty-five kidneys (79.7%) exhibited histologic concordance, 58 (84.1%) grade concordance, and 52 (75.4%) overall concordance.

Conclusion: Male gender, African American race, and papillary subtype were common features of multifocal disease. Tumors overall exhibited high histologic and grade concordance but specific patterns of concordance between subtype were not observed.
Tumors within a single multifocal kidney appear to have similar biologic activity compared with the stage-defining tumor.

Podium #6
CHARACTERIZATION OF ONCOLYTIC MEASLES VIRUS IN PATIENT-DERIVED RENAL CELL CARCINOMA XENOGRAFTS GROWN ON CHICKEN CHORIOALLANTOIC MEMBRANES AS A MODEL FOR EARLY METASTATIC DISEASE
Tanner Miest, MD, PhD1, Ianko Iankov, PhD2, Yaroslav Fedyslyn1, Pierce Reynolds2, Matthew Lowerison, PhD1, Jeffrey Karnes, MD1, Stephen Boorjian, MD1, Houston Thompson, MD1, Matthew Tollefson, MD1, Igor Frank, MD1, Eva Galanis, MD2 and Bradley Leibovich, MD1
1Mayo Clinic, Department of Urology; 2Mayo Clinic, Department of Molecular Medicine
Presented By: Tanner Miest, MD, PhD

Introduction: Oncolytic virotherapy harnesses replicating viruses for lytic destruction of tumor cells and stimulation of anti-tumor immune responses. Here we evaluated infectivity and cell killing of oncolytic measles virus (MV) in patient-derived xenografts from renal cell carcinoma (RCC) grown on chicken embryo chorioallantoic membranes (CAM-PDX) as a model of early metastatic disease.

Methods: Tumor fragments were obtained at the time of radical nephrectomy and implanted on chicken embryo chorioallantoic membranes. Tumors were treated with vaccine-strain MV expressing the green fluorescent protein (MV-GFP) either prior to embryo implantation or with intravenous or intratumoral injections. Infection was monitored using fluorescent stereoscopy. Volumetric Doppler US quantified xenograft volume and vascularity, and confocal microscopy confirmed virus distribution and tumor viability.

Results: MV-GFP achieved robust infection of primary RCC tumors including sarcomatoid RCC and oncocytoma. Virus spread was visualized for up to 96 hours after treatment. Volumetric Doppler ultrasound correlated MV infection with decreased xenograft vascularity. Immunohistochemistry and confocal microscopy correlated virus replication with regions of viable tumor.

Conclusion: Our data highlight the potential of oncolytic MV as an experimental therapy for RCC. The CAM-PDX model allows for rapid analysis of disease response in individual patient tumors, making in vivo-directed, individualized treatment approaches a viable option for future oncolytic virotherapy trials.
Podium #7
FREQUENCY AND PREDICTORS OF RENAL TRANSPLANTATION AMONG PATIENTS RENDERED SURGICALLY ANEPHRIC FOR SPORADIC RENAL CANCER
Timothy Boswell, MD1, Vidit Sharma, MD1, Mary Westerman, MD1, Patrick Dean, MD2, George Chow, MD1, Robert Thompson, MD1, Bradley Leibovich, MD1 and Stephen Boorjian, MD1
1Department of Urology, Mayo Clinic, Rochester, MN; 2Department of Surgery, Division of Transplantation Surgery, Mayo Clinic, Rochester, MN
Presented By: Timothy C. Boswell, MD

Introduction: Patients rendered surgically anephric during treatment of renal cancers are often counseled regarding the possibility of renal transplantation. However, the frequency of such patients undergoing subsequent renal transplantation and the clinicopathologic factors associated with receipt of transplantation remain to be defined.

Methods: A retrospective review was conducted to identify patients rendered surgically anephric between 2001-2016 due to cancer in both renal units or cancer in an anatomically or functionally solitary kidney. Patient demographics, comorbidities, and cancer features were compared between patients who subsequently received a renal transplantation and those who did not. Time-to-event analysis was used to compare time to transplantation across varied identified parameters.

Results: Among 27 patients rendered anephric, 4 (15%) received a renal transplantation over a median follow up of 21.6 months (IQR 7.2, 53.3). All transplanted patients were less than 70 years of age and had cT1a renal parenchymal mass at the time of nephrectomy. No patient undergoing completion nephrectomy for upper tract urothelial carcinoma received transplantation. Patients who were evaluated by the transplant service prior to nephrectomy were more likely to eventually undergo transplantation (60% versus 5%; p<0.01). On time-to-event analyses, a cT1a renal parenchymal mass (p<0.01) and a pre-nephrectomy transplant evaluation (p<0.01) were associated with receipt of a transplant.

Conclusion: Patients rendered anephric via nephrectomy for cancer are more likely to receive renal transplantation if they are less than 70 years old, have a cT1a renal parenchymal mass, and receive transplant consultation before nephrectomy. These data may inform future patient counseling.
Podium #8

SALVAGE AND PALLIATIVE RADIATION IN OLIGOMETASTATIC RENAL CELL CARCINOMA: A DESCRIPTIVE COHORT ANALYSIS

Ross Avant, MD, Mary Westerman, MD and Aaron M. Potretzke, MD
Mayo Clinic

Presented By: Mary E. Westerman, MD

Introduction: In renal cell carcinoma (RCC), radiation therapy (RT) has been described as an adjunctive intraoperative therapy to provide maximal margin control during resection as well as a primary therapy for local disease control for patients with metastatic spinal lesions. To our knowledge however, the role of RT in controlling oligometastatic RCC (oRCC) with or without adjunctive therapy has not been previously described.

Methods: 3,865 patients treated with radical or partial nephrectomy for unilateral, sporadic RCC between 1970 and 2010 of whom 334 (8.6%) patients had oRCC either synchronous (41%) or metachronous (59%). Descriptive statistics were performed.

Results: Of 334 patients with oRCC, 84 (25%) patients received RT for a solitary metastatic lesion of which 41 (49%) were synchronous and 43 (51%) were metachronous. Following surgery, mean time to lesion development was 42.8 months. Bone lesions (70%) were most common, followed by brain (16%) and lung (4.6%). 16 (37%) were treated with a combination of surgery and XRT and 49% required systemic therapy. Following diagnosis of oRCC, 65% developed additional metastatic disease at a mean of 11 months. With follow up of 25.4 months, 35 (81%) patients died, including 83% who died from RCC. Eight (18.6%) were still alive at a mean of 35 months, however only 3 (7%) were free of disease. 2 of the 3 had undergone concurrent surgery.

Conclusion: Use of radiotherapy in treatment of metachronous oRCC is uncommon and rarely curative. Most patients develop additional sites of metastatic disease requiring subsequent systemic therapy.

Podium #9

PROGNOSTIC SIGNIFICANCE OF SARCOMATOID FACTORS IN RENAL CELL CARCINOMA IN THE SETTINGS OF LOCALIZED AND METASTATIC DISEASE.

Jonathan Schmidt, BS, Jay Sulek, MD, Liang Cheng, MD and Chandru Sundaram, MD, FACS, FRCS
Indiana University School of Medicine

Presented By: Jonathan P. Schmidt, BS

Introduction: Sarcomatoid features in renal cell carcinoma (sRCC) are associated with higher grade, stage, and poor response to immunotherapy. However, it is unclear whether sarcomatoid features represent an independent risk factor in local and metastatic disease. Our retrospective analysis attempts to better elucidate the prognostic significance of sarcomatoid features.

Methods: Data was collected using REDCap electronic data capture tools hosted at Indiana University. Cases of sRCC were collected in addition to matched controls between 3/11/1999 and 1/25/2018. Information regarding tumor characteristics, follow up, recurrences, local and systemic treatment, and disease-specific and overall mortality was extracted. IBM SPSS Version 24.0 was used for data analysis.

Results: A cohort of patients with localized sRCC demonstrated no difference in time to recurrence (1884.6 days; p=0.942), disease-specific survival (2233.4 days; p=0.551), or overall survival (1762.5 days; p=0.234) against a matched cohort. In metastatic sRCC, any sarcomatoid component resulted in significantly decreased overall survival compared to a matched cohort (median 218 vs. 600 days; p=0.034). Moreover, >20% sarcomatoid features was associated with a dismal prognosis (96 vs. 438 days; p<0.001, HR 4.47; p<0.001). A subgroup of 33 patients receiving chemotherapy trended towards decreased overall survival in patients with sarcomatoid features present (median survival 170.6 vs. 354.0 days; p=0.163).

Conclusion: In the setting of localized disease, relatively poor prognosis for patients with sRCC appears to be related to association with higher stage. However, our results suggest that sarcomatoid features represent an independent risk factor in metastatic RCC.
Podium #10
DISTRIBUTION OF M0 RENAL CELL CARCINOMA METASTASES STRATIFIED BY PATHOLOGIC NODAL STATUS
David Yang, MD¹, Theodora Potretzke, MD², Ajay Gopalakrishna, MD¹, Christine Lohse, MS³, John Cheville, MD¹, Bernard King, MD², Bradley Leibovich, MD¹, R Houston Thompson, MD¹ and Aaron Potretzke, MD¹
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Presented By: Ajay Gopalakrishna, BS, BA

Introduction: Patients with N1M0 renal cell carcinoma (RCC) treated surgically have worse prognosis than N0M0 patients. Our objective was to evaluate the timing and anatomic distribution of first metastasis in patients treated surgically for RCC stratified by nodal status.

Methods: Between 1970 and 2011, 1,049 M0 RCC patients (median age 62, 725M/324F) who subsequently developed distant metastasis to 3 or fewer sites were identified. Association of nodal status with time to metastasis was evaluated using Cox proportional hazards regression models. Site-specific metastases-free survival was estimated using the Kaplan-Meier method.

Results: Time to the first distant metastasis for N1 (n=135) and N0/x (n=914) patients was 0.4 years [IQR 0.2-1.1] and 2.2 years [IQR 0.6-6.0] respectively. The most common site of metastasis for both groups was lung but occurred earlier in N1 patients (0.3 vs 2.0 years) (p<0.001). N1 was associated with significantly lower site-specific 2-year metastases-free rates when compared to N0/x for lung, bone, non-regional lymph nodes, and liver metastases (Table).

Conclusion: N1 nodal status in M0 patients treated surgically for sporadic unilateral RCC is associated with more frequent early metastasis to sites conferring poor prognosis, including bone and liver. Patients with N1 disease should be counseled regarding this risk and close surveillance of these sites may be warranted.

Podium #11
SURVIVAL AND CHARACTERISTICS OF PATIENTS WITH UNCLASSIFIED RENAL CELL CARCINOMA
Jay Sulek, MD, Naveen Krishnan, MD, Caleb Cooper, BS, Liang Cheng, MD and Chandru Sundaram, MD
Indiana University
Presented By: Naveen Krishnan

Introduction: Unclassified renal cell carcinoma (URCC) is a relatively rare subtype comprising 0.7-5.7% of kidney cancers. Retrospective studies have been limited by relatively few patients and have had mixed conclusions about prognostic ramifications of
this diagnosis. We present a retrospective analysis of patients with URCC at our institution compared to a stage-matched control group.

**Methods:** After institutional IRB approval, study data were collected and managed using REDCap electronic data capture tools hosted at Indiana University. Our institutional renal database was used to collect cases from August 2001-July 2017 with pathological diagnosis RCC and histological subtype unclassified as well as a stage-matched group of patients with clear cell RCC. Clinical and demographic information were obtained through hospital, supplemental state, and obituary records. Rate of recurrence, overall and disease-specific survival were compared.

**Results:** 119 patients with URCC were identified between August 2001 and July 2017 (5.32% of RCC cases). Median age was 63. 9.48% had evidence of metastasis at time of surgery. Median length of follow-up was 20 months. Local recurrence was seen in 4 cases (2.52%). Overall mortality was 35.34% and disease-specific mortality 16.38%. Kaplan-Meier survival analysis showed no significant difference between the stage-matched URCC and CRCC cohorts in either overall survival (p=0.925) or disease-specific survival (p=0.956).

**Conclusion:** When compared to a stage-matched cohort of patients with clear cell RCC, patients with URCC did not have worse overall or disease-specific survival outcomes. To our knowledge, this is the largest cohort of patients with URCC with clinical follow up to be presented.

Podium #12

**PREDICTORS OF COMPLICATIONS FOLLOWING PERCUUTANEOUS RENAL MASS BIOPSY IN 1053 PATIENTS**

Natasza M. Posielski, MD1, Anthony Bui2, Shane A. Wells, MD3, Sara L. Best, MD1, Lori M. Gettle, MD3, Timothy J. Ziemlewicz, MD3, Meghan J. Lubner, MD3, J. Louis Hinshaw, MD3, Fred T. Lee, MD3, Stephen Y. Nakada, MD1 and E. Jason Abel, MD1

1University of Wisconsin Department of Urology; 2University of Wisconsin Medical School; 3University of Wisconsin Department of Radiology

Presented By: Natasza Posielski, MD

**Introduction:** The purpose of this project was to evaluate patient, tumor, and technical factors associated with procedural complications after percutaneous renal mass biopsy (RMB).

**Methods:** Patients undergoing RMB from 2003-2017 were identified. Institutional protocol allows RMB with INR ≤ 2.0, platelets > 25,000 and continuation of aspirin (ASA) therapy. Predictors of complications were evaluated with logistic regression.

**Results:** Of 1053 patients, 23 (2.2%) patients had complications including: symptomatic hematomas 6 (0.6%), self-limited gross hematuria 8 (0.8%), severe pain 4 (0.4%), UTI 4 (0.4%) and one patient each with hypotension, pseudoaneurysm and urinary retention. Major complications (≥Clavien 3a) were identified in 5 (0.5%) patients and 11 (1.0%) were admitted to the hospital. Age, BMI, gender, CCI, smoking status, platelet count, INR, hemoglobin, and blood pressure were not associated with complications (p=0.48, 0.09, 0.10, 0.33, 0.47, 0.16, 0.41, 0.46, 0.30). No associations were identified with tumor diameter, nephrometry score, needle size, type of radiologic guidance, or number of needle passes (0.30, 0.18, 1.0, 0.27, 0.10). Twelve radiologists performed at least 50 RMBs, complication rates ranged from 0-2.3%. Risk was not increased during a radiologist’s first 50 cases, p=0.23, or with trainees present, p=0.24. RMB was performed in 401 (38%) patients on ASA and 51 (4.8%) with INR > upper limit normal (>1.2) with no increased risk, p=0.23 and 0.41, respectively.

**Conclusion:** RMB is safe for patients with platelets > 25,000 or mildly elevated INR 1.3-2.0. ASA use, number of needle passes and radiologist experience were not predictive of risk of complications.
Podium #13
RENAL DISEASE PROGRESSION IN ADULT AND PEDIATRIC PATIENTS WITH A HISTORY OF POSTERIOR URETHRAL VALVES
Benjamin Abelson, MD1, Victoria Huang, BS2, Alice Crane, MD, PhD1, Abhinav Khanna, MD, MPH1, Katherine Dell, MD1 and Audrey Rhee, MD1
1Cleveland Clinic; 2Case Western Reserve University School of Medicine
Presented By: Benjamin Abelson

Introduction: There are 300-500 new cases of posterior urethral valves (PUV) diagnosed annually in the United States, and approximately one-third of these patients will progress to end stage renal disease. Long-term evaluation to determine the natural history of these patients’ renal deterioration is lacking.

Methods: We conducted a retrospective review of the electronic medical record of all patients with a diagnosis of PUV seen at our institution between 1995-2017. Primary outcome was progression to ESRD. Secondary outcome, the rate of estimated glomerular filtration rate (eGFR) decline, was measured if patients had multiple eGFR values greater than one year apart.

Results: Ninety patients were included in the study. Median duration of follow-up was 11.6 years (IQR 3.9 – 20.0) and fifteen of these patients (17%) progressed to ESRD. Of the fifteen patients who progressed to ESRD, four patients (26%) progressed after age 18, whereas nine patients progressed before age 5. Forty patients (27 children and 13 adults at last follow up) had sufficient eGFR data for inclusion in the rate of eGFR decline analysis. Pediatric patients experienced a more rapid decline in eGFR compared to adults, 4.9 units per year vs. 1.6 units per year, respectively (p<0.001).

Conclusion: Consistent with clinical observation, eGFR decline occurs rapidly during childhood, though this study reveals that renal disease progression continues into adulthood. Furthermore, up to a quarter of patients with PUV will progress to ESRD in adulthood, which reinforces the need for lifelong surveillance of this “pediatric” disease.

Podium #14
NOVEL SURGICAL APPROACHES TO NEO-UMBILICOPLASTY IN THE SETTING OF BLADDER EXSTROPHY
Eric Anderson, BS1, Jessica Goetz, DO2, Jennifer Frazier, MPH3, Bryn Sack, MD4, Travis Groth, MD2, Douglas Canning, MD3, Aseem Shukla, MD1, Dana Weiss, MD3, Michael Mitchell, MD2, Joseph Borer, MD4, John Kryger, MD2 and Elizabeth Roth, MD2
1Medical College of Wisconsin; 2Children’s Hospital of Wisconsin; 3Children’s Hospital of Philadelphia; 4Boston Children’s Hospital
Presented By: Eric R. Anderson, BS

Introduction: The umbilicus defines the abdomen. An atypical umbilicus can distress the patient and their caregivers (1). There is no standardized approach to neo-umbilicoplasty(NU) for bladder exstrophy(BE). Other authors have reported patients left with flat, featureless scars rather than the expected, superiorly hooded umbilicus with aesthetic depth (2). We present three, novel NU techniques for BE and short-term surgical outcomes.

Methods: AND MATERIALS Patients with BE presenting at a member institution were prospectively consented and enrolled in the Multi-Institutional Bladder Exstrophy Consortium (MIBEC). MIBEC institutions recorded surgical video during classic BE repair to include representative NU techniques. Our three most implemented techniques (Circular Free-Graft, S-Flap and Trapezoid Flap) were described. We recorded short-term outcomes data including times utilized, and revisions required (with indications).

Results: Our consortium has performed thirty-two circular free graft NU, seven S-flap NU, eleven trapezoid flap NU and three alternative technique NU. Two free grafts required revision due to dysmorphic neo-umbilici. No other technique required revision. In all cases, NU creation was successful, no procedures were aborted and there were no reported immediate postoperative complications such as hematoma, seroma, infection or necrosis of the NU.

Conclusion: These three novel NU techniques are simple, minimally invasive techniques which based on short-term outcomes data reproducibly produce aesthetically pleasing NU.

CITATIONS: 1 Martina Bongini et al. Umbilical Reconstruction in Children: A Simplified
Podium #15
THE CLINICAL SIGNIFICANCE OF URODYNAMIC TESTING AND IMAGING STUDIES IN THE MYELOMENINGOCELE INFANT
Kathryn Marchetti, MD, Ted Lee, MD, Lauren Corona, MD, Courtney Shepard, MD, Vesna Ivancic, MD, Kate H Kraft, MD, David A Bloom, MD, Julian Wan, MD and John Park, MD
Department of Urology, Michigan Medicine
Presented By: Kathryn Marchetti, MD

Introduction: Although infant urodynamic and imaging results often impact clinical decision making, the long-term significance of those findings remains undefined. We hypothesized that infants born with elevated bladder pressures, vesicoureteral reflux (VUR), and/or hydronephrosis have persistent risk of upper tract damage despite CIC and pharmacotherapy, and thus a higher risk of augmentation cystoplasty (AC).

Methods: Patients at a single institution followed since infancy (<1yo) from 1984 to 2017 were reviewed. Those with infant cystometrogram, voiding cystourethrogram, and renal ultrasound were included. Primary outcomes were AC, AC for elevated bladder pressure, and AC for incontinence.

Results: A total of 111 patients were included, with mean follow-up time of 17.0 years (6.6 years). 27 (24.3%) patients underwent AC (17 for elevated bladder pressures and 10 patients for incontinence). Patients with DLPP/EFP above 40 cm H2O and VUR during infancy were more likely to undergo AC for elevated pressures (p = 0.04, p = 0.05, respectively). Binary logistic regression revealed these factors to be predictive of future AC for elevated pressures. When taking into consideration incontinence as an indication for AC, overall AC rates are similar regardless of urodynamic or imaging findings.

Conclusion: Collectively, these findings help risk stratify myelomeningocele infants to counsel families on the likelihood of future surgical intervention.

Podium #16
THE SMART ARTIFICIAL URINARY SPHINCTER (SAUS) AS A NOVEL DEVICE IN TREATING BLADDER OUTLET INCOMPETENCE IN THE PEDIATRIC PATIENT
Jesse Jacobs, MD1, Kahlil Saad, MD1, Bert Muller, PhD2, Bekin Osmani, PhD2, Jeremy Rickli, PhD1, Tino Topper, PhD2, Steve Majerus, PhD3, Kirstan Meldrum, MD1 and Nivedita Dhar, MD1
1Wayne State University, Department of Urology; 2University of Basel; 3Cleveland Clinic Lerner Research Institute
Presented By: Jesse Jacobs, MD

Introduction: In pediatric patients, an incompetent bladder outlet often results from congenital anatomic anomalies or from neurogenic sphincteric incompetence. These children usually require bladder neck surgery to achieve continence, but outcomes are often suboptimal. The artificial urinary sphincter (AUS, AMS 800) while effective, has profound limitations and the AMS 800 has been largely abandoned as a pediatric treatment modality. Therefore, a device such as the SAUS that mimics natural sphincteric function is highly desirable.

Methods: Designing a new AUS has been complicated by difficulties in developing a sensory feedback and closed loop system with millisecond response time. A key innovation of SAUS is the low voltage dielectric elastomer transducer (DET) sensor that permits the
cuff to become an intelligent pressure sensor. When the DET-enabled cuff senses a pressure change, its capacitance changes and creates an electrical signal which notifies the actuator to adapt cuff pressure. This millisecond closed loop feedback permits SAUS's cuff to rest at a lower baseline pressure which will likely reduce the incidence of urethral erosion, mechanical failure, and associated complications.

**Results:** We have developed a biocompatible fabrication of the DET nanostructure on silicone with a response time of 20 milliseconds to pressure changes. We have demonstrated that DET multi-layer sensors remain operational even if some layers fail due to breakdowns. Simulation testing of a working prototype has been successfully performed.

**Conclusion:** SAUS closed-loop control may be a platform technology with multiple medical applications including treatment of pediatric urinary incontinence and potentially fecal incontinence with continued research.

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**Podium #17**

**PROXIMAL HYPOSPADIAS AND ACQUIRED CRYPTORCHIDISM: PREVALENCE, MORPHOLOGY, AND CLINICAL IMPLICATIONS**

Anthony D'Oro, BA, Ilina Rosoklija, MPH, Elizabeth Yerkes, MD, Bruce Lindgren, MD and Earl Cheng, MD
Ann Robert H. Lurie Children's Hospital of Chicago
Presented By: Anthony D'Oro, BA

**Introduction:** Proximal hypospadias has been associated with acquired cryptorchidism (AC). We sought to establish the rate of AC among hypospadias patients at our institution, identify clinical predictors of AC, and establish the rate of malunion between the ascended testis and the epididymis, as malunion may indicate an undescended testis variant.

**Methods:** A retrospective review of patients who underwent hypospadias repair between 2010 and 2016 was conducted. Patients with a history of bilaterally undescended testes, inguinal surgery, or differences of sex development were excluded.

**Results:** Those with proximal hypospadias (10/91, 11%) were more likely than those with midshaft hypospadias (1/76, 1%) to develop AC (p=0.01). Risk for AC was associated with pre-term birth (p=0.01) and penoscrotal transposition (p=0.06). Bifid scrotum (p=0.18), unilateral retractile testis (p=1.0), or a contralateral undescended testis (p=1.0) were not associated with increased likelihood of AC. In total, 48/91 patients underwent testicular surgery, either for AC or tunica vaginalis flap harvest with concomitant orchiopexy. Of these 48 patients, 8 had operative reports describing the epididymal anatomy. Epididymal malunion to the testis was evident in 6/8 of these patients.

**Conclusion:** Degree of hypospadias, pre-term birth, and penoscrotal transposition are associated with increased risk of AC. Preliminary data suggests a high percentage of testes with AC have epididymal malunion.
Podium #18
SCREENING VOIDING CYSTOURETHROGRAM IN CHILDREN WITH MULTICYSTIC DYSPLASTIC KIDNEY DOES NOT CHANGE PATIENT MANAGEMENT OR PREVENT FEBRILE URINARY TRACT INFECTION
Christopher Brown, MD, Daryl McLeod, MD, MPH and Christina Ching, MD
Nationwide Children's Hospital
Presented By: Christopher T. Brown, MD

Introduction: While children with multicystic dysplastic kidneys (MCDK) are predisposed to contralateral kidney (CK) vesicoureteral reflux (VUR), it is unknown if this results in an increased risk of UTI. We hypothesized that knowledge of VUR via voiding cystourethrogram (VCUG) would reduce the number of febrile urinary tract infections (fUTIs).

Methods: We performed a retrospective chart review of all patients at our institution with a diagnosis of MCDK from 1/1/07 to 7/14/17. Patients were evaluated for age, sex, race, imaging results on renal ultrasound (RUS) and/or VCUG, occurrence of fUTI, and prophylactic antibiotic (ppx) use.

Results: 166 patients were identified; 69.3% of patients were diagnosed with MCDK on prenatal imaging. Seventy-seven patients had a screening VCUG after diagnosis of MCDK. A total of 18 patients with VCUG had VUR with 13 (16.9%) having VUR in the CK. Only children undergoing VCUG were placed on ppx with no difference in the use of ppx in patients with and without dilating VUR (45.5% vs. 42.9%). Overall, 11 patients experienced a fUTI. More children who underwent VCUG than those who did not had a fUTI (11.7% vs. 3.4%; p=0.04). Use of ppx and presence of CK renal anomaly on RUS had no impact on incidence of subsequent fUTI.

Conclusion: Knowledge of VUR based on VCUG did not reduce rate of fUTI or predict ppx use based on dilating or nondilating VUR. We do not find it necessary to obtain screening VCUG in otherwise healthy children with MCDK.

Podium #19
OUTCOME OF CIRCUMCISION FOR NEWBORNS WITH WEB PENIS: OBLIQUE SKIN INCISION FOLLOWED BY PENIS SHAFT SKIN PHYSICAL THERAPY AVERTS SURGICAL RECONSTRUCTION
Max Maizels, MD, Patrick Meade, BA, Ilina Rosoklija, MPH, Melanie Mitchell, RN and Dennis Liu, MD
Lurie Children's Hospital of Chicago
Presented By: Max Maizels, MD

Introduction: It is generally agreed that complications from newborn circumcision are low when the penis is normal. Conversely, the outcomes are less certain if a web of skin attaches the penis to the scrotum. We aimed to determine if reconstruction for penoscrotal web could be averted by assessing our outcomes.

Methods: We conducted a retrospective review of prospectively entered data. We enrolled newborns being assessed for circumcision in whom the penis shaft was straight but abnormally attached to the scrotum by a web. Mogen clamp circumcision was done using local anesthesia. Parents were instructed how to push down the shaft skin as physical therapy to promote the skin to anchor at the penis base and mitigate the web. Post circumcision evaluation was at least by 2 weeks later.

Results: A total of 654 boys presented for circumcision from January 2014 - October 2017. Of these, we enrolled 231 (35%) with a straight penis and a web, while 423 (65%) were excluded because the penis exam was normal (297) or surgical reconstruction was required (126). Follow up was done in 207 boys; 24 did not follow up. By 2 weeks after circumcision success was noted in 152 (73%) boys. By 6 months follow up the overall success rate was 205/207 (99%). Two boys (0.8%) failed, and reconstruction was done.

Conclusion: We found that 99% of circumcisions in newborns with a penis web and straight shaft who underwent shaft skin physical therapy were successful and avoided surgical reconstruction.
Podium #20
POSTOPERATIVE COMPLICATIONS AFTER URETERAL ACCESS SHEATH USE DURING FLEXIBLE URETEROSCOPY: MULTI-INSTITUTIONAL OUTCOMES
Nicholas Raja¹, Ted Lee, MD², Kathryn Marchetti, MD², Kate H Kraft, MD², Julian Wan, MD² and Jonathan Ellison, MD³
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Presented By: Nicholas Raja

Introduction: Use of ureteral access sheaths (UAS) during flexible ureteroscopy (URS) allows for rapid access to the upper tract with minimized trauma. Although a higher risk of intraoperative complications has been reported, supporting data is sparse. We compared 30-day complication rates following ureteroscopy with and without ureteral access sheath in the pediatric population.

Methods: Records of children less than 18 years old who underwent ureteroscopy at two tertiary care centers between 2000 and 2017 were reviewed. Outcomes included rates of 30-day emergency room visits, admissions, urinary tract infections, and obstructions.

Results: In total, 181 patients underwent ureteroscopy; access sheath was utilized for 76 (42%). Between ureteroscopy with and without access sheath, stone cumulative size, multiplicity, and location in the lower pole were no different. Additionally, access sheaths were not associated with higher rates of emergency room visits, admissions, urinary tract infections, or obstructions. Postoperative ureteral stents were not placed in 11 (14.5%) patients, all of whom had preoperative stents. None suffered from postoperative admission, urinary tract infection, or obstruction. One patient did present to the emergency room with flank pain.

Conclusion: Short-term postoperative complication rates do not increase following ureteral access sheath use during ureteroscopy. A subset of patients without postoperative stents did not suffer from noteworthy complications.

Podium #21
POSTOBSTRUCTIVE BLADDER SMOOTH MUSCLE REMODELING IS DEPENDENT ON BLADDER MESENCHY MAL STEM CELLS
Belinda Li, MD, Megan Devine, BS, Nicholas Tassone, BS, Robert Dettman, PhD and Edward Gong, MD
Ann Robert H. Lurie Children’s Hospital of Chicago
Presented By: Belinda Li, MD

Introduction: Partial bladder outlet obstruction due to posterior urethral valves leads to impaired detrusor remodeling and function. Sca-1+/CD34+ coexpressing mesenchymal stem cells (MSCs) were previously identified in the murine bladder which are altered after outlet obstruction. We hypothesize that loss of Sca-1 will inhibit physiologic detrusor hypertrophy after obstruction, leading to decreased compensatory function.

Methods: 6-8 week-old male Sca-1 knockout (KO) and wild-type (WT) mice underwent partial obstruction (PO) or sham surgery. Voiding stains on paper were used to assess bladder function. Bladders were harvested at 4 weeks for histology. Masson’s Trichome staining was used to quantify collagen-to-smooth muscle ratios and total smooth muscle content.

Results: Among Sca-1KOs, PO led to increased bladder circumference (1.87±0.13cm) compared to shams (1.21±0.18cm) and decreased percent smooth muscle content.
In comparison to WT PO, Sca-1KO PO mice had a higher collagen-to-smooth muscle ratio (0.46±0.04 vs. 0.31±0.05, p<0.05) and lower percent smooth muscle content (0.69±0.02 vs. 0.78±0.3, p<0.05). Figure. **Conclusion:** Sca-1+/CD34+ MSCs may play a role in detrusor smooth muscle remodeling and hypertrophy after partial obstruction. KO mice displayed decreased bladder smooth muscle content and increased levels of collagen consistent with fibrosis compared to WT.

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**Podium #22**

**THE EFFECT OF CONCEALED PENIS REPAIR ON STRETCHED PENILE LENGTH**

Wesley Baas, MD, Kristin Delfino, PhD and Ranjiv Mathews, MD

Southern Illinois University School of Medicine

Presented By: Wesley Baas, MD

**Introduction:** “Concealed” penis is a common cause for referral of children to pediatric urology. Concerns with regards to “normal” penile length are raised by parents and pediatricians. The penis is completely “concealed” in the suprapubic fat pad. Reconstruction can lead to a more protuberant penile appearance, and improved hygiene. Does this appearance indicate true tethering of the penile shaft that is released during surgery?

**Methods:** Stretched penile length measurements before, during, and after surgery were done on children undergoing “concealed” penis repair from January 2014 to February 2017. Charts were reviewed for demographic information including race, type of operation, and age at operation.

**Results:** A total of 69 children were included in the study. 48 of 69 children (69.6%) had no change in pre and post operative stretched penile length. The average change in penile length pre and post operatively was 0.02± 0.28 cm. Once the penis had been completely dissected, intraoperative measurement indicated an average 0.44±0.40 cm greater length than the preoperative measurement.

**Conclusion:** The current study indicates that while intraoperative measures may suggest an increase in length, once complete, penile length remains unchanged from preoperative penile measured length. Parents should be reassured that penile length in these children is normal for age and stage and development and while the penis may appear to have an improvement in penile length, this is a visual difference and not a true change. Additionally, stretched penile length preoperatively remains the best and most consistent measure of penile length in prepubertal boys.
EPIDURAL ANALGESIA DECREASES NARCOTIC REQUIREMENTS IN LOW LEVEL SPINA BIFIDA PATIENTS
Joshua Roth, MD, Rosalia Misseri, MD, Stephanie Whittaker, APRN, Francesca Monn, MD, Nicole Horn, MD, Mark Cain, MD and Morton Green, MD
Riley Hospital for Children at Indiana University Health
Presented By: Joshua Roth, MD

Introduction: Epidural analgesia use in low level spina bifida patients (LLSB) during labor and delivery has been reported, however, its post-operative use has not been studied or reported. We hypothesize that thoracic epidural placement in the T9-T10 interspace is safe and decreases narcotic requirements in LLSB following open lower urinary tract reconstruction (LUTR).

Methods: We reviewed LLSB who had LUTR and received epidurals at our institution from 4/16 to 10/17. Controls were LLSB who received tap blocks with similar procedures from 12/13-10/17. Ropivicaine 0.2% was infused at a rate of 0.4 mg/kg/hr in epidurals. Patients received either IV narcotics or a patient-controlled analgesia (PCA) pump. Opioid consumption was calculated utilizing equivalent IV morphine doses. Mean pain scores on post-operative day (POD) 0-3 were calculated. Descriptive statistics were performed.

Results: 10 LLSB who had LUTR and epidurals were matched to 10 LLSB who had LUTR and tap blocks. Groups were demographically similar. All had full abdominal sensation and functional levels at or below L3. Pain scores were similar or improved in the epidural group. The epidural group had decreased opioid consumption on POD 0-3 (0.80 mg/kg vs. 1.50 mg/kg, p=0.026). No epidural complications or changes in functional status were noted. Patients with epidurals had significantly lower overall narcotic requirements when adjusting for age and PCA availability (p=0.042). Patients with a PCA used more narcotics when adjusting for age and epidural (p=0.029).

Conclusion: Thoracic epidural analgesia is a safe and effective option to assist with post-operative pain management following LUTR in LLSB.

DIETARY ALTERNATIVES TO PRESCRIPTION POTASSIUM CITRATE
Tim Large, MD, John Asplin, MD, James Williams, PhD, Ignacio Grangja and Amy Krambeck, MD
IU School of Medicine
Presented By: Tim Large, MD, MA

Introduction: Potassium citrate has been adopted as the mainstay therapy for recurrent stone formers with hypocitraturia and aciduria. Cost and side effects reduces patient compliance. Orange juice (OJ) has been suggested as a dietary alternative potassium citrate, but high sugar content is regarded as a major shortcoming. Low calorie orange juice (low-cal OJ) beverages are a newer product with fifty percent less carbohydrates and may be a better alternative than current options.

Methods: Citrate and malate content of the beverages were measured by ion chromatography. The alkali content of the beverages was calculated from the pH of the beverage, the concentrations of malate and citrate, and the pKs of the organic anions. Preliminary clinical data was obtained using Litholink laboratories after a single volunteer consumed 2L of water, crystal light, and low-cal OJ.

Results: We found that low-cal OJ has comparable concentrations of citrate and alkali to standard orange juice (table1). When low-cal OJ was consumed for 7 days urine volume, urinary citrate, and urinary pH all increased compared to water-control (table2).

Conclusion: Low-cal OJ appears to have clinical application for aciduria and hypocitraturia. Further studies are on-going to evaluate the reproducibility of these findings and the feasibility in patients with recurrent stone disease, aciduria and hypocitraturia.
OUTCOMES OF OCTOGENARIANS UNDERGOING PERCUTANEOUS NEPHROLITHOTOMY

Joshua Heiman, BS, Tim Large, MD, Blake Anderson, MD, James Lingeman, MD and Amy Krambeck, MD
IU School of Medicine
Presented By: Joshua Heiman, BS

Introduction: Percutaneous nephrolithotomy (PCNL) is utilized for complex cases of nephroureterolithisis. As longevity is increasing, octogenarians are presenting with stone disease requiring PCNL. We evaluate the safety and feasibility of octogenarians undergoing PCNL.

Methods: From an institutional IRB-approved PCNL database, 1,437 patients were identified who underwent PCNL from 1999-2016. Patients were stratified into three groups based on age: 20-59, 60-79, and 80+. Statistical tests performed using chi-square and ANOVA compared outcomes of these groups.

Results: The baseline characteristics of the 1,437 patients are reported in table 1. Mean pre-operative hemoglobin (hgb) was significantly lower in the octogenarian group when compared to the other two groups (13.82 for 20-59, 13.6 for 60-79, and 13.05 g/dL for 80+, p<.0012). The change from pre to post-operative hgb was not significantly different among groups. There were more Clavian II-IV complications and transfusions in the octogenarian group compared to the younger cohorts. The most common complications in the octogenarians were bleeding complications (10.3%). No difference in readmission rates or ICU admissions was noted between groups.

Conclusion: PCNL is feasible in octogenarians; however, these patients have high rates of complications, including transfusion and require longer hospital stays. Fortunately, our study found no recorded long term sequelae or deaths in the octogenarian cohort.
Podium #26
ULTRA LOW DOSE LIMITED RENAL CT: RENAL STONE SURVEILLANCE WITH LOWER RADIATION THAN KUB AND COST EQUIVALENT TO ULTRASOUND.
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Presented By: Natasza Posielski, MD

Introduction: The purpose of this study was to prospectively describe and validate a novel CT-based protocol for surveillance of nephrolithiasis, which allows for accurate assessment of stone size and density, while minimizing radiation exposure and cost.

Methods: Patients with known nephrolithiasis were scheduled for an ultra-low dose CT scan with reconstruction limited to the kidneys and a standard dose non-contrast CT scan at the same visit. A novel automated stone measurement software was used to calculate and compare stone volume, maximum linear size and density on each scan.

Results: Eighteen patients with 28 renal stones were enrolled in the IRB approved study. Average stone length was 9.0mm vs 9.3mm on the ultra-low dose limited and standard CT scan, mean percent error (MPE) of 5.2%. Stone volume also correlated well with an average of 452.2mm³ vs 464.3mm³ on low dose and standard CT, MPE of 11.9%. Automated density measurements were comparable, with an average maximum density of 1025 HU on low dose and 1084 HU on standard CT scans, MPE= 12.5%. Mean effective dose of the limited renal CT series was 0.53 mSv, an average 92% dose reduction from standard CT (6.4 mSv) and a 47% reduction from a kidney-ureter-bladder (KUB) series (<1mSv). Cost of a limited low-dose CT was equivalent to that of a renal ultrasound.

Conclusion: Limited low-dose CT scans used in conjunction with automated stone measurement software provide the accuracy of standard CT scans at a lower radiation dose than KUB and equal cost to renal ultrasound.

Podium #27
THE MOSES HOLMIUM SYSTEM – TIME IS MONEY
Karen Stern, MD and Manoj Monga, MD
Cleveland Clinic
Presented By: Karen L. Stern, MD

Introduction: The Moses technology of the Holmium laser has been shown to decrease retropulsion in the ureter and procedural time in kidney stones during laser lithotripsy. Theoretically, these improvements could lead to cost savings for the patient given the hefty cost of operating room.

Methods: All patients with total laser energy data recorded who underwent ureteroscopy with laser lithotripsy by a single surgeon at a tertiary care center were included. Total lasing time was calculated from the total laser energy. Sub-analysis was done on stone size and stone composition. The procedure time using Moses technology was projected to be approximately 35% less based on prior in vitro studies. The projected cost savings was then utilized to predict cost-effectiveness of the Moses technology.

Results: 40 patients were included. The mean lasing time was 3.02 minutes and mean stone size 10.2 mm. Linear regression showed a positive association between stone size and laser time, p=0.01. There was no significant correlation between stone composition or stone Hounsfield units and lasing time. On cost analysis for stones of all sizes the Moses system has a price differential of an increase in $292.36 when compared to the standard TracTip Holmium system. For stones larger than 10 mm, the price differential for the Moses technology is an increase in $253.16.

Conclusion: The decrease in lasing time achieved by the Moses system does not translate into sufficient cost savings to off-set the higher cost of the laser fiber and software.
Podium #28
INVESTIGATIONAL TEXT MESSAGES: ASSESSING PAIN AFTER URETEROSCOPIC STONE REMOVAL
Kevin Flynn, MD1, Paul Guidos, MD2, Shelby Francis1, Jacob Simmering1, Philip Polgreen, MD, MPH3, Bradley Erickson, MD, MPH2 and Chad Tracy, MD2
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Presented By: Kevin J. Flynn, MD

Introduction: The goal of this study was to chronicle the natural history of pain following ureteroscopy with lithotripsy for nephrolithiasis through automated daily text messages.

Methods: Patients undergoing ureteroscopy with lithotripsy were prospectively approached (n=74), those enrolling completed a questionnaire and received twice daily text messages assessing postoperative pain (POP). Pain was rated 0-10, averaged for a daily mean, and collected through post-operative day (POD) 14. Median pain was charted as a function of POD. Univariate analysis was performed to identify factors predictive of POP.

Results: Of 47 patients enrolled, 40 (85%) completed the study. Figure-1a details patient, stone, and surgical factors. Median time to pain resolution was POD-8 (Figure-1b). By POD-3, 75% of patients report pain <4 and 75% of patients report pain ≤2 by POD-7. Increased POP was predicted by increased pre-op pain (p<0.0001), psychiatric history (p=0.033), pre-op opioid use (p=0.031), and level of pre-op opioid consumption (p=0.045). Patients with pre-op renal drainage reported lower POP (p=0.005).

Conclusion: Median time to pain resolution was 8 days and most patients had no significant pain after POD-3. Psychiatric history, pre-op pain, and opioid use predicted POP, while pre-op renal drainage decreased POP. Daily text messaging is a unique way to assess POP and has high rate of patient compliance.

Podium #29
IMPACT OF DIETARY PROTEIN ON URINARY OXALATE LEVELS UTILIZING THE NUTRITIONAL DATA SYSTEM FOR RESEARCH (NDSR)
Robert Medairos, MD1, Halle Foss, BS1, Jack Kleinman, MD1, Kristina Penniston, PhD, RD2, Andrea Moosreiner, MPH, RD1, Jeffrey Wesson, PhD, MD1 and Carly Davis, MD1
1Medical College of Wisconsin; 2University of Wisconsin, Madison
Presented By: Robert A. Medairos, MD

Introduction: The objective of this study is to evaluate the impact of the amount and source of protein intake on urinary oxalate for patients with recent urolithiasis using the NDSR.

Methods: We prospectively recruited patients from a single institution who either passed or underwent calcium oxalate stone treatment within 6 months and underwent a complete metabolic work-up, including two 24hr (24hr) urine sample collections. Patients with metabolic predispositions to stone formation or taking medications which may impact urine parameters were excluded. Total dietary intake was obtained using a 3 day food record and 24hr dietary recall, analyzed by a trained bionutritionist using NDSR. Linear and multiple
regression analysis were used to determine the effect of the amount and source of protein intake on urinary oxalate, when accounting for dietary calcium, oxalate and vitamin C.

**Results:** A total of 15 patients were evaluated. Mean age was 45.1 ± 18.3 years and BMI 26.0 ± 6.9 with a higher proportion of women (60%). Mean urinary oxalate level was 32.5 ± 12.0 mg/day. On linear regression, total and vegetable protein intake each trended towards a statistically significant association with urinary oxalate (β = 0.50, p = 0.06 and β = 0.50, p = 0.06). Multiple regression analysis demonstrated a significant association between both total protein and dietary oxalate intake and urinary oxalate (β = 0.33, p = 0.03 and β = 0.06, p = 0.04).

**Conclusion:** The amount of dietary protein was positively associated with urinary oxalate levels, after accounting for confounders.

**Podium #30
RELATIVE VALIDITY OF A DIETARY SCREENING TOOL TO IDENTIFY RISK FACTORS FOR CALCIUM UROLITHIASIS**

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**Presented By:** Kristina L. Penniston, PhD, RDN, FAND

**Introduction:** The identification of specific dietary risk factors for urolithiasis enables appropriate nutrition intervention. We developed a stone-specific food screener (SFS) and assessed its relative validity.

**Methods:** The SFS was developed via an iterative process involving identification of foods and individual dietary factors that influence calcium (Ca) stones. Patients (n=26, 52±12 y; 57% female) and healthy volunteers (n=38, 33±14 y; 68% female) completed the SFS and 3-d weighed diet records (DRs), a dietitian-assisted 24-h food recall (RC), or both. Agreement between measures was assessed.

**Results:** The SFS compared favorably with both DRs and RCs for fruits/vegetables (F/V, 5.3±2.4 vs. 5.7±3.0 and 5.2±2.8 servings/d; P>0.36), Ca (960±510 vs. 1,025±431 and 954±474 mg/d; P>0.08) and oxalate (239±96 vs. 221±172 and 274±230 mg/d; P>0.22). For sodium (Na) and fluids, the SFS compared best with DRs (3,299±1,441 vs. 2,831±959 mg/d and 64±37 vs. 69±38 ozs/d; P>0.25). Paired correlations within individuals were high for most SFS-to-DR comparisons (figure). On average, the SFS took 6.5 minutes to complete.

**Conclusion:** The SFS compared well with DRs for stone-related dietary factors – fluids, F/V, oxalate, Ca, and Na – and could be used in clinic to identify patients’ habitual dietary risk factors and to stratify those requiring more detailed nutritional evaluation, resulting in more effective stone prevention.
Podium #31
USE OF ABDOMINAL PLAIN FILM (KUB) VERSUS ULTRA-LOW DOSE COMPUTED TOMOGRAPHY FOR ASSESSMENT OF STONE FREE RATES AFTER SHOCK WAVE LITHOTRIPSY: IMPLICATIONS FOR SUBSEQUENT EMERGENCY DEPARTMENT VISITS AND UNPLANNED LITHOTRIPSY PROCEDURES
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Presented By: Akshay Sood, MD

Introduction: Ultra-low dose CT (ULD-CT) offers superior resolution, with equivalent radiation exposure, to a 2-view KUB. We undertook a retrospective-study to assess the impact of imaging modality (ULD-CT versus KUB) on stone-free-rates (SFR), and subsequent emergency department (ED) utilization and unplanned lithotripsy procedures.

Methods: Medical charts of patients undergoing SWL between Jan-2015 and Jun-2016 were retrospectively reviewed (n=248). All patients underwent KUB/ULD-CT at 3-6 weeks and were followed for 3-6 months; patients lacking follow-up were excluded (n=35). Outcomes studied were: 1. ED-utilization and 2. unplanned lithotripsy procedure, defined as a procedure on the side of the SWL within 3-months following 'negative' postoperative imaging.

Results: The patients were well matched on baseline/stone-related characteristics (Table). The SFR in KUB cohort was 78.3% (n=134) and in ULD-CT cohort was 64.2% (n=27 [p=0.057]). 2/27 patients (7.4%) deemed stone-free on ULD-CT returned to ED within 3-months, while 17/134 patients (12.7%) deemed stone-free on KUB returned to ED during the same time-period (p=0.437). 1/27 patient (3.7%) needed an unplanned surgery in the ULD-CT group, while 13/134 patients (9.7%) needed an unplanned surgery in the KUB group (p=0.311; Figure).

Conclusion: ULD-CT may offer a better estimate of true SFR, and may mitigate unwanted ED and return-to-operating-room visits. Prospective studies may be warranted to evaluate this question further.

Podium #32
IDENTIFYING POTENTIAL PROBIOTIC AND PATHOGENIC BACTERIA IN THE FECAL MICROBIOME OF URINARY STONE FORMERS
Anna Zampini, MD, MBA, MS, Andrew Nguyen, MD, Emily Rose, BS, Manoj Monga, MD and Aaron Miller, MD
Cleveland Clinic
Presented By: Anna M. Zampini, MD, MBA

Introduction: Specific bacteria from the gut microbiota are known to inhibit urinary stone disease (USD). However, there is a gap in understanding the broader role of gut microbiota in the promotion or inhibition of USD. The objective of this study is to use high-throughput microbial profiling to identify bacteria that may play a protective or pathogenic role in USD.

Methods: Stool samples were collected from 23 USD and 43 healthy subjects. Microbial DNA was extracted from the samples and underwent high-throughput sequencing (Illumina MiSeq) using a hypervariable region of the 16S rRNA gene. Potential protective or pathogenic operational taxonomic units (OTU) were identified by determining which OTU’s were enriched in either the USD or control group.
Results: There was significant overlap between the USD and control groups. With 14922 unique OTU identified in total, 117 were significantly enriched in control and 152 in USD subjects. Specifically, members of the Clostriadiales order including Ruminococcus and Lachnospiraceae were increased in control subjects, whereas USD patients had increases in other Lachnospiraceae spp., Bacteroides, and Megasphaera.

Conclusion: This study adds to the body of evidence that the fecal microbiome is altered in those with USD. Our results suggest that there may be both probiotic and pathogenic contributions of the gut microbiota to USD.

Podium #33
CORRELATION OF AGE AND GENDER WITH PATIENTS’ KIDNEY STONE RELATED QUALITY OF LIFE
Karen Stern, MD1, Jodi Antonelli, MD2, Davis Viprakasit, MD3, Timothy Averch, MD4, Thomas Chi, MD5, Ben Chew, MD6, Vincent Bird, MD7, Vernon Pais, MD8, Necole Streeper, MD9, Roger Sur, MD10, Stephen Nakada, MD11, Kristina Penniston, PhD11 and Sri Sivalingam, MD1
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Presented By: Karen L. Stern, MD

Introduction: The Wisconsin Stone Quality of Life questionnaire (WISQOL) is a validated survey evaluating the HRQOL of stone formers. The North American Stone Quality of Life Consortium is a multi-center, longitudinal prospective study of kidney stone patients’ HRQOL using the WISQOL, with data currently collected on 2052 patients from 11 centers. This study is a sub-analysis of cross-sectional data looking at the association between age, gender, and race on the HRQOL of stone formers.

Methods: Data from 1778 patients were included in the analysis. Regression analysis with both univariate and multivariate analysis was used to determine the impact of age, gender, and race on HRQOL. Both total score and scores within 4 sub-domains were included: social functioning, emotional functioning, stone-related impact, and vitality.

Results: Mean total score (0-100) for all patients was 70.6 ± 12.7. On both univariate and multivariate analyses, older patients had a significantly higher total score than younger patients (p-value <0.0001). This finding was consistent throughout all 4 sub-domains. Male patients had higher HRQOL scores than females on both univariate and multivariate analyses (p-value <0.0001). The effect of race on HRQOL was variable and inconclusive likely due to the small sample size of non-Caucasian patients (15.8%).

Conclusion: Older kidney stone patients and male kidney stone patients have higher stone-related HRQOL than younger patients and females. The clinical impact of these findings
might include future implications for patient counseling and potential changes to the paradigm of the surgical management of stones.

Podium #34
WITHDRAWN

Podium #35
PERCEPTIONS OF PROSTATE MRI AND FUSION BIOPSY FOR PATIENTS DIAGNOSED WITH PROSTATE CANCER: RESULTS FROM A NATIONAL SURVEY OF RADIATION ONCOLOGISTS AND UROLOGISTS

Laura Bukavina, MD MPH1, Jon Tilburt, MD MPH2, Badrinath Konety, MD MBA3, Nilay Shah, PhD4, Cary Gross, MD5, James Yu, MD6,7, Robert Abouassaly, MD7,11, Frederick Schumacher, PhD5,12, Alexander Kutikov, MD9, Marc Smaldone, MD9 and Simon Kim, MD MPH10,13

1Case Western Reserve University; 2Mayo Clinic, Division of Bioethics, Department of Medicine, Rochester, MN; 3University of Minnesota, Department of Urology, Minneapolis, MN; 4Mayo Clinic, Division of Health Policy & Research, Rochester, MN; 5Yale University, Department of Medicine, Cancer Outcomes and Public Policy Effectiveness Research Center, New Haven, CT; 6Yale University, Department of Radiation Oncology, New Haven, CT; 7Cleveland Clinic, Glickman Urology and Kidney Institute, Cleveland, OH; 8Case Western Reserve University, Department of Population and Quantitative Health Sciences, Cleveland, OH; 9Fox Chase Cancer Center, Department of Surgical Oncology, Philadelphia, PA; 10University Hospitals Cleveland Medical Center, Urology Institute, Cleveland, OH; 11Louis Stokes Cleveland VA Medical Center, Cleveland, OH; 12Case Western Reserve University Comprehensive Cancer Center and School of Medicine, Cleveland, OH; 13Yale University, Cancer Outcomes and Public Policy Effectiveness Research Center, New Haven, CT

Presented By: Laura Bukavina, MD, MPH

Introduction: Magnetic resonance imaging (MRI) of the prostate and fusion biopsy have been advanced to improve the detection of clinically significant prostate cancer and better identify patients appropriate for active surveillance (AS). Yet, contemporary attitudes and frequency of its use among radiation oncologists (RO) and urologists (URO) remain largely unknown. We performed a national survey of URO and RO to assess the perceived attitudes towards and frequency of prostate MRI and fusion biopsy.

Methods: From January to July of 2017, we surveyed 915 RO and 940 URO about prostate MRI and fusion biopsy. The survey queried respondents about the perceptions of prostate MRI and fusion biopsy and inquired about self-reported use of advanced imaging. Pearson chi-square and multivariable logistic regression were used to identify physician characteristics associated with survey responses.

Results: The overall response rate was 37.3% (n=691) and similar for RO and URO specialties (35.7% vs. 38.7%; p=0.18). Both URO and RO demonstrated similar positive views that MRI fusion biopsy improves PCa risk stratification (67% vs. 71%; p=0.19) and fusion biopsy increases the confidence recommending AS (55% vs. 60%; p=0.18). Yet, only a quarter of both specialties reported frequently using prostate MRI for treatment decisions for low and intermediate PCas. Compared to respondents practicing in community practices, those in academic practices were associated with higher adjusted odds ratios for using prostate MRI for low-risk (OR: 3.96; p<0.001) and intermediate-risk PCas (OR: 2.49; p<0.001).
**Podium #36**

**OUTCOMES OF PELVIC FLOOR PHYSICAL THERAPY IN THE TREATMENT OF LEVATOR SPASM AND VOIDING DYSFUNCTION**

Diana Kakos, MD Candidate¹, Vicki Irish, CNP², Mireya Diaz-Insua, PhD² and Humphrey Atiemo, MD²

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Presented By: Diana Kakos, MD Candidate

**Introduction:** Pelvic Floor Physical Therapy (PFPT) is a validated, first line treatment for patients experiencing levator spasm (LS) and voiding dysfunction (VD). This study aims to expand the scientific knowledge regarding the success rate, compliance, and utilization of PFPT for patients with LS/VD; and to determine barriers to treatment.

**Methods:** A retrospective chart review was performed for all females diagnosed with LS/VD between 01/2012 and 12/2016. The incidence of referrals and completion rates of PFPT were recorded. Patient assessed outcomes using the American Urological Association Symptom Score (AUASS), AUASS Quality of Life (QOL), Michigan Incontinence Symptoms Index (M-ISI), and M-ISI Bother were recorded before and after PFPT attendance. Barriers to treatment were recorded.

**Results:** A total of 414 patients were included. Of those, 249 (60%) were prescribed PFPT. 130 (52%) patients were compliant and attended PFPT. 61 (47%) patients completed PFPT. Patients who completed PFPT attended a mean of 6.1 ± 3.3 sessions. Data on 34 women who completed PFPT was available. A significant improvement was seen in AUASS (-6.2 ± 7.0 (n=31), p<0.001), AUASS-QOL(-0.9 ± 1.5 (n=28), p=0.003), M-ISI(-5.0 ± 6.9 (n=26), p=0.001), and M-ISI Bother(-1.3 ± 1.7 (n=30), p<0.001). Transportation(n=15), financial barriers(n=14), and other medical issues(n=15) were barriers to treatment.

**Conclusion:** Patients with LS/VD had significant improvement on validated urinary symptom scores after a mean of 6 PFPT sessions. The utilization of PFPT is 60%, the compliance in attending PFPT is 52%, and 47% of patients complete PFPT. Transportation, financial barriers, and other health issues are key in preventing patients from attending and/or completing PFPT.

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**Podium #37**

**SOCIOECONOMIC DISPARITIES EXIST IN THE ACUTE MANAGEMENT OF STONE DISEASE**

Eric Kirshenbaum, MD¹, Chirag Doshi, MD¹, Robert Blackwell, MD², Petar Bajic, MD¹, Gopal Gupta, MD¹, Thomas Turk, MD¹, Robert Flanigan, MD¹, Haroon Janjua, MSc¹ and Kristin Baldea, MD¹

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Presented By: Eric Kirshenbaum, MD

**Introduction:** To assess factors that influence the decision making process in the treatment of acute non-infectious nephrolithiasis and identify socioeconomic disparities that may exist.

**Materials and Methods:** The Healthcare Cost and Utilization Project State Inpatient Database and State Ambulatory Surgery Database for the state of California was utilized. Patients admitted to the hospital with a primary diagnosis of kidney or ureteral stone were identified. The initial treatment modality utilized was assessed and factors that influenced that decision were analyzed. Multivariate logistic regression model was fit to determine which factors independently influenced whether a patient underwent upfront ureteroscopy.

**Results:** Of the 53,336 patients admitted with a kidney or ureteral stone, 42.4% underwent medical expulsive therapy while the rest either had stent alone (26.91%), ureteroscopic removal (25.58%), nephrostomy tube placement (0.28%), extracorporeal shockwave lithotripsy (1.92%) or percutaneous nephrolithotomy (2.91%). On multivariate logistic regression model, minorities, younger patients, publically/uninsured patients, more comorbid patients, those admitted on the weekends and patients admitted to an academic institution had significantly lower odds of undergoing upfront ureteroscopy (all p values <0.001).

**Conclusion:** Upfront ureteroscopy is an often overlooked procedure for patients with nephrolithiasis in the absence of infection. Unfortunately, minorities, publically insured
patients and those admitted on the weekend are less likely to undergo upfront ureteroscopy, a disparity that should be addressed.

Podium #38
VIDEO VISITS CAN BE USED TO SUBSTITUTE FOR TRADITIONAL UROLOGICAL CLINIC VISITS
Parth Shah, MD, Juan Andino, MD, MBA, William Roberts, MD, Alon Weizer, MD, Jim Dupree, MD, MPH, Todd Morgan, MD, Stanley Mukundi, PA-C and Chad Ellimoottil, MD
University of Michigan
Presented By: Parth K. Shah, MD

Introduction: Telemedicine is touted as a way to increase the efficiency of healthcare delivery. However, many debate whether providers will use video visits as a substitute for traditional clinic visits or as an additive service which may lead to an overall increase in healthcare utilization and spending.

Methods: We reviewed all 15-minute established patient visits at our institution from July 2016 to July 2017. We identified all completed video visits (141 patients). We then created a stratified random sample of 141 traditional visits to serve as a control. We identified whether the video visits were used in a substitutive or additive fashion to a traditional office visit by determining the number of additional visits that occurred within 30 days of the initial encounter.

Results: Patients that were seen via video visit were younger (54.9 vs 62.7 years, p<0.001). However, the differences in the distance from hospital and median zip code based income were not statistically significant. Most common diagnoses seen through video visit encounters were related to urolithiasis (38%) and kidney/upper tract malignancy (18%). The percentage of patients who required an additional visit within 30 days of the initial visit was not different between the two groups 4% vs 6% (p=0.42).

Conclusion: Video visits can be used for a broad range of urology patients and tend to serve as a substitute for traditional clinic visits. These findings are in contrast to recent publications and suggests that the expansion of telemedicine may not lead to an increase healthcare utilization or spending.
Podium #39
SCREENING POSTOPERATIVE HEMOGLOBIN AFTER ROBOT-ASSISTED RADICAL PROSTATECTOMY: FREQUENTLY UTILIZED, BUT NECESSARY?
Jason Joseph, MD1, Elizabeth Habermann, PhD, MPH2, Amy Glasgow, MHA2, Rachel Carlson, BA3, Igor Frank, MD1, Matthew Tollefson, MD1, Stephen Boorjian, MD1, R. Houston Thompson, MD1, R. Jeffrey Karnes, MD1 and Matthew Gettman, MD1
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Presented By: Jason P. Joseph, MD

Introduction: Robot-assisted radical prostatectomy (RARP) for localized prostate cancer (PCa) is associated with low rates of perioperative transfusion and hemorrhage. At our institution, the decision to obtain screening hemoglobin testing after uncomplicated RARP varies as it is left to surgeon discretion. This testing is costly and associated with morbidity inherent to venipuncture. We sought to assess its prevalence and utility.

Methods: We queried our institutional prostatectomy registry to identify patients undergoing primary RARP for localized PCa between 2002 and 2016. Patients on blood thinners, with underlying bleeding diathesis, without preoperative hemoglobin within 30 days, and transfused intraoperatively were excluded. Demographic and perioperative data were reviewed.

Results: 3,405 patients were identified. Mean estimated blood loss was 402 ± 1217 mL, and rate of postoperative hemoglobin testing was 73.8% (n=2,514), of whom subsequent testing was prompted in 13.4% (n=337). Mean change in hemoglobin relative to preoperative was -2.7 ± 1.0 g/dL. 10.2% (n=256) and 3.5% (n=87) had relative decrease in hemoglobin ≥ 4 g/dL, and postoperative hemoglobin ≤ 10 g/dL, respectively. Of patients who were transfused (1.7%, n=58) and/or had postoperative hemorrhage (1.5%, n=48), 95.7% had signs or symptoms of anemia.

Conclusion: At our institution, routine postoperative hemoglobin testing after RARP was frequently utilized despite low rates of transfusion and hemorrhage. Further, the majority of patients undergoing transfusion or with hemorrhage had signs/symptoms suggestive of anemia. Additional studies are underway to assess cost implications of hemoglobin testing, and its role in independently predicting postoperative hemorrhage or transfusion.

Podium #40
RACE AND SOCIOECONOMIC DISPARITIES IN ORGAN TYPE, RECOVERY AND READMISSION IN KIDNEY TRANSPLANT RECIPIENTS
Alice Crane, MD, PhD, Nitin Yerram, MD, Tyler Coy, BA, Mohamed Eltemamy, MD, Emilio Poggio, MD, Richard Fatica, MD, Alvin Wee, MD, Charles Modlin, MD, MBA and Venkatesh Krishnamurthi, MD
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Presented By: Alice L. Crane, MD, PhD

Introduction: Racial and socioeconomic disparities are prevalent in healthcare and transplant patients are faced with many challenges leading to high readmission rates and long hospital stays.

Methods: We retrospectively reviewed 336 kidney-only transplant recipients aged 18-76 in 2015-2017. Social and demographic data were obtained from the medical records. Geographic median income was obtained from the U.S. Census Bureau based on zip code. Data were analyzed using the chi-squared or Kruskal-Wallis test.

Results: 60% of patients were male and 68% of patients were Caucasian, 24% African American (AA), and 7% other. An equal proportion of donation after brain death (DBD) and donation after cardiac death (DCD) kidneys were transplanted among all races. Only 7/82 (9%) AA patients received kidneys from living related donors while 61/230 (27%) of Caucasian received related donor kidneys (p<0.001). Within 30 days of transplant, 76/336 patients (23%) were readmitted. The readmission rate, frequency of deceased donor kidneys transplants, and length of stay (LOS) are presented below stratified by race. The median income for Caucasian patients was $53,917 compared to $41,129 for AA patients (p<0.0001).
Conclusion: Our data demonstrate a higher readmission rate and fewer living donor recipients in the AA population. Results from this study could inform pre-operative counseling and direct post-operative discharge planning and patient education efforts.

Podium #41
MRI SCREENING FOR PROSTATE: A COMPARATIVE STUDY WITH BREAST, COLON, AND LUNG SCREENING MODALITIES
Julia Yang1, Bissan Abboud2, Christina Buzzy, PhD2, AmrMahran, MD, MS2 and Lee Ponsky, MD1
1University Hospitals; 2Case Western Reserve University
Presented By: Julia Yang, MS

Under the Affordable Care Act, insurance companies are required to provide coverage for preventive services that warrant an A or B grade by USPSTF. Of the four common cancers - breast, prostate, lung, and colon, only prostate cancer is not covered. Unlike other cancers that use image modalities, prostate cancer screening is based on prostate specific antigen and digital rectal exam. In this study, we compared the recommended tests, along with multiparametric MRI for prostate cancer. The SEER program identified patients with colorectal, lung, breast, or prostate cancer from 2000-2014. The incidence and mortality rates were compared. Review articles were used to identify the diagnostic accuracy of these tests. According to SEER, prostate cancer showed the 2nd highest incidence rate and mortality rate. Compared to other tests, colonoscopy had the highest sensitivity, negative predictive value, and area under the curve. In prostate cancer, mpMRI with PSA showed higher sensitivity, NPV and AUC (80.9%, 95.4%, 0.92) when compared to PSA, DRE, and mpMRI alone. Prostate MRI is a comparable diagnostic test to mammography in its accuracy. With the addition of PSA, the accuracy of mpMRI surpassed mammograms and is comparable to LDCT and colonoscopy. Overall, mpMRI warrants further investigation by USPSTF to be used as a screening tool for prostatic cancer.
Podium #42
THE IMPACT OF VIDEO VISITS ON MEASURES OF CLINICAL EFFICIENCY AND REIMBURSEMENT
Juan Andino, MD, MBA, Parth Shah, MD, William Roberts, MD, Alon Weizer, MD, James Dupree, MD, MPH, Todd Morgan, MD, Stanley Mukundi, PA-C and Chad Ellimoottil, MD, MPH
Michigan Medicine
Presented By: Juan Jose Andino, MD, MBA

Introduction: AND OBJECTIVE While interest in the use of telemedicine is rapidly growing, little is known about the impact of these visits on measures of clinical efficiency and reimbursement.

Methods: Our dataset included 250 video and traditional clinic appointments for established patients scheduled between July 2016 - 2017. We calculated the percentage of each completed visit type; the average length of time that patients spent during the encounter from check-in to check-out; and used billing data to compare billing levels, insurance reimbursement, and out-of-pocket expenses.

Results: Out of 250 scheduled visits, 142 (51.8%) video visits and 153 (61.2%) clinic visits were completed as scheduled. Cycle time was significantly lower for video visits compared to traditional visits (24 minutes vs. 80 minutes, p<0.01). For patients that had billing data, we found that 85% of video visits were billed as a Level 3 encounter while 63% of clinic visits were billed as a Level 3 and 35% as a Level 4. Average commercial payer reimbursement was not statistically different for video visits compared to traditional visits ($48.76 vs. $52.84, p=0.21). Similarly, the average out-of-pocket expense was not statistically different for video visits compared to traditional visits ($29.07 vs. $33.10, p=0.22).

Conclusion: At our institution, video visits were associated with lower rates of completion and lower billing levels. However, video visits enhanced clinical efficiency through reduced cycle time while maintaining similar rates of reimbursement. Further research is necessary to understand the optimal implementation of telemedicine services like video visits into urology clinic workflow.

Podium #43
DEFINING PRODUCTIVITY BENCHMARKS AND FINANCIAL MARGINS FOR ADVANCED PRACTICE PROVIDERS IN UROLOGY
Melody Chen, MD1, Jonathan Kiechle, MD1, Zachary Maher, MBA2 and Christopher Gonzalez, MD, MBA1
1Case Western Reserve University and University Hospitals Cleveland Medical Center; 2University Hospitals Cleveland Medical Center
Presented By: Melody Chen, MD

Introduction: Recent data has demonstrated a worsening physician shortage in surgical subspecialties. Although nearly 67% of urologists report working with an APP, no studies have examined the natural history of incorporating an APP into urologic practice in terms of productivity and financial sustainability. We sought to determine productivity and financial benchmarks along with the time it takes for a newly hired APP to generate a consistent financial margin.

Methods: We examined productivity and financial data from a quaternary academic regional health care system from 2011-2017. We evaluated various markers including overall charges, net revenue, procedures performed, and work relative value units (wRVUs) for APPs to determine optimal productivity and financial benchmarks.

Results: We identified three APPs of varying experience, two of whom were hired in 2014. We found that when APPs billed 240 wRVUs per month they had a positive annual financial margin. This correlates to a benchmark of the 75th percentile of productivity based on the American Medical Group Association’s survey. For our newly hired APPs it took just over two years to reach this benchmark with relative consistency. The other examined markers were not consistent for overall financial sustainability due to differences in payor mix and reimbursement.

Conclusion: APPs can become financially sustainable members of a urologic practice in approximately the same time as a newly hired urologist. We believe that wRVUs can serve
as objective productivity and financial benchmarks as wRVUs eliminate inconsistencies in net income due to outside influences like differing overhead costs and payor mix.

Podium #44
WITHDRAWN

Podium #45
BARRIERS TO OBTAINING A PROSTATE MULTI-PARAMETRIC MAGNETIC RESONANCE IMAGING IN MEN ON ACTIVE SURVEILLANCE FOR PROSTATE CANCER
Eric Walton, Mustafa Deebajah, MD, Grace Yaguchi, MD, Richard Thompson, Milan Pantelic, MD, Craig Rogers, MD, Hakmin Park, MD, Mani Menon, MD, James Peabody, MD, Shaheen Alanee, MD and Ali Dabaja, MD
Henry ford health system
Presented By: Eric Walton

Introduction: Compared with TRUS biopsy, MRI-targeted biopsy (TB) has a better sensitivity and negative predictive value for clinically significant prostate cancer and can reduce the number of unnecessary biopsies. However, not all patient can obtain Multi-Parametric Magnetic Resonance Imaging (mp-MRI) and undergo MRI-TB. This study aims to explore the barriers to obtaining mpMRI in men on active surveillance for prostate cancer.

Methods: This is a retrospective review of prostate mpMRI ordered from August 2015 to October 2017. Data was extracted the electronic medical records and MRI cancellation was categorized based on the documented reason. Descriptive analysis is reported.

Results: Out of 793 prostate mpMRI ordered, 199 (25%) went un-scanned. Barriers to care were the most common reason for cancellation accounting for 46% of un-scanned orders. Amongst barriers to care, patient cancellations were the most common (39%), followed by difficulty contacting patients (32%), and insurance denials (29%). Other reasons for unscanned mpMRIs include provider cancellation (22%), medical contraindications (16%) and imaging pursued on site (13%). Overall, black and white patients were equally likely to have an unscanned mpMRI (p = 0.23). However, black patients were more likely than white to have a patient cancelled MRI (p <0.01) and white patients were more likely to have a provider cancelled mpMRI (p < 0.01).

Conclusion: Access to care is the primary reason for unscanned prostate mpMRI orders. Among these, difficulty contacting patients and insurance denials account for a majority of incomplete orders. Patient cancellations occur at a higher rate among African Americans patients.

Podium #46
WHICH SCORES NEED A CORE? AN EVALUATION OF MR-TARGETED BIOPSY YIELD BY PIRADS SCORE ACROSS DIFFERENT BIOPSY INDICATIONS
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Presented By: Niranjan Sathianathen, MD

Introduction: The correlation of the Prostate Imaging Reporting and Data System (PIRADS) to the presence of cancer has been established but studies have primarily evaluated this in a single clinical setting. This study aims to characterize the correlation of PIRADS score to the diagnosis of cancer on US-MR biopsy among men who are undergoing primary biopsy, those who have had a previous negative biopsy or men on active surveillance.

Methods: A consecutive sample of men undergoing US-MR biopsy from 2014-2017 were included in this retrospective study. Men were stratified into groups according to their clinical history: biopsy-naive, previous negative TRUS biopsy or on active surveillance. The correlation of PIRADS score to the diagnosis of any and clinically significant cancer (Gleason score ≥3+4) was determined.
Results: 255 patients with 365 discrete lesions were analyzed. PIRADS score 1-2, 3, 4 and 5 yielded any prostate cancer in 7.7%, 29.7, 42.3% and 82.4% of the cases respectively across all indications while clinically significant cancer was found in 0%, 8.9%, 21.4% and 62.7% respectively. The AUC for the diagnosis of any and significant cancer was 0.69 (95%CI 0.64-0.74) and 0.74 (95%CI 0.69-0.79) respectively. Men who have had a previous negative biopsy had lower detection rates for any prostate cancer for PIRADS 3 and 4 lesions compared to those that were biopsy-naïve or on active surveillance.

Conclusion: Cancer detection rates are significantly associated with PIRADS score. Biopsy yields differ across biopsy indications which should be considered when selecting a PIRADS score threshold for biopsy.

Podium #47
PERCEPTIONS OF BARRIERS TOWARDS ACTIVE SURVEILLANCE FOR LOW-RISK PROSTATE CANCER: RESULTS FROM A NATIONAL SURVEY OF RADIATION ONCOLOGIST AND UROLOGISTS
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1University Hospitals/Case Western Reserve University; 2Yale University, Cancer Outcomes and Public Policy Effectiveness Research Center; 3Mayo Clinic, Division of Health Policy & Research; 4Mayo Clinic, Division of Bioethics; 5University of Minnesota, Department of Urology; 6University of Texas Medical Branch, Division of Urology; 7Yale University, Department of Radiation Oncology; 8Louis Stokes Cleveland VA Medical Center, Department of Radiation Oncology; 9University Hospitals Cleveland Medical Center, Urology Institute; 10Case Western Reserve University Comprehensive Cancer Center and School of Medicine
Presented By: Kirtishri Mishra, MD

Introduction: Implementation of active surveillance (AS) is lagging in the U.S., and the etiology remains poorly understood. Addressing physician perceived barriers towards AS is critical to promote its use in low-risk prostate cancer (PCa). Thus, we performed a national survey of radiation oncologists (RO) and urologists (URO) to elucidate perceived barriers of AS for low-risk PCa.

Methods: In 2017, we fielded a 4-wave mail survey of 1,855 RO and URO. The survey evaluated attitudes and perceptions about barriers towards routine use of AS for low-risk PCa. Pearson chi-square and multivariable logistic regression analyses were used to identify respondent physician characteristics associated with each survey item.

Results: Overall, the response rate was 37.3% (n=691) and similar for RO and URO (35.7% vs. 38.7%; p=0.18). While 31.8% of respondents stated that most patients were not interested in AS; URO were less likely to support this than RO(16.5% vs. 48.9%; adjusted OR: 0.18, p<0.001). Similarly, 45.3% responded that patients do not choose AS due of repeat prostate biopsies with URO agreeing to lesser degree (36.3% vs. 55.4%; adjusted OR: 0.41, p<0.001). Both RO and URO felt patients preferred treatments delivered by their respective specialties. Both specialties felt there is high level evidence for AS (82.3%) and expressed comfortable recommending it (90.0%). Lastly, it is equally effective for survival compared to surgery and radiation (84.4%).

Conclusion: Lack of patient interest, need for repeat prostate biopsies, and perceived biases from each specialties represent key barriers to AS from RO and URO in the U.S.
Podium #48
SEMen AMaCR PROTEIN AS A NOVEL METHOD FOR DETECTING proSTATE CANCER
Tyler Etheridge1, Jane Straus, RN2, Mark A. Ritter, MD, PhD3, David F. Jarrard, MD4 and Wei Huang, MD5
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Presented By: Tyler Etheridge, BA

Introduction: Alpha methylacyl A coenzyme racemase (AMACR) has shown to be an excellent immunohistological biomarker for prostate cancer (PCa). Given the connection between prostate and urethra, we hypothesized that semen ejaculate would be an ideal specimen for detection of PCa specific biomarkers, such as AMACR. This study explores the detection of semen AMACR protein in men with and without PCa.

Methods: Semen ejaculates from 28 biopsy proven PCa patients prior to radical prostatectomy and 15 age-comparable controls were analyzed. An indirect sandwich ELISA chemiluminescence assay was used to detect semen AMACR, PSA and Matriptase proteins. Tissue AMACR protein was quantified in 12 corresponding prostatectomy specimens using automated quantitative analysis (AQUA).

Results: Semen AMACR protein was detected in 23/28 (82%) PCa patients and 23/24 (96%) PCa patients with significant tumor volume (>0.5cc or 0.3g). Among the five cancer patients with undetectable semen AMACR, four patients had small tumor volumes (<1% or 0.3g). Semen AMACR protein was also detected in 7/15 (47%) control non-cancer patients. Using 76ng/mL as a cutoff value, 20/28 (71%) patients and 20/24 (83%) patients with significant tumor volume were positive for semen AMACR protein, whereas only 5/15 (33%) age-comparable controls were positive. AMACR levels degrade with time.

Conclusion: This is the first study to demonstrate that AMACR protein is detectable in semen ejaculate. The higher AMACR levels detected in cancer patients suggests that semen AMACR protein may be useful as a non-invasive test for prostate cancer. Further validation study is warranted.

Podium #49
THE EFFECT OF RACIAL DISPARITY ON THE NEGATIVE PREDICTIVE VALUE OF PROSTATE IMAGING REPORTING AND DATA SYSTEM (PI-RADS) ON MULTI-PARAMETRIC MAGNETIC RESONANCE IMAGING OF THE PROSTATE (MPMRI)
Amr Mahran, MD1, Julia Yang, MS1, Christina Buzzy, PhD2, Rayan Abboud, MS3, Irina Jaeger, MD1, Vikas Gulani, MD, PhD1 and Lee Ponsky, MD1
1University Hospitals Cleveland Medical Center; 2Case Western Reserve University
Presented By: Amr Mahran, MD

Introduction: Our aim is to evaluate the association between race and the negative predictive value of PI-RADS scores on prostate mpMRI.

Methods: Under an IRB-approved database, patients who had an mp-MRI of the prostate and a TRUS biopsy within a year were selected. Patients who had a biopsy within 6 weeks before an MRI were excluded. The negative predictive values (NPV) of mpMRI in African Americans (AAs) vs. Caucasians were analyzed for clinically significant cancer (CSC) and for high-grade cancer (HGC). CSC was defined as Gleason score (GS) ≥3+4 and HGC as GS ≥ 4+3 on TRUS biopsy.

Results: 638 patients constituted the study (139 AAs and 499 Caucasians). The mpMRI NPV (PIRADS 4-5 vs 1-3) was higher in Caucasians than in AAs for both CSC (75.1% vs 46.8%, p < 0.0001) and HGC (93% vs. 85.5%, p= 0.005). Upon re-stratifying the PI-RADS scoring considering a PI-RADS 3 as positive on mpMRI (PI-RADS score 3-5 vs PI-RADS 1-2), the NPV again was higher in Caucasians than in AAs for CSC (79.4% vs 50%, p < 0.0001) and HGC (94.4% vs. 89.3%, p = 0.033).
Conclusion: mp-MRI was able to better rule out clinically significant prostate cancer in Caucasians than in AAs. Further investigation and validation are warranted.

Podium #50
OPTIMIZING TECHNIQUES FOR MRI-TARGETED PROSTATE BIOPSY: ESTIMATING MARGINAL DIAGNOSTIC BENEFIT FROM ADDITIONAL BIOPSY CORES
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Presented By: Kevin J. Flynn, MD

Introduction: This study investigated the marginal diagnostic benefit of each additional biopsy core obtained from a region of interest (ROI) during MRI-targeted prostate biopsy (FBx) to maximize detection of prostate cancer (PCA).

Methods: Over 4-months at 1 institution, patients undergoing FBx were prospectively enrolled. ROI’s rated PI-RADS≥3 were biopsied 5 times, each core numbered sequentially and assessed individually, followed by a systematic 12-core biopsy. The marginal value of each targeted biopsy was determined using the first core containing the maximal Gleason Grade Group (GGG) within the systematic and 5 targeted prostate biopsies. The cumulative rate of positive biopsies cores was stratified by GGG. Analysis was performed on a lesion and then patient level.

Results: 51 consecutive patients, with 97-ROIs rated PI-RADS≥3 underwent FBx, primarily for elevated PSA:(80%). MRI-targeted biopsies reclassified the GGG of PI-RADS:3 and ≥PI-RADS 4 lesions compared to systematic biopsy in 8% and 36%, respectively. No MRI-targeted cores of PI-RADS≥4 lesions reclassified patients to GGG≥4. One targeted biopsy of a PI-RADS≥4 increased PCA detection rate from 52% to 58%, and GGG≥4 increased from 3.0% to 6.1%. After 5 targeted biopsies, the cancer rate was 70% and rate of GGG ≥4 increased to 21%. (Figure)

Conclusion: To optimize PCA detection, ROI’s rated PI-RADS≥4 should be biopsied 4-5 times.
Podium #51
UTILIZATION OF SALVAGE RADIATION THERAPY (SRT) FOR BIOCHEMICAL RECURRENCE AFTER RADICAL PROSTATECTOMY (RP)
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Presented By: Scott R. Hawken, MD, MS

Introduction: For men with biochemical recurrence after radical RP, SRT is a potentially curative option. However, its utilization in clinical practice is not well-defined. We examined factors associated with SRT utilization and variation in administration across diverse urology practices.

Methods: Patients with localized prostate cancer (PCa) undergoing RP at 33 practices in the Michigan Urological Surgery Improvement Collaborative (MUSIC) were prospectively followed between 2012-2016. Eligible patients had ≥1 post-RP PSA ≥0.1ng/ml. SRT utilization, clinical and pathologic patient characteristics were examined. Associations with SRT use were analyzed using logistical regression modeling.

Results: Of 1017 eligible patients, only 29.7% underwent SRT; 16.7%, 5.2%, 3.3%, and 4.5% underwent SRT at PSA-levels of 0.1-<0.5, 0.5-<1.0, 1.0-<2.0, and ≥2.0ng/mL, respectively. After adjusting for patient and practice-level factors, higher maximum post-RP PSA, positive surgical margins, higher T-stage, and higher grade group were associated with SRT use (all p<0.05). After adjusting for patient and tumor characteristics, there remained significant variation in the adjusted rate of SRT utilization across practices, ranging from 3.5%(95%CI:0.5-15%) to 74%(95%CI:35-94%,p<0.001)(Figure).

Conclusion: Of men with detectable PSA post-RP, one in six received early SRT, with significant variation in practice-level SRT utilization not explained by patient factors alone. Characteristics suggesting higher-risk disease were predictors of SRT administration. These data support the potential to expand SRT use, particularly among low utilization sites.

Podium #52
CORRELATING MULTI-PARAMETRIC MAGNETIC RESONANCE IMAGING PI-RADS SCORE WITH PROSTATE VOLUME
Hannah Levine, MS1, Amr Mahran, MD1, Christina Buzzy, PhD2, Irina Jaeger, MD1, Vikas Gulani, MD, PhD1 and Lee Ponsky, MD1
1University Hospitals Cleveland Medical Center; 2Case Western Reserve University School of Medicine
Presented By: Amr Mahran, MD

Introduction: It has been suggested that aggressive prostate cancer arises in smaller prostates rather than large ones. Our objective was to examine the correlation between different prostate volumes (PVs) and PI-RAD scores from multiparametric MRI (mpMRI).

Methods: Under an IRB approved study, a chart review of 739 who had undergone mpMRI for prostate cancer between July 2014 and June 2017 was conducted. Patients were divided into four PV groups: < 20, 20-40, 40-80 and > 80 cc. A final PI-RADS score was assigned to each patient based on the highest PI-RADS lesion. PVs were obtained from the mpMRI.
**Results:** The median PV was 44.1 IQR (6.7-342.6) cc. Relative to other PI-RADS scores, PI-RADS score 5 showed the highest proportion in smaller prostates, 40.8% and 33.2% in PVs < 20 cc and 20-40 cc, respectively. The proportion of PI-RADS 5 decreases gradually with increasing volume until it reaches 14.8% in patients with prostates > 80cc (p < 0.001). Using one-way Anova, there was a significant correlation between prostate PI-RADS and PV (p < 0.0001). Further post-hoc analysis showed significant difference between PI-RADS 5 vs PI-RADS 3 and 2 (p < 0.0001) and PI-RADS 4 vs PI-RADS 3 and 2 (p= 0.01 and 0.002; respectively).

**Conclusion:** Study results suggest that there is a significant correlation between mpMRI PI-RADS score and prostate volume. Moreover, there is an association between PI-RADS 5 score and smaller prostates. This association reflects that lesions occurring in small prostates tend more likely to harbor clinically significant prostate cancer.

**Podium #53
USE OF STATINS IN COMBINATION WITH ANDROGEN DEPRIVATION THERAPY IN PATIENTS WITH ADVANCED PROSTATE CANCER: IMPACT ON ONCOLOGICAL OUTCOMES**

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Presented By: India Anderson-Carter, BS

**Introduction:** De-regulation of androgen synthesis is crucial in the development of castrate resistant prostate cancer (PCa). The proposed anti-neoplastic properties of statins suggest a possible role for preventing progression of PCa. This study assesses the role of statin use on oncologic outcomes in patients with advanced PCa treated with androgen deprivation therapy (ADT).

**Methods:** The national Veterans Affairs database identified men diagnosed with PCa from 2000-2008 with follow-up through May 2016 treated with ADT for ≥ 6 months. Patients were stratified based on statin use of ≥ 6 months during the same time period. Cox proportional hazards ratios were calculated for overall survival (OS), skeletal-related events (SRE) and cancer-specific survival (CSS).

**Results:** Statin users were younger (73 vs. 76), more likely to have a Charlson Comorbidity Index (CCI) >3 (3.1 vs 2.5%) and high grade (Gleason score 8-10) cancer (12.3 vs. 10.9%), p<0.001. Statin users had longer OS (6.50 vs 3.95 years), decreased death from PCa (9.0 vs. 12.7%) and longer time to SRE (5.91 vs. 3.67 years), p<0.001.

**Conclusion:** Statin use with ADT in patients with advanced PCa is associated with improved OS, SRE, and CSS. Adding to existing literature, our study is the largest to date assessing statin use specifically in the setting of ADT.

![Cox Proportional Hazards Analysis Adjusting for Age, Race, CCI, PSA and Gleason Score](image_url)
LONG-TERM FOLLOW-UP FROM STAMP, A PHASE 2 TRIAL, EVALUATING SIPULEUCEL-T AND CONCURRENT VS SEQUENTIAL ABRIRATERONE ACETATE + PREDNISONE IN METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (mCRPC) PATIENTS

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Presented By: Thomas A. Gardner, MD, MBA

Introduction: In the phase 2 STAMP trial (NCT01487863), sipuleucel-T was evaluated in combination with concurrent (CON) or sequential (SEQ) abiraterone acetate and prednisone (abi) in mCRPC patients. The combination was well tolerated and did not alter the immune response parameters that correlate with overall survival (OS) (Small Clin Can Res 2015). Here, we present long-term follow-up of the clinical outcomes.

Methods: Patients were randomized 1:1 to receive sipuleucel-T with CON abi (starting 1 day after sipuleucel-T initiation) or SEQ abi (beginning 10 wks after sipuleucel-T initiation) for 26 wks, after which continued abi was permitted. Long-term clinical outcomes included OS, disease-specific survival (DSS), progressive disease (PD), time to first anticancer intervention (tACI), and safety.

Results: Sixty-nine patients were enrolled (35 CON; 34 SEQ), with a median follow-up of 36.2 months. Median OS was 34.0 mo (95% CI, 24.4 – not estimable [NE]; 30.0 mo CON; 34.2 mo SEQ; p=0.921), and median time to DSS was not reached (CON vs SEQ; p=0.733). Median time to PD was 17.3 mo (95% CI, 9.7 – NE; 17.7 mo CON vs 13.9 mo SEQ; p=0.914). tACI was similar between arms at 15.4 mo (95% CI, 11.0 – 19.9). No new safety signals were observed with the combination.

Conclusion: Long-term data confirm that sipuleucel-T + CON or SEQ abi is well-tolerated, with no clear differences in clinical outcomes between arms, although the study was not powered to detect these differences. More appropriately powered studies may provide further insights on the benefit of the combination.

DOES INCREASING THE NUMBER OF TARGETED BIOPSY CORES INCREASE PROSTATE CANCER DETECTION RATES DURING MRI-US FUSION BIOPSIES?

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Presented By: Vidit Sharma, MD

Introduction: Increasing the number of cores in non-targeted template biopsies may increase prostate cancer(PCa) detection. However, in MRI-US fusion biopsies, the impact of additional targeted cores per lesion on PCa detection remains understudied.

Methods: Men undergoing software-assisted MRI-US fusion prostate biopsies (2010-2017) were identified. The relationship between number of targeted cores, prostate volume, and PCa detection was modeled on a per-lesion basis using interaction terms in multivariable logistic regressions adjusting for age, family history, PSA, cT-stage, prior biopsy, and PIRADSv2 score.

Results: Among 710 men with a median prostate volume of 47cc(interquartile range 35-67), 888 PIRADSv2 lesions were biopsied using a median of 6(interquartile range 4-6) targeted cores per lesion. Increased prostate volume was associated with lower PCa detection from targeted cores on logistic regression(Odds Ratio (OR) 0.97, 0.95-0.98, p<0.01). The
interaction term between the number of targeted cores and prostate volume was significant (OR 1.003, 1.000-1.005, p=0.05), suggesting that the association between number of targeted cores and PCa detection was contingent on prostate volume. Youden’s J statistic identified a 49cc prostate volume as the most discriminatory threshold with respect to PCa detection rates. In prostates <49cc(N=498), increasing number of targeted cores was not associated with PCa detection on logistic regression(OR 1.03, 0.92-1.16, p=0.57). In prostates >=49cc(N=390), increasing number of targeted cores was associated with increased PCa detection on multivariable logistic regression(OR 1.14, 1.003-1.30, p=0.04).

**Conclusion:** Increasing the number of targeted cores per lesion may be a viable strategy to improve PCa detection of MRI-US fusion biopsies in prostates >49cc’s.

**Podium #56**

**CHANGES IN A 17-GENE PROSTATE CANCER RISK STRATIFICATION ASSAY OVER TIME IN MEN ON ACTIVE SURVEILLANCE: EARLY OBSERVATIONS ON THE ACCURACY OF SERIAL BIOLOGICAL MONITORING**

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**Presented By:** Anna E. Faris, BA

**Introduction:** We sought to determine the evolution of prostate cancer as captured by serial measures of Genomic Prostate Score (GPS) and Likelihood of Favorable Pathology (LFP) at prostatectomy.

**Methods:** Patients with a 17-gene GPS(scored 0-100) were identified(5/2014-9/2016). Oncologic characteristics (Gleason score, clinical stage, biopsy results, PSA levels) and treatment status were recorded. Analyses utilized Wilcoxon rank-sum, chi squared, Fisher’s exact, and Wilcoxon signed-rank tests.

**Results:** Forty-nine patients with ≥2 GPS measures had a median primary GPS of 21[IQR=16.5,26.5] and LFP of 79[74.5,83.5]. Single GPS measurement patients(n=463) did not differ from those with multiple GPS measures(n=49) by GPS, LFP, PSA or PSA density at initial assayed biopsy. Median change in GPS between serial measurements(∆GPS) was an increase of 2[-2, 9] while ∆LFP revealed a decrease by -4.5[-13,1.75]. Time between serial scores was 1.32[0.8,1.96] years. Eighteen patients(36%) had an increase in NCCN risk between biopsies. Grouping by degree of NCCN reclassification, ∆GPS did not vary(p=0.88), however ∆LFP intensified with risk advancement: unchanged NCCN risk(∆LFP=-0.5[-6,3]), reclassified from very low to low(-26.5[-28,-8] n=5), low to intermediate(-21[-26,-13] n=7), and very low to intermediate risk(-36.5[-39,-28.5] n=4);(p<0.0001). Comparing serial scores of those with no change in NCCN risk revealed that neither serial GPS nor LFP changed significantly(p=0.09 and p=0.52 respectively).

**Conclusion:** NCCN risk advancement correlated with significant decreases in LFP, suggesting GPS parameters may reflect shifting tumor pathology. Accordingly, in the absence of NCCN reclassification repeated GPS and LFP measurements were stable. These data suggest that this tool accurately tracks changes in tumor biology over time.

**Podium #57**

**ASSOCIATION OF BURIED PENIS WITH THE DEVELOPMENT OF PENILE CANCER IN CIRCUMCISED MEN**

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**Presented By:** Ahmad Alzubaidi, MD

**Introduction:** The purpose of this study was to retrospectively review a 10-year experience with penile cancer (PeCa) at a single institution to determine how the presence/absence of preputial skin and of a buried penis is associated with contemporary penile cancer development.
Methods: The University of Iowa (UI) Oncology Registry was retrospectively reviewed for cases of PeCa managed between 2006-2016 and database queried for cancer specific details, followed by an in-depth chart review for body morphology data and comorbidity status.

Results: Average age 64.3 ± 12.9 years and BMI 35.6 ± 9.2 of the 54 total PeCa patients were similar between the patients with (n=27) and without (n=27) known pre-pubertal circumcision (Table). The presence of a clinically buried penis by physical exam was significantly more common in the patients with prior circumcision. However, those with an intact prepuce appeared more likely to present at a later stage.

Conclusion: Half of all treated PeCa patients had a neonatal circumcision history, challenging the conventional wisdom that circumcision alone is protective. As most of these men were obese and many had an acquired buried penis, it is likely that their acquired genital anatomy mimics that of the prepuce, leading to an environment where PeCa development is possible.

Podium #58
DEVELOPMENT AND VALIDATION OF A NOVEL URETHRAL STRICTURE STAGING SYSTEM
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Presented By: Kevin J. Flynn, MD

Introduction: Urethral strictures are a heterogeneous condition. Differences in stricture length, location, and etiology impact treatment choice and outcomes. This study sought to validate a staging system developed to improve the ability of our multi-institutional research group to study outcomes of urethral stricture disease.

Methods: The staging system contains three components obtained from patient history and retrograde urethrogram (RUG) that independently impact surgical choice and outcome: Urethral Location (U), Stricture Length (L), and Stricture Etiology (E). Figure 1a describes the staging system and Figure 1b is its graphical representation. A web-based survey was distributed and respondents provided a ULE stage to 29 representative RUGS and clinical histories. Interrater reliability was calculated using Light's Kappa (κ) analysis.
Results: Twenty-two urologists, including fourteen reconstructive specialists completed the survey. The overall interrater reliability for ULE-staging system was $\kappa=0.68$, considered to be "substantial" agreement. Individual staging categories had $\kappa$ values of U=0.603, L=0.616, and E=0.808. Strictures thought to involve the penoscrotal junction (U1b vs. U2c) accounted for 7 of the 10 radiographs with $\kappa<0.6$. Ninety-percent of respondents strongly agreed/agreed the ULE staging system was intuitive and would improve inter-urologist communication.

Conclusion: Initial testing of ULE staging system had high interrater reliability. Further efforts will assess correlation of ULE stage with surgical outcomes.
INTERNAL URETHROTOMY WITH INTRALESIONAL MITOMYCIN C FOR BULBAR URETHRAL STRICTURES AFTER FAILED URETHROPLASTY

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Presented By: M. Ryan Farrell, MD, MPH

Introduction: We evaluated direct visual internal urethrotomy (DVIU) with intralesional mitomycin C (MMC) for recurrent bulbar urethral strictures after failed urethroplasty and compared outcomes to DVIU/MMC for failed transurethral procedures.

Methods: We reviewed our institutional database of patients who underwent DVIU/MMC (12/2011-11/2016) for recurrent bulbar urethral strictures after failed urethroplasty or transurethral interventions (dilation, DVIU). Patients were offered urethroplasty but elected for DVIU/MMC or were poor open surgery candidates. DVIU/MMC involved cold-knife incisions at 12-, 3-, 9-o’clock. Intralesional MMC (0.4mg/mL, 10mL total) was injected in 0.2-0.4mL aliquots followed by one month of intermittent catheterization.

Results: Prior to DVIU/MMC, 21 patients failed urethroplasty, 26 failed transurethral management. Failed urethroplasty type included buccal mucosa graft (n=10), excision and primary anastomosis (n=9), labial graft (n=1), penile skin graft (n=1). Mean recurrent stricture length: 1.8cm (range 1.0-3.0cm) for failed urethroplasty cohort, 1.6cm (range 0.5-3.0cm) for failed transurethral treatment (p=0.86). Median follow-up after DVIU/MMC was similar for failed urethroplasty (31.1mo, IQR 23.4-54.1mo) and failed transurethral cohorts (38.0mo, IQR 23.1-58.4mo; p=0.34). Stricture recurrence requiring an additional procedure after DVIU/MMC occurred in 19.0% of failed urethroplasty and 38.5% of failed transurethral cohorts (p=0.20). Median time to recurrence after DVIU/MMC was longer among failed urethroplasty cohort compared to failed transurethral cohort (23.4mo, IQR 7.7-39.0mo vs. 10.6mo, IQR 2.7-18.4mo; p<0.05). No complications resulted from MMC.

Conclusion: While revision urethroplasty remains the gold standard, DVIU/MMC is an option for recurrent, short bulbar strictures after failed urethroplasty - particularly among poor open surgical candidates and those electing to avoid more definitive open surgery.
Podium #61
IMPACT OF LOW TESTOSTERONE LEVEL ON OUTCOMES OF URETHROPLASTY FOR URETHRAL STRicture DISEASE
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1Northwestern; 2Case Western Reserve University
Presented By: Lauren Folgosa Cooley, MD, PhD

Introduction: Testosterone (T) is important for urethral development and low T is associated with formation of urethral stricture. While we have previously demonstrated that low T is associated with erosion following artificial urinary sphincter placement, our current aim was to identify whether low T level also impacts urethral healing and stricture recurrence after urethroplasty.

Methods: A single-institution, retrospective chart review of 24 patients who underwent primary urethroplasty and had a T level available within 2 years of surgery. Mean follow-up was 3.9 years. Low T level defined as <300mg/dl. Chi square and t-tests performed; p<0.05 = significant.

Results: In this study, 9/24 patients (37.5%) had low T (mean 212 ng/dl) of which 1 patient (11.1%) experienced stricture recurrence. In comparison, 15/24 patients (62.5%) had a normal T level (mean 424 ng/dl) and 2/15 (13.3%) experienced stricture recurrence (p=0.87). Overall, mean T level was lower in patients who experienced stricture recurrence following urethroplasty (254 vs 358 ng/dl, p=0.23), although not significant with our current sample size. Low T level was not significantly associated with presence of diabetes, cardiovascular disease, lung disease, time to recurrence, and length or etiology of strictures. Our results were irrespective of type of repair or stricture location.

Conclusion: Low T level was common among patients undergoing urethroplasty and was associated with stricture recurrence, suggesting that low T may impact urethral healing although this difference was not significant. We believe that our cohort size was unable to detect a potential difference and we are currently expanding this research.

Podium #62
INTRALESIONAL MITOMYCIN C IS SAFE AND EFFECTIVE IN THE MANAGEMENT OF BLADDER NECK CONTRACTURE
Mohammed Zaher, DO, Joseph Pariser, MD, Omar Soto-Aviles, MD and Richard Santucci, MD
Detroit Medical Center
Presented By: Mohammed T. Zaher, DO

Introduction: The optimal treatment of bladder neck contractures (BNC) remains unclear. There is ongoing debate about the utility and safety of mitomycin C (MMC) injection at the time of internal urethrotomy (DVIU). We sought to examine our experience with a standardized low dose of adjuvant MMC during endoscopic treatment for BNC.

Methods: Between February 2012 and August 2017, the endoscopic management of BNC at our institution was DVIU with injection of MMC into the scar. Treatment success was considered as no further surgical interventions or catheterization with at least one year of followup. Procedures were categorized by how many prior injections of MMC were performed.

Results: In total, 77 DVIU with MMC were performed in 38 patients. The median age was 64 years. The causes of BNC included radical prostatectomy (53%), transurethral resection (42%), and radiation (38%). Success rates for each individual DVIU with MMC injections ranged from 32-42% for the first 3. No DVIU with MMC were successful after 3 prior injections (n=5). Ultimately, success was seen with 24 patients (63%) with 11 patients (29%) were excluded for inadequate followup. Median time to recurrence was 117 days. Three patients ultimately failed endoscopic management and underwent bladder neck reconstruction or chronic suprapubic tube.

Conclusion: Most patients can experience success with MMC, though often requiring multiple injections. The success rate remains relatively stable over the first three injections. Contrary to some previous reports, no patients experienced any serious events from MMC, perhaps due to standardized low dosing.
Podium #63
USE OF RECTAL MUCOSA IN AUGMENTATION URETHROPLASTY: AN EARLY SERIES
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Presented By: M. Francesca Monn, MD, MPH

Introduction: Traditionally buccal mucosa is used for graft material in augmentation urethroplasties. Pain and sensitivity associated with these grafts is commonly reported following surgery. Rectal mucosa has been described in the setting of long grafts and is associated with lower morbidity. We sought to evaluate the feasibility of use of rectal mucosal grafts for augmentation urethroplasty.

Methods: A series of five patients who underwent rectal mucosal graft urethroplasty for urethral stricture disease were identified. Descriptive statistics were used to describe these patients. Primary endpoints were recurrence of stricture and perioperative morbidity.

Results: Five patients underwent rectal mucosal graft augmentation urethroplasty. Four had a history of prior BMG urethroplasty and one had a history of head and neck cancer. Patient and surgical details are below. Rectal mucosa was noted to be thinner and required more tailoring than buccal mucosa. All patients had patent urethras at time of retrograde urethrogram 4 weeks postoperatively (Image). A small diverticulum was noted in one patient with no further sequelae. No complications from rectal mucosal graft harvest were noted. All patients with prior buccal grafting subjectively preferred the rectal graft due to fewer side effects.

Conclusion: Rectal mucosal graft augmentation urethroplasty is a safe alternative in patients with contraindications to buccal grafting with limited morbidity.

Podium #64
PARTIAL ORCHIECTOMY AND UTILIZATION PATTERNS IN THE TESTIS CANCER NATIONAL CANCER DATABASE
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Medical College of Wisconsin
Presented By: Michael A. Moriarty, MD

Introduction: Partial orchiectomy (PO) is rarely utilized in the management of testis cancer. The current literature is characterized by single institution experiences. The goal of this study is to review the utilization of partial orchiectomy and associated therapies for the management of germ cell tumors (GCT) in the National Cancer Database.
Methods: Our analysis included all adult patients with non-metastatic GCT’s as their first malignancy in the NCDB from 2004-2015. Patients were characterized by standard demographic data, socioeconomic indicators, and pathologic variables. A matched case-control cohort of patients who underwent radical orchectomy (RO) was created based upon age, race, tumor size, node status, histology, Charlson-Deyo Score to compare rates of adjunct therapy.

Results: 130 patients were identified who underwent PO for GCT. Mean age of diagnosis was 37.0 years. The most commonly reported races were “white” (87.7%) and “black” (8.5%). 77.6% of cases were performed at community cancer centers and 20.4% performed at academic centers. Mean tumor size was 2.5 cm. When compared to our matched RO cohort there was no difference in rates of RPLND (8.5% v. 11.9%, p=0.37), chemotherapy (31.4% v. 33.3%, p=0.75), or radiotherapy (28.8% v. 29.4%, p=0.92). A positive surgical margin was present at a higher rate in the PO group (7.5% v. 1.7%, p=0.04).

Conclusion: Partial orchectomy is a rarely utilized procedure. This is the first study to characterize the procedure and patients who undergo it across a national database. In a matched RO cohort there is no difference in rates of adjunct therapy.

Podium #65
ANTIMICROBIAL PROPHYLAXIS MAY BE UNNECESSARY AFTER URETHROPLASTY
Adarsh Manjunath, MD1, Chris Gonzalez, MD, MBA2 and Matthias Hofer, MD, PhD1
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Presented By: Adarsh Manjunath, MD

Introduction: Bacterial colonization and urinary tract infection (UTI) after urethroplasty may impede wound healing, for which patients receive postoperative antibiotics. We analyzed the frequency of bacterial colonization and UTIs after urethroplasty and the impact on urethral and incisional healing.

Methods: Patients undergoing urethroplasty by a single surgeon from 2000-2012 were retrospectively reviewed, including urine cultures within 30 days of urethroplasty, and rates of stricture recurrence and delayed wound healing. A positive culture was defined as >1,000 cfu/mL of an organism.

Results: 398 patients were identified with a mean age of 42.9 years. Mean urethral stricture length was 5.3cm (range 1-24cm). 164 patients (41.2%) underwent excision and primary anastomosis repair and 234 (58.8%) underwent substitution urethroplasty. All patients received preoperative antibiotic prophylaxis and postoperative prophylaxis with trimethoprim/sulfamethoxazole DS for 30 days or until decatheterization. We identified 102 positive urine cultures (25.6%) - 63 (61.8%) treated and 39 (38.2%) deemed to represent colonization. There were 75 stricture recurrences (18.8%) with a 52.5 month average follow-up. 16 patients (15.7%) had a stricture recurrence of 102 with positive cultures. 59 patients (19.9%) had a recurrence of 296 with a negative culture (p=0.34). Delayed wound healing including fistula and erosion was present in 18 patients (4.5%) - 6 with positive cultures compared to 12 with negative cultures (5.9% vs. 4.1%, p=0.43).

Conclusion: A quarter of patients after urethroplasty experience colonization or UTIs despite antimicrobial prophylaxis. This, however, does not appear to impair urethral or wound healing. This would suggest that prophylactic antimicrobial therapy could be omitted postoperatively.

Podium #66
ETIOLOGY OF ERECTILE DYSFUNCTION AND DURATION OF SYMPTOMS IN PATIENTS UNDERGOING PENILE PROSTHESIS: A SYSTEMATIC REVIEW
Joseph Mahon, MD1, Martha Faraday, PhD2 and Kevin McVary, MD1
1SIU; 2AUA
Presented By: Kevin T. McVary, MD, FACS

Introduction: The association between ED and comorbid conditions is known, while less is known about the etiology of ED in patients that proceed to prosthesis (PP). The time spent utilizing inadequate therapies for ED represents lost QoL years, yet little is known
about the duration ED and time to PP surgery. We performed a systematic review to assess the etiology and duration of ED prior to implantation.

**Methods:** We performed Pubmed, Embase, and Cochrane searches for articles published between 1/1/65-7/20/16 to identify articles reporting the use of prostheses to treat ED.

**Results:** We reviewed 113 articles that constituted 150 study arms (SA). Of the 150 SA, only 19 reported ED symptom duration. For IPP, symptom duration was mean 56 mos; for malleables, it was 72 mos. Among men who underwent IPP post-RP, duration was 38.7 mos. Among SA that reported on IPP, the most frequently reported ED etiology was diabetes (61 SA; R:12.8-77.8%; M:28.3%) followed by a history of pelvic surgery or trauma (49 SA; R:0.5-49.7%; M:20.3%), and vascular disease (47 SA; R:2.9-62%; M31.9%). Among SA that reported on malleable models, the most frequently cited ED etiologies also were diabetes (9 SA;R:17-50%; M3.7%), pelvic surgery or trauma (8 SA; R:8.8 - 38%; M:22%), and vascular disease (8 SA; R:11-65%; M:37.3%).

**Conclusions** Most men undergoing PP have ED due to organic etiology, while other common causes include modifiable risk factors. Mean duration symptoms range from 3 to 6 years, highlighting the need to address symptoms without a delay in treatment.

**Podium #67**

**INCREASING ADIPOSE BURDEN WITH CYTOTOXIC CHEMOTHERAPY IN YOUNG MEN WITH METASTATIC TESTICULAR CANCER**

Karan Arora, BSc, Caroline Kato, MD, Kunnal Batra, MD, Michael Mullane, MD, Thomas Lad, MD and Sarah Psutka, MD

John H. Stroger, Jr. Hospital of Cook County

Presented By: Karan Arora, BSc

**Introduction:** Our objective was to precisely describe changes in adiposity and lean muscle mass in patients with metastatic testicular cancer (mTCa).

**Methods:** A retrospective analysis of 14 patients with mTCa was performed. Lumbar skeletal muscle index (SMI, cm²/m²), visceral (VAI), subcutaneous (SAI), and intramuscular adipose (IAI) indices, as well as muscle density (HU) and fat mass index (FMI, kg/m²) were calculated using cross-sectional measurements on pre- and post-CC CT scans and compared using paired Wilcoxon Signed Rank Tests.

**Results:** Median time between CT scans was 4 months. Tumor stage was IS, II and III in 1, 3, and 10 patients respectively. Median pre- and post-CC BMI were 26.5 and 26.5 (p=0.6). Median pre- and post-CC SMI, VAI, SAI, and IAI were 61.6 vs 57.3 (p=0.08), 21.1 vs 16.7 (p=0.09), 47.7 vs 48.1 (p=0.17), and 3.7 vs 5.1 cm²/m² (p=0.04) respectively. Pre- and post-CC muscle density was 48.5 vs 44.5 HU (p=0.01) and FMI was 6.54 vs 7.34 kg/m² (p=0.01). Median %change in FMI post-CC was +12.4% (FIGURE). Change in FMI was not associated with CC delays, missed cycles, or CTCAE grade >3 complications.

**Conclusion:** While BMI and lean muscle mass remained stable, we observed significant increases in total body adipose mass with decreased muscle density in patients following CC for mTCa.
**Podium #68**

**DOES PRIMARY SITE LOCATION IMPACT THE MANAGEMENT OF LOWER-RISK SQUAMOUS CELL CARCINOMA OF THE PENIS?**  
Ross Everett and Scott Johnson, MD  
Medical College of Wisconsin  
Presented By: Ross G. Everett, MD, MPH

**Introduction:** Partial penectomy (PP) or radical penectomy (RP) remains the gold standard for penile cancer not amenable to penile sparing surgery (PSS). However, for lower risk lesions, PSS is a recommended strategy. Previous analysis has shown PSS is often utilized appropriately. This study aimed to investigate practice patterns regarding PSS, PP, and RP with respect to patient and disease characteristics, particularly tumor location.  

**Methods:** Utilizing the National Cancer Data Base (NCDB), men diagnosed with cTa, cTis, cT1a, and cT1b penile squamous cell carcinoma between 2004-2015 were included. Cohorts were based on location, specifically prepuce, glans, or penile body. Patient demographics and intervention data were compared. Multinomial logistic regression was used to determine factors associated with each intervention.  

**Results:** 1,090 men were included, with 325 (29.8%) tumors of the prepuce, 598 (54.9%) of the glans, and 167 (15.3%) of the penile body. Tumors of the glans had significantly more lymphovascular invasion (LVI) (4.7%), compared to prepuce (1.9%), or penile body (1.2%). The risk of undergoing PP compared to PSS increased with glans location (RR 3.13, p<0.01), cTa stage (RR 2.21, p=0.04), cT1 (RR 4.67, p<0.01), and LVI (RR 3.44, p=0.01). The risk of undergoing RP compared to PSS increased with cT1 stage (RR 6.74, p<0.01) and LVI (RR 5.15, p=0.01).  

**Conclusion:** Tumor location of the glans was the only location associated with increased risk of PP in our analysis. LVI and advanced stage are associated with increased risk of PP and RP.  

**Podium #69**

**SURGICAL OUTCOMES OF PLAQUE EXCISION AND GRAFTING AND SUPPLEMENTAL TUNICA ALBUGINEA PLICATION FOR TREATMENT OF PEYRONIE’S DISEASE WITH SEVERE COMPOUND CURVATURE**  
Alexander Chow, MD, Steven Sidelsky, PharmD and Laurence Levine, MD  
Rush University Medical Center  
Presented By: Alexander Chow, MD

**Introduction:** There is limited data in the literature that describes the management of PD with severe compound curvature (CC) which often requires additional straightening procedures to achieve functional penile straightening (< 20 degrees). This study highlights the clinical distinction and our experience with men with PD and CC treated with PEG and supplemental tunica albuginea plication (TAP).  

**Methods:** We performed a retrospective chart review of patients with PD and acute angulation (AA) who underwent PEG and patients with CC who underwent PEG with TAP between 2007 - 2016. Primary postoperative outcomes of interest include change in penile curvature, change in measured stretched penile length (SPL), and subjective report on penile sensation and sexually induced penile rigidity.  

**Results:** 79(33%) patients with AA underwent PEG and 161(67%) with CC underwent PEG and TAP. The average primary curvature was 73(20-120) degrees for AA and 79(35-140) degrees for CC (p = 0.01). Men with CC had an average residual curvature of 30(20-50 degrees) after PEG which required 1-6 TAP’s to achieve functional straightness (< 20 degrees). At follow-up of 61 months, there was no difference for AA and CC respectively for recurrent curvature (11.4% vs 12.4%,p =0.33), change in SPL (+0.57 cm vs +0.36 cm, p = 0.27), decreased penile sensation (6% vs 13%,p = 0.12), and ability to engage in penetrative sex (81% vs 79%,p =0.73).  

**Conclusion:** Men with CC represent an under-recognized population of men with PD who can be surgically corrected with PEG and supplemental TAP(s) without jeopardizing post-operative functional outcomes.
Podium #70
WHICH SEXUAL DYSFUNCTIONS ARE MOST ASSOCIATED WITH RELATIONSHIP DISTRESS?
Jack Andrews, MD, Mathew Ziegelmann, MD, Manaf Alom, MBBS, Mary E. Westerman, MD, Kevin Hebert, MD and Landon Trost, MD
Mayo Clinic
Presented By: Jack Andrews, MD

Introduction: Male sexual dysfunction includes a variety of conditions and can negatively affect relationships. We therefore sought to identify correlations between various types of sexual dysfunction (SD) and their impact on relationships.

Methods: We reviewed data on consecutive men undergoing evaluation for sexual health concerns in a men's sexual health clinic at our institution. To evaluate the interpersonal sexual relationship, men were questioned on whether or not their SD negatively impacted their relationship.

Results: A total of 607 patients had data available on the impact of various SD on their relationship. Of these men, 362 (60%) reported that their SD negatively impacted their relationships. On analysis only perceived rapid ejaculation correlated with negative relationship impact (p=0.002), while other sexual conditions were not associated with a negative impact on the relationship (Table 1). Interestingly, shorter relationship duration was also associated with a negative impact (mean 21.9 vs 28.0 years, p<0.0001), suggesting a potentially protective role for longer relationships.

Conclusion: Self-reported rapid ejaculation was the only SD associated with negative impact on the relationship in a cohort of men presenting with a variety of SDs, while erectile dysfunction, orgasmic dysfunction, and hypogonadism were not associated. Relationship duration may have a protective role on distress associated with SD.

<table>
<thead>
<tr>
<th>Table 1: The Effect of Sexual Dysfunction on Relationship Distress</th>
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<tbody>
<tr>
<td>No Negative Impact</td>
</tr>
<tr>
<td>Ejaculate Too Quickly</td>
</tr>
<tr>
<td>Erection Strength (1-10)</td>
</tr>
<tr>
<td>Erection Sustained (minutes)</td>
</tr>
<tr>
<td>Intercourse Frequency (per month)</td>
</tr>
<tr>
<td>Libido (0-10)</td>
</tr>
<tr>
<td>Testosterone Level (250-800)</td>
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<tr>
<td>Inability to Orgasm</td>
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<tr>
<td>No Ejaculate with Orgasm</td>
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Podium #71
TWO YEAR COST ANALYSIS OF PENILE REHABILITATION POST-PROSTATECTOMY FOR VARIOUS REGIMENS AT A SINGLE INSTITUTION
Mehul Patel, MD, Matthew Hudnall, MD, James Wren, MD, Anuj Desai, MD, Lauren Cooley, MD, PhD, Minh Pham, MD, Mary Kate Fitzgerald, MPH, Robert Brannigan, MD and Nelson Bennett, MD
Northwestern University
Presented By: Mehul Patel, MD

Introduction: Penile rehabilitation (PR) following radical prostatectomy promotes better recovery of erectile function (ED). However, patient adherence to PR is poor (60-70%), frequently due to high medication costs. This study evaluates costs associated with standard PR regimens.

Methods: Four urologists at our institution were surveyed regarding their preferred PR regimen as well as alternatives if ineffective or cost-prohibitive. Prices were obtained from manufacturer pricing (from Epocrates) and our preferred compounding pharmacy. For cheaper alternatives, pricing was obtained from an offshore pharmacy. Costs over two years were calculated. Insurance coverage was not incorporated as it rarely covers ED medications.

Results: Four distinct protocols (15 regimens) were found. Cost varied significantly from $2,359 to $21,680 (Table 1). The average cost of preferred regimens was $11,416. If ineffective, the alternative regimens were more expensive at $13,678. If cost-prohibitive,
using an offshore pharmacy decreased costs of the preferred and alternative regimens to $5,957 and $6,495, respectively.

**Conclusion:** Two year costs for PR vary considerably and can be prohibitively expensive. These costs can be mitigated by using compounding or offshore pharmacies. This pilot study is the first of its kind to assess cost associated with PR regimens. This information can be used to improve pre-operative counseling which may reduce dropout rates due to cost.

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**Podium #72**

**INFECTIOUS ADVERSE EVENTS OF PENILE PROSTHESES: A SYSTEMATIC REVIEW.**

Joseph Mahon, MD\(^1\), Martha Faraday, PhD\(^2\) and Kevin McVary, MD\(^1\)

\(^1\)SIU; \(^2\)AUA

Presented By: Kevin T. McVary, MD, FACS

**Introduction:** Through advances in technique and device engineering prosthesis (PP) infectious rates have decreased over time. To gain a further understanding of current factors influencing infectious adverse events (AEs) following PP, we performed a systematic literature review.

**Methods:** We performed Pubmed, Embase, and Cochrane searches for eligible articles published between 01/01/65 and 07/29/17 to identify articles reporting the use of PP to treat ED.

**Results:** A total of 2789 articles were reviewed, of which 267 addressed PP and 91 reported infectious AEs. PP infection rates were 0-24.6% across all series. Inflatable PP displayed a wider range (0-24.6%) than did malleable PP (0-9.1%); but most studies (52/68) reported infection rates <5%. In addition, average infection rates across studies were <5% with the Coloplast Titan model having the lowest average rate at 2.9%. Utilization of both antimicrobial coating and "no-touch" surgical technique decreased infectious AEs, while utilization of both in combination further reduced infections. No difference has been shown between the use of Inhibizone vs. rifampin/gentamicin combinations. Infectious AEs among diabetic men progressively decreased through the reviewed period; the most recent series reported rates similar to those of non-diabetic men. Furthermore, glycosylated hemoglobin was not found to be a predictor of infectious AEs.

**Conclusion:** Overall, PP infectious AEs have decreased as techniques evolved and antimicrobial coatings have been utilized. These advances have demonstrated significant benefit for diabetics who have seen infection rates approach that of non-diabetics.
Podium #73
PATIENT AND PARTNER SATISFACTION RATES AFTER PENILE PROSTHESES SURGERY: A SYSTEMATIC REVIEW.
Joseph Mahon, MD¹, Martha Faraday, PhD² and Kevin McVary, MD¹
¹SIU; ²AUA
Presented By: Kevin T. McVary, MD, FACS

**Introduction:** Setting expectations is critical to postoperative satisfaction rates for patients. Providers counseling for PP often cite high levels of satisfaction, although the body of evidence (BES) supporting these claims are based on observational studies. To better understand how to counsel patients and their partners, we performed a systematic review to assess satisfaction rates after PP surgery.

**Methods:** We performed Pubmed, Embase, and Cochrane searches for eligible articles published between 1/1/65-7/29/17 to identify articles reporting the use of PP. The BES was assigned a strength rating of A (high), B (moderate), or C (low) using the AUA rating system.

**Results:** We reviewed 267 articles; 61 study arms (SA) reported patient satisfaction rates and 22 SA reported partner satisfaction rates after PP surgery. The BES was low (Grade C). The most commonly used outcome measure was the percentage of patients who reported being satisfied with the outcome of PP. The mean satisfaction rate for IPP was 86.2% compared to 72.1% for MP. Older patient age, revision of penoscrotal web, lower preoperative expectations, and higher partner Female Sexual Function Index scores were associated with higher satisfaction rates. Partner dissatisfaction was associated with revisions, insufficient concealment, and a sense of unnaturalness of the device.

**Conclusion:** The evidence regarding patient and partner satisfaction rates is based entirely on observational studies. Satisfaction rates are highest in men undergoing IPP after prostatectomy. Providers should be cognizant of the factors that affect satisfaction at counseling preoperatively to set expectation levels.

Podium #74
AGGLUTINATION: PREVALENCE AND CONTRIBUTORY FACTORS
Garrett Berger, PharmD¹, Luriel Smith-Harrison, MD² and Jay Sandlow, MD²
¹College of Medicine, Medical College of Wisconsin; ²Department of Urology, Medical College of Wisconsin
Presented By: Garrett K. Berger, PharmD

**Introduction:** Agglutination is a finding noted in semen analyses (SAs) that often causes confusion as to its significance. While some have attributed it to antisperm antibodies (ASAs), it is unclear if there is correlation between agglutination and ASAs. Additionally, it is known that patients with ASAs often have risk factors such as a history of scrotal trauma or surgery. Therefore, we sought to determine the prevalence of agglutination in our patient population and correlate it with these risk factors.

**Methods:** A retrospective study was conducted on the SAs of men in our department between January 2017 and February 2018. In addition to the standard SA data, additional gathered data points included: variability between agglutination tests, history of scrotal trauma, and history of scrotal surgery. Statistical analysis was performed using SPSS v24.

**Results:** Of the 1095 charts identified, 12.1% (n=133) experienced agglutination with 61.7% slight, 21.8% moderate and 16.5% excessive. Of patients who underwent multiple SAs, only 2.2% (n=24) showed variability in reported agglutination. Further, patients who underwent scrotal surgery carried 2.8 times the risk for agglutination (X2 p=.003) and 4.2 times the risk for variability (X2 p=.039) as compared to those patients without agglutination.

**Conclusion:** Agglutination is a relatively common finding in men presenting to a reproductive clinic with little intra-patient variability. Scrotal trauma and surgery confers a higher risk of agglutination. While the clinical significance of this has yet to be determined, the presence of agglutination may help discern patients with immunologic fertility factors.
Podium #75
SURGICAL TREATMENT OF PEYRONIE’S DISEASE IN THE OLDER MAN: CHARACTERISTICS AND OUTCOMES
George Abdelsayed, MD, Shaan Setia, MD and Laurence Levine, MD
Rush University Medical Center
Presented By: Shaan Aariyan Setia

Introduction: The prevalence of Peyronie’s Disease (PD) increases with age. We describe our experience with the surgical treatment of PD in men older than 65 years.

Methods: We performed a retrospective review of patients 65 years or older with PD who underwent surgical treatment at our institution from January 2010 to September 2017. We compared characteristics of patients who underwent penile implantation with straightening maneuvers (PP+SM), tunica albuginea plication (TAP) and plaque excision with grafting (PEG).

Results: 86 men had surgery for PD with a mean age of 68. Management included either PP+SM (n=39, 45%), TAP (n=25, 29%) or PEG (n=22, 26%). Men who underwent a PEG had a mean curvature of 79°, higher than men who underwent PP+SM (49°, p<0.001) or TAP (61°, p<0.01). Baseline erectile function was lower in men who underwent PP+SM compared to TAP or PEG (5/10 vs 8/10 vs 9/10 respectively; p<0.01). 97% of men reported to be straight following surgery (95% in PP+SM, 96% in TAP, 96% PEG; p>0.05). 23% of men reported sensory changes (23% in PP+SM, 24% in TAP, 18% PEG; p>0.05). Overall patient reported post-operative satisfaction was 85% (85% in PP+SM, 88% in TAP, 82% PEG; p>0.05). There were 3 reported complications (1 infection, 1 seroma and 1 urinary retention). Mean follow up was 44 months.

Conclusion: Surgical correction of PD in older men is safe, effective and associated with high patient satisfaction. Our outcomes suggest that surgery is a viable option for the properly selected older man with PD.

Podium #76
TESTOSTERONE REPLACEMENT THERAPY IN MEN WITH HYPOGONADAL SYMPTOMS AND LOW-NORMAL TO NORMAL BASELINE TESTOSTERONE
Minh Pham, MD1, Alec Zhu, BA1, Alicia Roston, MPH2, Esther Finney, BA1, Eric Li, BA1, James Wren, MD1, Mary Kate Fitzgerald, MPH1, Lauren Cooley, MD, PhD1, Anuj Desai, MD1, Mehaul Patel, MD1, Matthew Hudnall, MD, MPH1, Nicolas Francone, BS1, Robert Brannigan, MD1 and Nelson Bennett, MD1
1Northwestern University Feinberg School of Medicine; 2University of Illinois College of Medicine
Presented By: Minh Nguyen Pham, MD

Introduction: Testosterone replacement therapy (TRT) is occasionally prescribed to men who do not meet formal criteria for hypogonadism. We seek to compare symptom improvement in men with biochemically low testosterone (225-299 ng/dL) to those with normal testosterone (≥ 300 ng/dL) levels.

Methods: Institutional Review Board approval was obtained to retrospectively review men treated with TRT for complaints of hypogonadal symptoms and an average initial total testosterone (iTT) of ≥ 225. Patients received TRT with subsequent normalization of TT levels. Hypogonadal symptoms were interrogated at follow-up. Multivariate analysis was used to evaluate for predictors of efficacy.

Results: Of 232 men, 32% had iTT ≥ 300. Median treatment duration was 28.1 months (IQR 9.9-54.8). The most common symptoms were low libido (75.1%), erectile dysfunction (74.7%), and lethargy (57.1%); symptoms were comparable between the iTT 225-299 vs. ≥ 300 groups. Factors associated with ≥1 symptoms improving on univariate analysis were younger age, lower body mass index, and iTT ≥ 300. On multivariate analysis, younger age (OR 0.946; p=0.0006) was predictive although iTT (OR 0.606 when iTT was 225-299; p=0.2681) and average post-treatment TT (OR 1.002; p=0.0976) were not. Adverse event rates were comparable and included: prostate biopsy (6%), prostate cancer (3%), polycythemia (5%), venous thromboembolism (3%), and myocardial infarction (1%).

Conclusion: Neither pre-treatment nor post-treatment testosterone levels alone predicted symptomatic improvement in men with sub-normal testosterone levels. These data suggest
a need to improve objective measures of hypogonadism and that other unnamed factors
may be involved in hypogonadal symptomatology.

Podium #77
A NOVEL TECHNIQUE FOR DIRECT VISUALIZATION OF RESERVOIR PLACEMENT
FOR PENOSCROTAL INFLATABLE PENILE PROSTHESES USING A SINGLE INCISION
Joshua D. Roth, MD, M. Francesca Monn, MD, MPH, Thomas M. Shelton, MD and Matthew
J. Mellon, MD
Indiana University School of Medicine Department of Urology
Presented By: M. Francesca Monn, MD, MPH

Introduction: We present a modified technique and outcomes of a novel method allowing
for direct visualization of reservoir placement during a penoscrotal inflatable penile
prosthesis.

Methods: Patients undergoing modified IPP reservoir placement from August 2012 to
March 2015 were identified. The modified technique follows. A deaver retractor is placed
lateral to the penis and over the pubic bone to allow direct visualization of the tissue
overlying the inferior abdomen. After dissecting through superficial layers, the deaver is
slowly advanced, allowing for visualization of the fascia, which is incised. Using blunt
dissection, a space for the reservoir is made between the bladder and pubic bone (Figure
1). The reservoir is then placed safely into this space and the deaver retractor removed.

Results: 157 patients with erectile dysfunction (ED) refractory to medical management were
identified. Causes for ED included post-prostatectomy ED (n=110, 66.7%), organic
impotence (n=41, 24.8%), ED following cystoprostatectomy (=5, 3.0%), ED with peyronie’s
disease (n=3, 1.8%), ED due to spinal cord injury (n=3, 1.8%), ED from priapism (n=2,
1.2%), and ED after pelvic injury (n=1, 0.6%). Patient characteristics and complications are
shown in the table.

Conclusion: The modified technique for placement of an inflatable penile prosthesis
spherical reservoir under direct visualization through a penoscrotal incision is safe and
effective.

Podium #78
UNCERTAIN IMPACT OF ANTI-TNF AGENTS ON MALE FERTILITY: ARE MEN BEING
COUNSELED?
Lauren Cooley, MD, PhD, Isaac Lam, BS, James Wren, MD, Nelson Bennett, MD and
Robert Brannigan, MD
Northwestern
Presented By: Lauren Folgosa Cooley, MD, PhD

Introduction: Men with autoimmune conditions are commonly prescribed anti-TNF agents,
but their potential impact on male fertility is unknown. Given this lack of clarity, our objective
was to see if men receiving anti-TNF agents are: counseled regarding potential for adverse
reproductive effects, screened for anatomic or laboratory abnormalities associated with
infertility, and offered sperm cryopreservation.
Methods: A single-center, retrospective database review analyzing whether 1012 males prescribed an anti-TNF agent between ages 18-45 from 1/1/2008 to 8/1/2017 received: counseling regarding potential fertility risk, a genitourinary exam, varicocele screening, assessment for low libido or ED, testosterone level, semen analysis, sperm cryopreservation. Chi square testing compared proportions; p<0.05 = significant.

Results: Of 1012 men, 10.2% received counseling. Age was not related to likelihood to receive counseling (p=0.77). Receiving counseling significantly increased likelihood to have a genitourinary exam performed, be screened for varicocele, be asked about or endorse low libido or ED, have a testosterone level checked, and have a semen analysis performed (all, p<0.0001). There was no statistical difference in rates of sperm cryopreservation between those who did or did not receive counseling (p=0.7923) and rates of cryopreservation were low: 3.4% (no counseling) and 3.9% (counseling).

Conclusion: The impact of anti-TNF agents on male fertility is unknown, but only 10.2% of men received counseling regarding potential risk to fertility. Those who received counseling were more likely to be screened for anatomic, hormonal, and semen analysis parameters that could impact fertility. Sperm cryopreservation was rarely offered suggesting prescribers may be unaware of this option.

Podium #79
EVALUATION OF PRE-BIOPSY RECTAL SWABS, AUGMENTED ANTIBIOTICS, AND FORMALIN NEEDLE DISINFECTION ON RATES OF TRANSRECTAL PROSTATE BIOPSY COMPLICATIONS
Christopher Russell, MD1, Khurshid R. Ghani, MB, BCh2, Ji Qi, MS2, Susan Linsell, MHSA2 and John T. Wei, MD2
1University of Michigan; 2Department of Urology
Presented By: Christopher M. Russell, MD

Introduction: Numerous strategies have been proposed to decrease sepsis related complications associated with transrectal prostate biopsy (TRPB). We assessed our institutional biopsy related complications following the implementation of augmented antibiotics, rectal swab culture-directed antibiotics, and use of formalin needle disinfectant technique.

Methods: Patients undergoing TRPB were identified by reviewing a prospectively maintained database. The use of augmented antibiotics and rectal swab culture-directed antibiotics was introduced in 2013. Formalin needle disinfectant technique following each biopsy core was introduced in 2016. Post-biopsy complication rates following implementation of augmented/culture-directed prophylaxis (2013-2015) and after addition of formalin needle disinfectant technique (2016) were compared to complication rates prior to modification of our biopsy protocol (2012).

Results: A total of 2,549 patients underwent TRPB during a 5-year period. In 2012, prior to protocol modification, infectious complications occurred in 1.9% of patients, consisting of sepsis in 0.63%, UTI in 0.63%, and post-biopsy fever in 0.63%. Following the introduction of rectal swabs and augmented antibiotics in 2013, 63.23% of patients received culture directed antibiotics and 13.7% received augmented IV/IM prophylaxis. Between 2013 and 2015, sepsis, UTI, and post-biopsy fever rates were 0.28% (p=0.29), 0.98% (p=0.75), and 1.54% (p=0.29), respectively. In 2016, following implementation of both rectal swabs and formalin needle disinfectant technique, rates of sepsis, UTI, and post-biopsy fever were 0.00% (p=0.08), 0.37% (p=0.62), and 1.24% (p=0.53), respectively.

Conclusion: Following incorporation of both culture-directed antibiotics and formalin needle disinfectant technique, a very low rate of sepsis was achieved in our institution. This regimen has the potential to dramatically reduce or eliminate post-biopsy sepsis.
**Podium #80**

**MR IMAGING OF PROSTATE CANCER SHOWS REDUCED ENHANCEMENT KINETIC CURVES IN MEN ON 5-ALPHA REDUCTASE INHIBITORS: IMPLICATIONS FOR CANCER DETECTION**

Shivashankar Damodaran, MD, Brady Miller, MD, MPH, Lori Mankowski Gettle, MD, Kelcz Frederick, MD, PhD, Glen O. Allen, MPH, Kyle A. Richards, MD, E. Jason Abel, MD, Tracy Downs, MD and David Jarrard, MD

University of Wisconsin

Presented By: Brady L. Miller, MD, MPH

**Introduction:** 5-Alpha Reductase Inhibitors (5ARI) produce duration-dependent changes in blood flow, total volume (TV) and zonal volume (ZV) of the prostate. The goal of the study was to determine if 5ARI use increases the conspicuity of PC on MRI, especially in the background of BPH.

**Methods:** Retrospective study of 217 biopsy-proven cancer cases with MRIs of which 13 (6%) on 5ARI were matched to 25 (12%) not on ARI based on age and Gleason Score. Two experienced GU radiologists recorded Apparent Diffusion Coefficient (ADC), maximum enhancement over baseline, and enhancement curve types of the PC and BPH nodules.

**Results:** PSA 9.0 ng/ml (range 4.7-22) vs 5.6 (4.9-8.1) (p=0.09) and prostate volume 76.0 cc (range 47.2-98.0) vs. 56 cc (46.7-62.8) (p=0.07) trended higher with 5ARI use. Less aggressive enhancement curves were seen in cancer lesions (p=0.06) and benign nodules (p=0.01) with 5ARI use (Table). 5ARI use had no effect on ADC or maximum enhancement above baseline for cancer or BPH nodules. ADC values did not differ in malignant (p=0.1) and benign (p=0.7) nodules in patients on 5ARI. Enhancement over baseline in cancer and BPH nodules were similar (p=0.9 and p=0.6, respectively).

**Conclusion:** ARIs alter certain lesion characteristics in prostate MRIs that may be important in the detection of cancer.

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**Podium #81**

**CREATION AND PILOT TESTING OF AN MRI/US FUSION BIOPSY TRAINING SYSTEM**

Brandon Caldwell, BA¹, David Greenwald, MD¹, Daniel Moreira, MD¹, Rongwen Tain, PhD¹, Winnie Mar, MD¹, Karen Xie, MD¹, Christopher Coogan, MD² and Michael Abern, MD¹

¹University of Illinois at Chicago; ²Rush Medical College

Presented By: Brandon Caldwell, BA

**Introduction:** Available training phantoms for MRI-TRUS fusion prostate biopsy are expensive and don't allow for destructive accuracy testing. We describe the design and construction of a novel cost-effective MRI-US training phantom with visual lesion hit detection and pilot testing with urology residents from six Chicago programs.

**Methods:** The phantom is cast from clear liquid PVC-P and features blue clay lesions (10mm and 5mm), a urethral lumen, and echogenic capsule. T2-weighted images were obtained with a 3T MR750 (GE Healthcare, Boston, MA). Testing used the bkFusion system (BK ultrasound, Peabody, MA) with MIM Symphony Dx software (MIM, Cleveland, OH) for image contouring and an 18-gauge Bard Monopty gun (Bard, Murray Hill, NJ). 21 residents tested the phantom and were surveyed (1 to 10 scale) afterward. Target hits (three attempts) were confirmed by visual inspection of blue clay in the core sample.

**Results:** The trainees spanned PGY 1 to 5, and 38% had previously performed a fusion biopsy. 100% found at least one lesion and 95% found both on TRUS. 100% hit the 10mm target at least once and 76% hit it twice; 81% of residents hit the 5mm target. The average
survey scores: realism 9.0, usefulness 9.4, ease of use 9.1, ease of orientation 8.9, and overall experience 9.3.

**Conclusion:** The phantom provided a realistic and useful training experience for the participants. The phantom shows promise for integration into clinical training and accuracy testing of fusion methodologies and hardware and software platforms.

**Podium #82**

**NATIVE AMERICAN AND WEST AFRICAN ANCESTRY ARE ASSOCIATED WITH RISK OF SIGNIFICANT PROSTATE CANCER AMONG RACIALLY DIVERSE MEN UNDERGOING PROSTATE BIOPSY**

James Stinson, MS1, Adam B. Murphy, MD, MBA2, Oluwarotimi S. Nettey, MD, MHS2, Maria Ruden3, Pooja Gogana2, M.A. Dixon4, Courtney M.P. Hollowell, MD3, Roohallah R. Sharifi Sharifi, MD4, William J. Catalona, MD2, Andre Kajdacsy-Balla, MD, PhD5, Virgilia Macias, MD5 and Rick Kittles, MD, PhD6

1University of Illinois Chicago College of Medicine; 2Northwestern University Feinberg School of Medicine, Department of Urology; 3John H. Stroger Hospital of Cook County, Division of Urology; 4Jesse Brown VA Medical Center, Division of Urology, Dept. of Surgery; 5University of Illinois at Chicago, Department of Pathology; 6City of Hope Dept. of Population Sciences, Division of Health Equities

Presented By: James A. Stinson III, MS

**Introduction:** Prostate cancer (PCa) death rates are highest among non-Hispanic Blacks (NHBs) and lowest among Hispanics with non-Hispanic Whites (NHWs) in between. Native American ancestry (NAA) and West African ancestry (WAA) vary between these groups. Genetic ancestry may be a marker of high-grade PCa (HGPCa). Therefore, we tested the association between NAA and WAA in Hispanics, NHWs and NHBs with HGPCa diagnosis (Gleason grade ≥3+4) on prostate biopsy.

**Methods:** We enrolled 885 (347 NHWs, 438 NHBs, 100 Hispanics) men before prostate biopsy for abnormal PSA or digital rectal exam (DRE). Data was collected from questionnaires and chart abstraction. Germline DNA was genotyped for 100 ancestry informative markers (AIMs) to estimate genetic European, WAA and NAA. Race-stratified sensitivity analyses identified cutoffs of WAA and NAA associated with HGPCa using unadjusted logistic regressions. Race-stratified binary logistic regression models included 1 ancestry variable and age, PSA, digital rectal exam, high school completion and marital status.

**Results:** In adjusted regressions, in NHWs, both NAA >3.99% (25th percentile) (p=0.02) and increasing WAA quartiles (p=0.01) were negatively associated with HGPCa. In Hispanics, NAA >30.72% (25th percentile, p ≤ 0.01) was significantly inversely associated, while WAA >4.58% (25th percentile) was positively associated with HGPCa (p=0.03). In NHBs, NAA quartiles (p = 0.03) were inversely associated with HGPCa; there were no significant associations with WAA.

**Conclusion:** NAA is inversely associated with HGPCa. WAA is inversely associated with HGPCa in NHWs and positively associated with HGPCa in Hispanics. Admixture mapping is warranted.

**Podium #83**

**THE EFFECT OF PROSTATE VOLUME ON MRI/US FUSION BIOPSY POSITIVITY RATES**

Robert Batler, MD1, Ericka Bagi, RN1, Jesse Miles1, David Hollensbe, MD1, Ronald Suh, MD1 and Jason Mullinix, MD2

1Urology of Indiana; 2Radiology of Indiana

Presented By: Robert A. Batler, MD, MBA

**Introduction:** MRI/US Fusion Trans-rectal prostate biopsy has been increasingly utilized for the detection and monitoring of prostate cancer. While prostate volume (PV) may influence the usefulness of PSA testing, the effects of PV on PIRADS positivity rates is not well known.
Methods: 1000 consecutive MRI/US Fusion Trans-rectal prostate biopsies were performed between August 2015 and November 2017 within one independent urology practice. The Artemis platform (Eigen) was utilized for all the biopsies. PV, PIRAD Score, PSA, Gleason Score and complications were captured prospectively as part of a Quality Assurance database.

Results: The likelihood of a positive MRI/US Fusion Trans-rectal prostate biopsy decreased as PV increased. The most consistent impact was observed in PIRAD-3 lesion. At PV greater than 100cc positivity rates rapidly deteriorated for all PIRAD scores. (See Graph)

Conclusion: Larger PV is associated with lower positivity rates across all PIRAD scores. PV appears to have less impact on PIRAD-5 lesions compared to PIRAD 3 and 4 lesions. PV should be considered in the decision making process to proceed with Fusion biopsy.

Podium #84
PERINEURAL INVASION DOES NOT ASSOCIATE WITH WORSE GENOMIC PROSTATE SCORE OUTCOMES IN MEN ELIGIBLE FOR ACTIVE SURVEILLANCE
Bryan Naelitz, BA, Daniel Hettle, BS, Anna Faris, BA, Shree Agrawal, BS and Eric Klein, MD
Cleveland Clinic Glickman Urology and Kidney Institute
Presented By: Bryan D. Naelitz, BA

Introduction: We examined the association between PNI in men on active surveillance (AS) and the genomic prostate score (GPS) to better understand the implications of this pathology.

Methods: Biopsy and final pathology data were obtained for all patents who obtained a GPS at a tertiary care center between 05/2014–09/2016. Descriptive statistics, Wilcoxon Rank Sums, and Fisher’s Exact Test were performed.

Results: A total of 509 patients obtained a GPS, with 58 having PNI on needle biopsy (NB). A higher median number of positive cores on diagnostic biopsy was associated with PNI diagnosis (Table). Median GPS was similar between patients with and without PNI, and median likelihood of favorable pathology at prostatectomy (LFP) tended to be lower in those patients with PNI. Patients with Grade Group 1 (GG1) at diagnosis had a significant difference in median LFP between those with PNI and those without; however, patients with Grade Group 2 (GG2) had no difference in median LFP in those with and without PNI.

Conclusion: This study supports previous findings that PNI associates with higher volume cancer on NB. There was an association between PNI and lower LFP in patients diagnosed with GG1 disease; however, this modest difference suggests PNI need not exclude patients with low GPS scores from AS.
Podium #85
PATIENTS PERCEPTION ON OBTAINING THEIR GENETIC RISK SCORE FOR PROSTATE CANCER
Richard Fantus, MD1, Jianfeng Xu, MD, PhD2, Elena Genova-Peeva2, Holly Laduca3, Chi Wang, PhD2, Brian Helfand, MD, PhD2 and Joshua Aizen, MD1
1University of Chicago; 2NorthShore University; 3Ambry Genetics
Presented By: Joshua M. Aizen, MD

Introduction: The use of single nucleotide polymorphisms (SNPs) in determining a patient’s Genetic Risk Score (GRS) for prostate cancer (PCA) has recently been shown to outperform family history alone. However, since its introduction, no study has evaluated patients’ self-reported understanding or anxiety associated with GRS.

Methods: Subjects were included if they had a PSA, GRS, and prostate biopsy. Men were given a survey before and after completing receiving their GRS to gauge their understanding and anxiety levels from 0-4 (least to most). The race-specific PCA-GRS were comprised of 100 validated PCA risk SNPs in a CLIA certified laboratory.

Results: 162 men were enrolled in the study, of which all completed the initial and 84 (51.9%) completed the follow-up survey. Men’s understanding, overall anxiety, and likelihood of changing their cancer screening behaviors are shown on the Table.

Conclusion: The results of the PCA-GRS appear to correlate with the patients’ anxiety; men with higher GRS are more likely to be anxious after they receive their results. Importantly, men in this higher risk group also were more likely to take action based on their GRS. This knowledge can help shape the individualized discussions to improve patient understanding and simultaneously decrease anxiety in men undergoing genetic testing for PCa.

Podium #86
THE EFFECT OF THE TIMING OF BIOCHEMICAL FAILURE AFTER EXTERNAL BEAM RADIOTHERAPY OR LOW DOSE-RATE BRACHYTHERAPY FOR DEFINITIVE PROSTATE CANCER TREATMENT
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Cleveland Clinic
Presented By: James C. Ulchaker, MD, FACS
**Introduction:** To assess the effect of the timing of biochemical failure (bF) after definitive radiotherapy with external beam (EBRT) or low dose-rate brachytherapy (LDR) on clinical failure (cF) and prostate cancer-specific mortality (PCSM).

**Methods:** From 1996 to 2009, 4478 patients were treated and by 2010, 456 patients were noted to have a bF. They were categorized as early (< 5 years post-therapy) or late (> 5 years post-therapy) failures. Factors thought to influence cF and PCSM were scored. Cox regression was used to assess the timing of bF on cF and Fine and Gray regression was used to assess the timing of bF on PCSM.

**Results:** There were 330 (72.4 %) patients categorized as early and 126 (27.6 %) as late failures. The median PSA follow-up post-radiotherapy for the early bF group is 82 months vs. 155 months for the late bF group, and the median PSA follow-up post-bF is 54 months for the early bF group vs. 69 months for the late bF group. The early failures were more likely to be high-risk (p = 0.0080), have a higher Gleason score (p = 0.0008), and use ADT (p = 0.0325). The five-year rate of cF post early bF is 61% vs 43% post late bF (p <0.0001). The five-year rate of PCSM post early bF is 27% vs 9% post late bF(p <0.0001).

**Conclusion:** Early bF is associated with higher rates of cF and PCSM. Patients treated with LDR have a lower risk of PCSM.

**Podium #87**
THE IMPACT OF CELECOXIB ON OUTCOMES IN ADVANCED PROSTATE CANCER PATIENTS UNDERGOING ANDROGEN DEPRIVATION THERAPY

Tyler Etheridge1, Jinn-ing Liou, PhD2, Tracy M. Downs, MD3, E. Jason Abel, MD3, Kyle A. Richards, MD3 and David F. Jarrard, MD3

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Presented By: Tyler Etheridge, BA

**Introduction:** Recent work suggests the selective Cox-2 inhibitor celecoxib delays progression to androgen independence in hormone sensitive prostate cancer through inhibiting the androgen receptor and ErbB signaling. However, human studies examining its effect on delaying disease progression while on hormone therapy are limited. This study explores the effect of celecoxib use on PC survival in VA patients undergoing androgen deprivation therapy (ADT) for advanced PC.

**Methods:** We retrospectively examined the association between celecoxib use (≥180 days) in men with PC being treated with ADT in national VA databases. Patients were diagnosed with PC from 2000-2008 and had follow-up through May 2016. Clinical, pathologic and demographic variables were compared by celecoxib use, using Mann-Whitney U test and Chi-squared tests. Associations between celecoxib use and overall survival (OS), skeletal related events (SRE), and cancer specific survival (CSS) were performed using adjusted Cox proportional hazard models.

**Results:** 87,344 patients were identified. Patients on celecoxib (n=1,581) had lower PSA at diagnosis (7.0 versus 8.7ng/mL, p<0.001) and initiation of ADT (6.2 versus 7.3ng/mL, p=0.002) compared to patients not taking celecoxib (n=85,763). Gleason score (p=0.14), death from PC (p=0.07), and number of SREs (p=0.18) were similar between groups. In the Cox multivariable analysis, celecoxib use was not associated with improved OS (HR, 1.06, 95% CI, 0.93-1.21, p=0.38), risk of SRE (HR 0.95, 95% CI 0.62-1.44, p=0.80), or improved CSS (HR 1.00, 95% CI 0.78-1.28, p=0.98).

**Conclusion:** Despite an association with lower PSAs, celecoxib use in PC patients on ADT was not associated with improved cancer outcomes.
Podium #88
DIFFERENCES IN PATHOLOGIC OUTCOMES OF UNIVERSITY AND COMMUNITY-BASED PROSTATECTOMY: IS IT THE SURGEON OR THE PATIENT?
David Greenwald1, Alicia Roston, MPH1, Matt Wonais, BS1, Jason Huang, MD1, Ikenna Madueke, MD, PhD1, Laurel Sofer, MD1, Neha Malhotra, MD1, Daniel P. Dalton, MD2,3, Simone Crivellaro, MD1 and Paul Yonover, MD1,3
1University of Illinois, Chicago; 2Northwestern; 3Uropartners
Presented By: David T. Greenwald, MD

Introduction: Clinical guidelines for prostate cancer treatment often emerge from data generated at academic institutions. The heterogeneity of patient populations in various practice settings can complicate the application of the findings in the published literature. This study compares the pathologic findings of radical prostatectomies performed in a community-based specialty practice and an urban tertiary care university practice.

Methods: We retrospectively reviewed radical prostatectomy surgical pathology from a community based specialty group and from the University of Illinois at Chicago (UIC) from 2012 to 2016. Population proportion Z-scores and Chi-Squared Tests were used for statistical analysis.

Results: From 2012-2016, a total of 1,808 radical prostatectomies were performed (1,525 in community practice and 283 at UIC). Comparing UIC to the community practice, we note statistically significantly higher rates of high-risk pathology, local extraprostatic disease, and involvement of regional lymph nodes at the tertiary academic center.

Conclusion: We found that academic urologists in an urban setting have more aggressive and advanced prostate cancer at prostatectomy than the comparison group of community urologists who serve a largely suburban population. This is likely due to both differences in practice patterns and patient factors. These findings should inform the interpretation and applicability of data emerging from academia to the community urology practice setting.

Podium #89
GLEASON SCORE (GS) UPGRADING AT RADICAL PROSTATECTOMY: IS IT AN ACTUAL UPGRADING? AN OVERVIEW USING MULTI-PARAMETRIC MRI
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Presented By: Amr Mahran, MD

Introduction: Trans-rectal ultrasound GS upgrading is a well-known observation at radical prostatectomy (RP). The question is it an actual upgrading? or the TRUS biopsy missed the higher-grade lesions. Our objective was to identify the clinical and mpMRI predictors of GS upgrading at RP.

Methods: Under an approved IRB database, patients who had valid mpMRI prior to RP were identified. GS upgrading was defined as having either primary grade at RP > primary grade at TRUS biopsy, total post-RP GS (primary grade + secondary grade) > TRUS biopsy total GS or tertiary grade (if available) > both the 1ry and 2ry grades.

Results: 132 patients were included. The mean age, PSA and MR prostate volume were 61.6 ± 6.6, 10.9 ± 10.5 and 39.9 ± 18.5, respectively. 24 patients (18.2%) had a GS upgrade at RP. On univariate analysis, PI-RADS 4-5 transitional zone lesions (OR-3.45, 95%CI 1.292- 9.213, p= 0.013) and PI-RADS 4-5 anterior prostatic lesions (OR-4.62, 95%CI 1.824-11.703, p= 0.001) were predictors of upgrading. On multivariable analysis, PIRADS 4-5 anterior lesions was a predictor for upgrading (p= 0.007, AOR-3.989, 95%CI 1.468-10.839).
Neither age, PSA, PSA density, extra-prostatic extension nor seminal vesicle invasion significantly associated with upgrading.

**Conclusion:** Clinically significant anterior prostatic lesions (PIRADS 4-5) were an independent predictor of upgrading of GS at RP. Due to difficulty to biopsy lesions in this location, it is possible that TRUS biopsy missed the higher-grade lesions rather than the occurrence of actual upgrading. This supports the value of using mpMRI before TRUS biopsy.

**Podium #90**

**MATCHED COMPARISON OF OPEN RETROPUBIC AND ROBOT-ASSISTED RADICAL PROSTATECTOMY FOR PROSTATIC ADENOCARCINOMA: LONG TERM ONCOLOGIC OUTCOMES**

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Presented By: Jason P. Joseph, MD

**Introduction:** Robot-assisted radical prostatectomy (RARP) and open radical retropubic prostatectomy (RRP) are amongst definitive surgical options for the management of localized prostate cancer. Studies have suggested relative perioperative benefits associated with RARP, including reduced blood loss, rate of transfusion, and length of hospital stay. However, data regarding short term oncologic outcomes are conflicting, and long term oncologic outcomes are not described. We sought to compare long term oncologic results in a matched comparison study.

**Methods:** With institutional review board approval, we identified 294 patients undergoing RARP for clinically localized prostate cancer between August 2002 and December 2005. As previously described, a comparison group of 558 patients undergoing RRP from the same period was identified, matched 2:1 for age, surgical year, preoperative prostate-specific antigen level, clinical stage, and biopsy Gleason grade. Pathological features were assessed. Kaplan-Meier analyses were performed to compare oncologic outcomes.

**Results:** There were no significant differences in pathological grade, pathological stage, or rate of positive surgical margin between groups. Median follow-up was 11.3 years for the RARP group (IQR 10.0-11.7), and 11.3 years for RRP (IQR 10.3-11.9). Survival analyses demonstrated no significant difference between Kaplan Meier estimates of biochemical progression-free survival, local recurrence-free survival, systemic progression-free survival, prostate cancer specific mortality-free survival, or overall survival over the follow-up interval.

**Conclusion:** In this matched comparison, there was no significant difference in long term oncologic outcomes between the RARP and RRP techniques. To our knowledge, this represents the longest reported follow-up comparing oncologic outcomes between these techniques.

**Podium #91**

**PREOPERATIVE MULTIPARAMETRIC PROSTATE MRI ALLOWS FOR HIGHER RATE OF NERVE SPARING IN MEN WITH HIGH RISK PROSTATE CANCER WITHOUT COMPROMISING ONCOLOGIC OUTCOMES**

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Loyola University Medical Center  
Presented By: Chirag Doshi, MD

**Introduction:** Preoperative multiparametric magnetic resonance imaging of prostate (PmpMRI) provides critical information, including enhanced local staging, identification of high risk features such as extracapsular extension and relation of the cancer to the neurovascular bundle. Neurovascular bundle sparing prostatectomy procedures lead to greater postoperative potency, but also carry potential risk of positive surgical margins. The
The purpose of this study was to analyze the effect of PmpMRI on nerve sparing and its associated impact on surgical margins.

**Methods:** We retrospectively analyzed patients who underwent robotic radical prostatectomy at our institution from 2013-2016. Demographic and clinical data was analyzed.

**Results:** 160 patients underwent robotic radical prostatectomy. 74 patients (46.2%) had a PmpMRI. Patients who underwent a PmpMRI were more likely to have NCCN High Risk Prostate Cancer (35.1%) compared to the no-PmpMRI cohort (19.8%). Other demographic and clinical data were similar between the two cohorts (Table). Patients with pathologic T3 disease who underwent PmpMRI were more likely to undergo unilateral nerve sparing (38.7% vs 13.3%) and were less likely to have a positive surgical margin (22.6% vs 40.0%).

**Conclusion:** Preoperative mpMRI aids in surgical decision making. Men with high risk prostate cancer underwent more nerve sparing and had lower positive surgical margins in comparison to men without preoperative mpMRI. Further validation is necessary.

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**Podium #92**  
**EVALUATING THE POTENTIAL ROLE OF SALVAGE VESICULECTOMY FOR PROSTATE CANCER RECURRENCE**  
Kevin Wymer, MD, Vidit Sharma, MD, Brian Davis, MD, Eugene Kwon, MD, Lance Mynderse, MD and R. Jeffrey Karnes, MD  
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Presented By: Kevin Wymer, MD

**Introduction:** We report salvage vesiculectomy for clinical prostate cancer recurrence within the seminal vesicles (SV).

**Methods:** Retrospective review was performed for all patients who underwent seminal vesiculectomy from 2007-2017. Only patients previously treated with radical prostatectomy or radiation therapy for prostate cancer were included.

**Results:** From 2007-2017, 23 men underwent salvage vesiculectomy for prostate cancer recurrence. Sixteen (70%) patients had undergone prior prostatectomy, and 19 (83%) had received radiation therapy (6 primary and 13 salvage). The most common preoperative indications were 11C-choline PET-avid lymph nodes with concomitant SV remnant, 11C-choline PET-avid SV remnant, and biopsy proven SV recurrence. In total, 11 (48%) patients had positive SV involvement on pathology. When stratified to patients with pre-operative primary intention to treat SV disease, the rate of SV involvement increased to 79% (11 of 14 patients). Post-operatively, PSA became undetectable in 9 (36%) patients (Figure 1a). Six (27%) patients suffered operative complications (3 Clavien III, 2 Clavien II, and 1 Clavien I). At median follow up of 45 months (IQR 12-58), biochemical recurrence-free, systemic progression-free, and cancer-specific survival was 61%, 74%, and 91% respectively (Figure 1b).

**Conclusion:** We report the first series describing salvage seminal vesiculectomy for recurrent prostate cancer. Although a relatively small cohort, seminal vesiculectomy may represent a valid treatment option.
Podium #93
PROSTATE HEALTH INDEX DENSITY AS A PREDICTOR OF CLINICALLY SIGNIFICANT PROSTATE CANCER
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Presented By: Craig Labbate, MD

Introduction: Prostate Health Index (PHI) is FDA-approved as a decision aid in the detection of prostate cancer (PCa) and high-grade disease. A previous retrospective study of a relatively small cohort of men suggested that prostate volume could be used to improve the performance of PHI (Tosoian et al. BJUI 2017. In Press). We aimed to validate this finding using a larger prospective cohort of men undergoing biopsy.

Methods: Consecutive male patients were included if they had an initial PSA, PHI, and underwent a diagnostic prostate biopsy. Univariate and multivariate models were generated to determine the performance of PHI density compared to PSA, PSAD, and PHI.

Results: Of the 342 men included in this study, 108 (31.6%) men had a positive biopsy. Univariate analyses demonstrated that race, family history, age, and phi density were significantly associated with ISUP grade II disease or higher on biopsy. Compared with either PSA (AUC 0.576) or PHI (AUC 0.744), PHI density had a significantly greater discriminative ability for clinically significant disease (AUC, 0.744; p<0.01; Table)

Conclusion: PHI can help determine which patients are likely to harbor clinically significant PCa on biopsy. We validated that PHI density can provide significantly greater discriminatory abilities and thus should be incorporated into decision aids prior to consideration of biopsy.
AGE AND GENDER HAVE NO EFFECT ON EXPRESSION LEVELS OF MARKERS OF IMMUNE CELL INFILTRATION AND IMMUNE CHECKPOINT PATHWAYS IN PATIENTS WITH MUSCLE INVASIVE TRANSITIONAL CELL CARCINOMA OF THE BLADDER: A RETROSPECTIVE STUDY OF 50 PATIENTS TREATED WITH RADICA

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Presented By: Bradley Holland, MD

Introduction: Determine the expression patterns of various cellular proteins active in immune pathways in bladder cancer patients, and assess the correlation between age, gender, and immune markers expression.

Methods: Tissue samples were obtained from equally distributed male/female patients with/without lymph node metastasis on final pathology after undergoing radical cystectomy for transitional cell carcinoma of the bladder from 2009-2011 (n=50). Immunohistochemistry (IHC) for CD3, CD4, CD8, LAG3, CD56, TIM3, PD-1 and PD-L1 were performed and scored by a single pathologist (scoring was on 0 to 100% scale). Statistical analyses investigated association between age, gender, lymph node metastasis, and IHC results.

Results: Mean age 67 (50-78); all Caucasians. Statistical analyses showed no association between patients’ age, gender, and the expression of any of the immune markers (p>0.05). Similarly, the staining scores for the immune markers were not correlated with LN metastasis. Correlation between stains showed a negative correlation between CD56 and PD-L1 (-0.286, p=0.047) and between PD-1 and PD-L1 (-0.381, p=0.007).

Conclusion: Although age and female gender have been associated with worse outcomes in bladder cancer, this association may be independent of the immune pathways active in the disease. Increased expression of PD-L1 is associated significantly with suppression of anti-tumor natural killer cells in the transitional cell carcinoma of the bladder.
Podium #95
PATHOLOGICAL RESPONSE AT RADICAL CYSTECTOMY WITH CISPLATIN-BASED CHEMOTHERAPY: DOES VARIANT HISTOLOGY MATTER?
Adam Calaway, Elhaam Bandali, Naveen Krishnan, MD, Clint Cary, MD, Timothy Masterson, MD, Thomas Gardner, MD, Richard Bihrlle, MD, Richard Foster, MD, Michael Koch, MD and Hristos Kaimakliotis, MD
Indiana University
Presented By: Adam C. Calaway, MD

Introduction: The benefit of neoadjuvant chemotherapy (NACT) prior to cystectomy in patients with variant histologies is unknown. We sought to assess the pathological response rate of histological variants to NACT and compare to patients with pure UC.

Methods: Our prospective bladder cancer database was queried to identify all patients treated with cisplatin-based NACT prior to radical cystectomy from 2008 until June 2017. Pathological response after chemotherapy was defined as complete (pT0N0), any (<pT2N0) and no response (≥pT2Nany) based on cystectomy pathology. A logistic regression model estimated the odds of chemotherapy response based on preoperative variables.

Results: One-hundred and forty-nine patients met inclusion criteria. Seventy-nine (53.2%) patients had variant histology on TURBT or cystectomy pathology. The overall cohort and variant histology pT0N0 and <pT2N0 rates were 28.9% and 50% and 26.6% and 43.1%, respectively. The response rates to NACT based on specific histologic variants are depicted in Figure 1. Suspected high-risk variants (micropapillary, plasmacytoid and small cell) were less likely to demonstrate any response to NACT than pure UC (30.4 vs. 55.7%, p =0.05). Aggressive variant histology (OR 0.319, p = 0.03) was associated with lower likelihood of pathological response.

Conclusion: Aggressive variants are less likely to respond to NACT, perhaps necessitating enrollment in novel NACT trials or early surgical intervention.

Podium #96
INCIDENCE AND RESISTANCE PATTERNS OF POST RADICAL CYSTECTOMY INFECTIONS, SINGLE INSTITUTION EXPERIENCE
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Presented By: Mohamed Hendawi

Introduction: Infections are the second most common complications within 90 days after radical cystectomy (RC). AUA guidelines infections prophylaxis are mostly adopted from colorectal surgery recommendations. In this study we evaluate the incidence of infection following RC, the implicated pathogens, and their resistance patterns.

Methods: The medical records of all bladder cancer patients who underwent radical cystectomy from 2012-2016 were retrospectively reviewed. Perioperative prophylactic antibiotics and post-operative infections were classified and analyzed. The most common resistance patterns were identified.
Results: We identified 279 patients who underwent RC. All patients received prophylaxis antibiotics within one hour of incision. Prophylactic antibiotics regimens included combinations of Aminoglycosides with Penicillin/Subbactam. Few cases received 1stgeneration Cephalosporins or Clindamycin due to allergy profile or pre-operative cultures results. Within 30days after surgery; 87 patients (31.2%) had at least one infection. Of these 40(14.3%) had urinary tract infection, 17(19%) had an abscess, 8(9%) superficial wound infections, 6 had sepsis, and 3 had pneumonias. The rate of infections relative to all complications significantly increased over time from 36% in 2014 to 41% in 2016 (p<0.001). 68 patients had positive cultures. These included E.coli 16(18%), Staph 21(24%), candida 17(19%), Enterococcus 8(9%),and klebsiella 10(11%). Culture susceptibility data revealed coverage rates of 88% for Gentamycin, 65% for sulfa, 53% for Cefazolin, for 68% for Fluoroquolinones, 90% for piperacillin/tazobactam, 93% for Vancomycin, and 99% for Doripenem.

Conclusion: The incidence of post RC infections is rising. New recommendations should address fungus and the resistant gram positive bacteria. Antifungal, Aminoglycosides and Carbapenem family should be considered as reasonable combination for prophylaxis.

Podium #97
EPIDURAL USE AT CYSTECTOMY AND ITS ASSOCIATION WITH PERIOPERATIVE AND SURVIVAL OUTCOMES IN THE UNITED STATES, 2002-2014: A POPULATION-BASED STUDY
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University of Wisconsin
Presented By: Brady L. Miller, MD, MPH

Introduction: Epidural use has been associated with improved survival after cancer surgery. Here, we describe epidural use and its association with outcomes following radical cystectomy (RC).

Methods: Patients >65 years of age who underwent RC for non-metastatic bladder cancer between 2002-2014 were identified using Surveillance, Epidemiology and End Results: (SEER) Medicare-linked data. Propensity score weighting was used to account for potential bias. Outcomes were generated with Cox proportional hazard and logistic regression models.

Results: Of 7,857 patients identified, 1,748 (22.2%) received epidural anesthesia at surgery. Epidural use declined with time, from 30.7% in 2005 to 14.8% in 2014 (p<0.001). Median length of stay (LOS) was greater for those with epidurals (9.0 days, IQR 7.0-13.0) than without (8.0, IQR 6.0-12.0; p<0.001). Patients with epidurals were more likely to suffer from myocardial infarction, pulmonary embolus, stroke or sepsis during the index hospitalization (24.4% v 21.1%, p<0.001). At discharge, skilled nursing facility placement was similar (20.5% epidural vs 20.1% without, p=0.7) In a propensity score-adjusted analysis, epidural use was associated with higher readmission rate at 30 days (OR 1.18, 95% CI 1.09-1.28, p<0.001) but not associated with death within 30 days (OR 0.97, 95% CI 0.90-1.04, p=0.32), cancer-specific survival (HR 0.97, 95% CI 0.91-1.03, p=0.32) or overall survival (HR 0.99, 95% CI 0.95-1.04, p=0.72).

Conclusion: Epidural use at time of RC is low and decreasing in recent years. Though epidural use was associated with higher risk of major post-operative complications, increased LOS and readmission, survival outcomes were unaffected.
Podium #98
PROSPECTIVE ENHANCED RECOVERY AFTER SURGERY INTERVENTION FOR CYSTECTOMY IN NEOADJUVANT CHEMOTHERAPY RECIPIENTS
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Presented By: Anna E. Faris, BA

Introduction: Neoadjuvant chemotherapy (NAC) improves long-term survival in patients with muscle invasive bladder cancer without higher rates of perioperative morbidity. However, the effects of enhanced recovery after surgery (ERAS) protocols within NAC patients are uncertain.

Methods: Institutional ERAS for radical cystectomy patients was implemented October 2016 (pre-ERAS group: 1/2016-9/2016; post-ERAS: 10/2016-7/2017). Patients with NAC within 6 months of cystectomy for muscle invasive or metastatic bladder cancer were included. Patient characteristics, perioperative variables, complications, and hospital encounters (within 30 days following surgery) were recorded. Variables between groups were compared utilizing wilcoxon, chi squared and fisher’s exact tests.

Results: Of 257 cystectomy patients, 80 received NAC treatment within 6 months of operation. Thirty-five patients underwent cystectomy before ERAS intervention and 45 were post-intervention. The most common regimen was gemcitabine-cisplatin (71%), followed by methotrexate, vinblastine, adriamycin, cisplatin (13%). Distribution of chemotherapy regimens and completed cycles were similar between pre- and post-intervention groups (3[3-4] vs 4[3-4] cycles; \(p=0.31\)). The two groups did not significantly differ in median time between final NAC treatment and surgery date (pre-ERAS 44[35-55] days, post-ERAS 51[41-82] days; \(p=0.13\)). Complication occurrence did not differ between pre-ERAS (54%) and post-ERAS (51%) groups (\(p=0.78\)). Length of hospital stay was significantly shorter in post-intervention patients compared to pre-intervention (5[4-6] vs 8[6-10] days respectively; \(p=0.0001\)). Ten of 35 (29%) pre-intervention patients returned to the hospital for care (emergency room, observation or readmission) within one month of surgery, similarly 13 of 45 (29%) post-intervention patients returned (\(p=0.98\)).

Conclusion: Enhanced recovery interventions for NAC cystectomy patients contributed to significantly shorter hospital stays. The intervention did not change short-term post-operative complication rates or returns to the hospital.

Podium #99
FRAILTY AND ITS IMPACT ON PATIENTS RECEIVING NEOADJUVANT CHEMOTHERAPY PRIOR TO RADICAL CYSTECTOMY
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Presented By: Jeremy M. West, MD

Introduction: Radical cystectomy (RC) with neoadjuvant chemotherapy is the standard of care for muscle invasive bladder cancer. Frailty, or decreased functional reserve, may be associated with increased complications in patients undergoing surgery. We prospectively measured preoperative frailty and its interaction with neoadjuvant chemotherapy in patients undergoing RC.

Methods: 103 RC patients from January 2015 to April 2017 were prospectively evaluated for frailty. Frailty was determined via assessment with the Fried Frailty Index. Survival probabilities were evaluated using Kaplan-Meier method and association between frailty and receipt of neoadjuvant chemotherapy on 30-day outcomes and overall survival was calculated.

Results: 71 of 103 (69%) patients received neoadjuvant chemotherapy and 35 of 103 (34%) had preoperative frailty. 6 of 103 (6%) patients were frail and did not receive chemotherapy while 29 of 103 (41%) patients were both frail and received neoadjuvant chemotherapy. 42 of 103 (41%) had a 30 day complication with 26 of 103 (25%) readmitted.
At a median follow-up of 17 months (IQR: 10.2-30.0), 22 of 103 (21.4%) patients died. Frailty was independently associated with an increase in overall mortality ($p=0.03$). No significant difference in overall survival was seen in frail patients who received neoadjuvant chemotherapy compared to non-frail patients ($p=0.15$).

**Conclusion:** In this evaluation, frailty was associated with an increase in overall mortality after RC. Frail patients who had received neoadjuvant chemotherapy did not have decreased overall survival compared to non-frail patients. Thus, neoadjuvant chemotherapy can still be considered in frail patients prior to RC.

**Podium #100**

**LONGTERM FOLLOW-UP OF A PHASE II CLINICAL TRIAL OF INTRAVESICAL BACILLUS CALMETTE-GUERIN (BCG) FOLLOWED BY SUNITINIB FOR THE TREATMENT OF HIGH-RISK NON-MUSCLE INVASIVE BLADDER CANCER (NMIBC)**

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Presented By: Colton H. Walker, MD

**Introduction:** We conducted a phase-II trial to evaluate combination therapy with BCG and Sunitinib for prevention of recurrence and progression of NMIBC with a primary endpoint of 3-month complete response (CR).

**Methods:** Patients with high-grade clinical ≤T1N0M0 NMIBC who had not received BCG within 12 months of diagnosis were deemed eligible. Study patients received a 6-week induction BCG course followed by 28 days of Sunitinib. Complete response was determined by biopsy and cytology. Patients with incomplete response were eligible for a second cycle of BCG and Sunitinib. The primary endpoint was 3-month CR. Secondary endpoints included 2- and 5-year recurrence- and progression-free survival (RFS, PFS). This Simon Minimax 2-stage study had an 80% power with a 5% type I error assuming a 3-month CR rate of 75% with BCG and Sunitinib compared to 55% with BCG alone. The primary endpoint would be met if ≥25/36 achieved a 3-month CR.

**Results:** A total of 36 patients met inclusion criteria. Initial stages were cT1(19), Ta(9), and CIS(8). 26/36 patients (72%, 95% CI[55,86]) reached the primary endpoint of 3-month CR. One patient completed a second cycle of BCG and Sunitinib and had CR at 6 months. The 2- and 5-year RFS for all patients were 66% (95% CI[48,79]) and 59% (95% CI[40,74]), respectively. The 2- and 5-year PFS were 100% and 88% (95% CI[66,96]), respectively.

**Conclusion:** The primary endpoint of our study was reached with 26 patients demonstrating a 3-month CR, and thus warrants further evaluation with a phase-III trial.

**Podium #101**

**PARTIAL CYSTECTOMY AND RADICAL CYSTECTOMY FOR BLADDER CANCER: AN ANALYSIS OF THE NATIONAL CANCER DATABASE**

Keegan Zuk, MD, Michael Moriarty, MD, Johnathan Doolittle, MD, Joshua Piotrowski, MD, PhD, Peter Dietrich, MD, Kenneth Jacobsohn, MD, Peter Langenstroer, MD and Scott Johnson, MD

Medical College of Wisconsin

Presented By: Keegan Zuk, MD

**Introduction:** Radical cystectomy (RC) with neoadjuvant chemotherapy (NAC) is the standard of care for muscle invasive bladder cancer (MIBC). Partial cystectomy (PC) has been proposed as an alternative to RC to reduce surgical morbidity. Previous retrospective studies have suggested equivalent outcomes in appropriately selected patients.

**Methods:** Using the National Cancer Data Base (NCDB), 29,760 patients diagnosed with pT0-4N0-3M0 urothelial cell carcinoma (UCC) of the bladder who subsequently underwent PC or RC from 2004-2015 were identified. Propensity score matching was used to compare patients who underwent PC to those who underwent RC. RC and PC cohorts were matched
1:1 using propensity scores based on patient characteristics, pathologic T and N stages and pathologic grade. The 5-year overall survival (OS) was compared between the matched cohorts (n=2471 each) and for each pT and pN stage group using Kaplan-Meier estimates. 

**Results:** 5-year OS using Kaplan-Meier estimates was significantly greater for PC when compared to RC 56% vs 51%, p<0.01. 5-year OS for pTa, pT1 and N0 was 64% for RC and 85% for PC, p=0.01, 60.1% for RC and 66% for PC, p=0.014 and RC 47% and PC 56%, p<0.001 respectively. There was no difference in OS survival for any other pT or pN stage subgroups.

**Conclusion:** Matched analysis found that PC had significantly better OS when compared to RC. A significant difference was seen only in the pTa, pT1 and pN0 stages, suggesting that for patients with non-MIBC confined to the bladder, PC is a viable alternative to RC in select patients.

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**Podium #102**

THE IMPACT OF LYMPH NODE YIELD ON SURVIVAL FOLLOWING ROBOTIC AND OPEN RADICAL CYSTECTOMY FOR BLADDER CANCER

Peter Dietrich, MD, Keegan Zuk, MD, Kenneth Jacobsohn, MD, Peter Langenstroer, MD, William See, MD and Scott Johnson, MD

Medical College of Wisconsin

Presented By: Peter Dietrich, MD

**Introduction:** Lymph node yield has been shown to be similar robotic and open radical cystectomy (RC), however the impact on survival in the robotic approach is not well understood. The objective of this study was to evaluate the impact of surgical approach and lymph node yield on survival following cystectomy.

**Methods:** Using the National Cancer Data Base from 2010-2015 we identified all adult patients undergoing RC for bladder cancer. The impact of lymph node yield and surgical approach on survival was determined with Cox regression, adjusting for age, comorbidity, stage, grade, and institution type. Additionally, an interaction between approach and lymph node yield was included in the model.

**Results:** 11,742 patients were identified for analysis, 24.7% robotic and 75.3% open. Robotic RC had a significantly higher nodal yield (19.6 vs 16.1, p<0.001). Cox regression revealed age (HR 1.01, p<0.001), Charlson score (HR 1.22, p<0.001), and increasing stage to be associated with mortality. Robotic approach (HR 0.85, p=0.03) and increasing nodal yield (HR 0.98 per node, p<0.001) were associated with improved survival. The interaction term in the model revealed no significant difference in impact of lymph node yield between open and robotic approaches (HR 1.01, p=0.15).

**Conclusion:** Increased lymph node yield is associated with increased survival following RC, and this impact is not significantly different between robotic or open approaches, although robotic RC tends to have increased lymph node yield.

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**Podium #103**

VALIDATION OF A NOMOGRAM FOR TREATMENT DECISION-MAKING IN BLADDER CANCER PATIENTS UNDERGOING RADICAL CYSTECTOMY

Albert Kim, MD, PhD, Stephen Williams, MD, Fredrick Schumacher, PhD, Robert Abouassaly, MD, Zhengyi Chen, PhD and Simon Kim, MD

Case Western University

Presented By: Albert H. Kim, MD, PhD

**Introduction:** To validate a bladder cancer treatment decision nomogram assessing all-cause mortality following radical cystectomy.

**Methods:** Patients diagnosed with clinical stage T2-T4a muscle-invasive bladder cancer from 2004 to 2013 were identified in the National Cancer Database (NCDB). All variables in the Radical Cystectomy Survival Calculator (RCSC) were included except for marital status and hydronephrosis. Chi square test and Cox proportional hazards models were used to predict the association of the variables with receipt of radical cystectomy and overall survival respectively, from which a concordance index was generated.
Results: Predictors for increased overall survival included radical cystectomy (HR 0.85; 95% CI, 0.78 to 0.92), pelvic lymph node dissection (HR 0.60; 95% CI, 0.55 to 0.65), and median income >$63,000 (HR 0.89; 95% CI, 0.83 to 0.95), all p<0.001. Predictors for decreased overall survival included higher clinical stage (Stage IV versus Stage II, HR 2.85; 95% CI, 2.67 to 3.04), older age at diagnosis (>80 vs 65-69 years old, HR 1.72; 95% CI, 1.61 to 1.84), higher co-morbidity (Charlson index 2+ versus 0, HR 1.54; 95% CI, 1.44 to 1.65) and non-Hispanic black race (HR 1.10; 95% CI, 1.00 to 1.20), all p<0.05. Based on our cox proportional hazards model, a moderate concordance index of 0.64 was obtained.

Conclusion: Factors predicting overall survival in NCDB were similar to previous results using SEER-Medicare and Texas Cancer Registry cohorts, respectively. This result further strengthens the generalizability of the RCSC nomogram as a pre-operative counseling tool for patients with muscle-invasive bladder cancer. Ongoing translational assessment of this tool is underway.

Podium #104
INTRAVESICAL QUADRUPLE CHEMOTHERAPY IN THE ULTIMATE SALVAGE TREATMENT OF UNRESPONSIVE NON-MUSCLE INVASIVE BLADDER CANCER
Anthony Oberle, Ryan Steinberg, MD, Lewis Thomas, MD and Michael O'Donnell, MD
University of Iowa Hospitals and Clinics
Presented By: Anthony D. Oberle, MD

Introduction: Options for patients with Bacillus Calmette-Guérin (BCG) unresponsive non-muscle invasive bladder cancer (NMIBC) include cystectomy, intravesical chemotherapy (IC), or enrollment in a clinical trial per AUA/SUO guidelines. Many such patients are unfit for or unwilling to undergo radical cystectomy. Development of effective and tolerable IC regimens is imperative. We present preliminary data on intravesical quadruple chemotherapy (QIC) which we have used as our last intravesical treatment of unresponsive NMIBC.

Methods: One month after transurethral resection, patients received alternating cycles of sequential intravesical Adriamycin(50mg)-Gemcitabine(1,000mg) followed by sequential intravesical Docetaxel(37.5mg)-Mitomycin(40mg) the following week (total induction therapy 8 weeks). If no recurrence, patients received monthly maintenance therapy with the same doses and alternating agents every month. Treatment success was defined as no recurrence or cystectomy. Analysis was performed by Kaplan-Meier method.

Results: Twelve patients underwent QIC. All patients had failed at least one course of BCG and at least one course of induction course of IC. Median number of prior induction courses was 3. Median follow-up 7.0 months. Three patients experienced side effects of dysuria and urgency with two patients having interruption of induction therapy due to side effects. Eleven patients completed induction. Treatment success was 83% at 3 months and 83% at 6 months. Two patients underwent cystectomy for refractory urgency and frequency. Final pathology was T0N0 in both.

Conclusion: Preliminary data suggests QIC can rescue patients with refractory NMIBC that have failed multiple intravesical treatments but further evaluation regarding treatment tolerance and long term effects on the bladder are necessary.

Podium #105
COMPARISON OF PERIOPERATIVE OUTCOMES BETWEEN PARENCHYMAL SPARING ROBOTIC PARTIAL NEPHRECTOMY APPROACHES
Asha Mannancheril1, Arpeet Shah, MD2, Sara Capodice, MD2, Cara Joyce, PhD2, Marcus Quek, MD2 and Gopal Gupta, MD2
1Stritch School of Medicine at Loyola University Chicago; 2Loyola University
Presented By: Asha Mannancheril, MA, BS

Tumor enucleation (TE) has the potential to optimize parenchymal preservation and potentially yields better functional outcomes than standard partial nephrectomy (SPN). The objective of our study is to compare the surgical precision of SPN and TE for optimizing nephron-mass preservation specifically in the operated kidney and comparing that to functional outcomes. Robotic partial nephrectomy patients who had suitable pre- and post-
operative imaging studies for analysis of parenchymal mass preservation were included in our study. Of 337 robotic partial nephrectomies performed between 2011 and 2017, 174 met our inclusion criteria. Computed tomography or magnetic resonance imaging were required to be less than 3 months prior and 3-12 months after surgery. Parenchymal mass preservation and surgical precision were estimated for both TE and SPN. Precision was defined as actual postoperative parenchymal volume versus predicted postoperative parenchymal volume, presuming a loss of a 5-mm rim of parenchyma in SPN tumor excision and reconstruction. Analysis included 93 TEs and 81 SPNs. Precision of excision or reconstruction was 96% (IQR = 88-101) for TE vs 90% (IQR = 81-97) for SPN (P = 0.010). We then compared global renal function in both cohorts 3-12 months following the procedure and found that eGFR in SPN patients decreased whereas in TE patients, eGFR did not decrease. These results are statistically significant (P = 0.024). Our analysis demonstrates that TE maximally spares normal renal parenchyma and renal function compared to SPN; this suggests that efforts to maximally spare renal parenchyma may lead to better post-operative renal functional outcomes.

Podium #106
EFFECT OF MINIMALLY INVASIVE PARTIAL VERSUS RADICAL NEPHRECTOMY FOR LARGE RENAL MASSES ON RENAL FUNCTION IN PATIENTS WITH PREOPERATIVE CHRONIC KIDNEY DISEASE: A MULTICENTER STUDY
Peter Dietrich, MD¹, Ross Everett, MD¹, Scott Johnson, MD¹, Kenneth Jacobsohn, MD¹ and Ricardo Autorino, MD²
¹Medical College of Wisconsin; ²Virginia Commonwealth University
Presented By: Peter Dietrich, MD

Introduction: The standard of care for the management of patients with clinical stage T2 or greater renal masses is radical nephrectomy (RN). Partial nephrectomy (PN) can offer improved preservation of estimated glomerular filtration rate (eGFR) and lower postoperative chronic kidney disease (CKD) rates. Our study seeks to evaluate the outcomes of minimally invasive RN versus PN for large renal masses in subset of patients with preoperative CKD.

Methods: Retrospective review using the RObotic SUrgery for LArge renal mass (ROSULA) group multicenter database, which includes robotic RN and robotic/laparoscopic PN procedures done for clinical stage T2 or greater renal masses. Inclusion criterion for this analysis was a baseline eGFR lower than 60mL/min/1.73m2. T-test analysis was performed between groups.

Results: Of 1097 patients, 168 (39 PN and 127 RN) had baseline eGFR <60mL/min/1.73m2 were analyzed. There was no difference in preoperative eGFR or age between groups. Tumor size was larger in the RN group (90cm vs 80 cm, p<0.001), and follow-up time was similar. Cancer recurrence (18.1% vs 13.1%, p=0.41), time to recurrence (11 vs 6 months, p=0.40) and overall survival (OS) were similar between the groups(89.4% PN vs 88.2% RN, p=0.41). Postoperative GFR was significantly higher in PN (45.6 vs 39.4, p=0.04). The change in eGFR was significantly lower in the PN group (1.0 vs 9.3 mL/min/1.73m2, p<0.001).

Conclusion: Minimally invasive PN can offer better preservation of renal function in patients with CKD presenting with a large (cT2 or higher) renal masses compared to RN, without compromising oncological outcomes.
Podium #107
FOLATE RECEPTOR ALPHA (FRA) EXPRESSION IN TUMOR AND NORMAL RENAL PARENCHYMA: AN ANALYSIS OF RESULTS FROM PHASE 2 FOLATE-TARGETED FLUORESCENCE STUDY
Jay Sulek, MD, Ethan Ferguson, MD, Max Jacobsen, PhD, Courtney Finnearty, BS, George Sandusky, PhD and Chandru Sundaram, MD
Indiana University
Presented By: Ethan L. Ferguson, MD

Introduction: Many tumors overexpress folate receptors compared to normal tissues. This differential expression has generated interest in folate-targeted imaging and therapeutic modalities. Unlike many normal tissues, however, folate-receptor expression in normal renal parenchyma is robust and has been observed to be greater than in kidney tumors. We report here on folate receptor expression in tumor and normal renal parenchyma from our first 9 patients from our phase 2 nonrandomized study on the novel use of folate-targeted intraoperative fluorescence, OTL38, in robotic partial nephrectomy for renal masses.

Methods: The institutional review board approved this study. The entire study will involve a total of 10 patients with localized renal-cell carcinoma (RCC) scheduled to undergo robot-assisted laparoscopic partial nephrectomy (RALPN). All tissues were collected and processed with the aid of surgical pathologist. Immunostaining using monoclonal antibody to FRα (Biocare) was performed on slides with both tumor and surrounding normal renal parenchyma. The Positive Pixel count algorithm was used to quantify stain intensity. Slides evaluated by two pathologists. Positivity calculated for tumor tissue and normal surrounding renal parenchyma for each patient.

Results: FRα monoclonal antibody staining for the folate receptor was localized to proximal renal tubules. Staining was negligible in 9 renal tumor samples and was significantly more robust in surrounding renal parenchyma (p=0.002).

Conclusion: Differentially poor folate receptor staining in renal tumors mirrors the difference seen intraoperatively with Firefly fluorescence imaging during robotic partial nephrectomy between tumor and normal renal parenchyma when using OTL38 folate-targeted intraoperative fluorescence.

Podium #108
LAPAROSCOPIC/ROBOTIC-ASSISTED VERSUS OPEN NEPHROURETERECTOMIES: PERIOPERATIVE AND ONCOLOGIC OUTCOMES IN UPPER TRACT UROTHELIAL CARCINOMA
Keerthana Mohankumar, Jay Sulek, MD, Francesca Monn, MD and Chandru Sundaram, MD
Indiana University
Presented By: Keerthana Mohankumar

Introduction: Open nephroureterectomy (ONU) with excision of bladder cuff is the current gold standard for treatment of upper tract urothelial carcinoma (UTUC). Laparoscopic and robotic-assisted nephroureterectomy (LNU/RANU) are becoming more prevalent. However, current literature is lacking due to limited number of cases and follow up. This retrospective study compares outcomes for ONU to RANU.

Methods: REDCap electronic data capture was used to collect 120 nephroureterectomy cases for UTUC at Indiana University between the years of 2010-2018. Cases excluded if prior cystectomy. Data analyzed using IBM SPSS Version 24.0.

Results: Cohort included 23 ONU and 94 RANU/LNU cases. Patient age, Charlson comorbidity index, and final pathology were similar between groups. No difference seen between RANU and ONU for disease-specific (1851.434 days vs. 1439.375 days; p=0.242), overall (1803.142 days vs. 1461.875 days; p=0.246) and recurrence-free survival (1818.012 days vs. 977.812 days; p=0.214). RANU was superior to ONU for EBL (115.9 mL vs. 575 mL; p<0.001) and transfusion rate (6.3% vs. 21.7%; p=0.026). There was no difference in average operative time or median length of stay between ONU (267.5 minutes, 5 days) and RANU/LNU (250.35 minutes, 3 days, p=0.237) or percentage of Clavien grade 3a or higher complications. 91/120 patients underwent lymph node dissection (21/91 ONU and 70/91
RANU). Differences in the mean number and location of nodes (pelvic/hilar and paraaortic/interaortacaval/precaval) resected were not significant. **Conclusion:** Our results suggest that intermediate-term oncologic outcomes for patients undergoing RANU are not inferior to ONU.

**Podium #109**

**ROBOTIC NEPHRECTOMY FOR MASSIVE RENAL TUMORS**
Ronney Abaza, MD, FACS
OhioHealth
Presented By: Ronney Abaza, MD, FACS

**Introduction:** The role of robotic surgery in radical nephrectomy is controversial. If there is benefit over standard laparoscopy, it would more likely be for complex rather than straightforward nephrectomies such as very large tumors typically managed with open surgery. We routinely offered robotic nephrectomy (RN) regardless of size or complexity and evaluated the success rate for very large tumors (15-30cm) to assess whether RN may be justifiable in such cases.

**Methods:** All patients presenting with indications for radical nephrectomy were offered RN without any referred for open surgery regardless of size with patients consented for open conversion if necessary. A prospective database captured all cases, and those patients with tumors ≥15cm were reviewed.

**Results:** Fourteen patients had tumors of 15cm-30cm (mean 19cm) and underwent RN without exclusions. Mean age was 61yrs (35-78yrs) with mean BMI of 31kg/m^2 (21-41kg/m^2). One required partial liver resection, one splenectomy and distal pancreatectomy, one had a large caval thrombus, one a large renal vein thrombus, and one invaded psoas muscle, but all were completed robotically without conversions and no transfusions with mean operative time of 246min (164-337min). Seven underwent lymphadenectomy with mean of 16 nodes and 2 LN+. No patients required intravenous narcotics. Eleven were discharged on the first postoperative day (94%) with no 90d readmissions. The only complication was temporary renal insufficiency in one patient. Systemic therapy was begun as early as 2 weeks postoperatively.

**Conclusion:** Minimally-invasive surgery is feasible regardless of tumor size, and RN may aid in allowing this over open surgery.

**Podium #110**

**BARRIERS TO MINIMALLY INVASIVE RENAL SURGERY FOR RENAL MALIGNANCY: A NATIONAL CANCER DATABASE ANALYSIS**
Michael Moriarty, MD, Keegan Zuk, MD, Nicholas Gannon, Johnathon Doolittle, MD, Kenneth Jacobsohn, MD, Peter Langenstroer, MD, William See, MD and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Michael A. Moriarty, MD

**Introduction:** Minimally invasive surgery (MIS) has been shown to improve perioperative outcomes while maintaining oncologic efficacy for T1a renal masses. Socioeconomic barriers to these interventions have been suggested in prior literature. The goal of our study was to characterize MIS utilization patterns across the National Cancer Database (NCDB).

**Methods:** We identified all cT1aN0M0 who underwent radical and partial nephrectomy with curative intent in the NCDB from years 2010 to 2015. Standard descriptive analysis was utilized to compare socioeconomic variables, facility features, and facility surgical volume and define the associated likelihood of patients undergoing MIS in the form of robotic or laparoscopic resection of their disease.

**Results:** 88,809 patients were identified meeting our inclusion criteria. 58,008 patients (65.3%) were in the MIS cohort. Patients were less likely to undergo MIS if they were “black” (62.7%), “uninsured” (52.7%) or on “Medicaid” (62.7%), live in counties with median yearly household incomes <$38,000 (61.4%), and receive treatment at “Community Cancer Programs” (50.4%). All p-values for these variable groups were <0.001 on univariate analysis. MIS was utilized more commonly in higher volume institutions across all years analyzed (Figure).
Conclusion: There are significant socioeconomic, facility, and surgical volume factors associated with selection for MIS on cT1a renal masses in the National Cancer Database.

Podium #111
IMPACT OF ROBOTIC INTRACORPOREAL DIVERSION ON RECOVERY READMISSION IN CYSTECTOMY PATIENTS
Alice Crane, MD, PhD, Abhinav Khanna, MD, MPH, Vishnuvardhan Ganesan, MD, Anna Zampini, MD, Kyle Ericson, MD, Prithvi Murthy, MD, Michele Fascelli, MD, Byron Lee, MD, PhD and Georges-Pascal Haber, MD, PhD
Cleveland Clinic
Presented By: Alice L. Crane, MD, PhD

Introduction: Our aim was to discern whether robotic cystectomy with intracorporeal diversion confers perioperative benefits over open surgery and robotic extracorporeal.

Methods: We retrospectively analyzed the demographics, medical history, surgical events and recovery course for 671 patients who underwent cystectomy 2010-2017. Direct cost data was available for 194 patients 2016-2017. Patients were stratified by surgical approach. Data were analyzed using chi-squared analysis or the Kruskal-Wallis test.

Results: 208/671 patients underwent open cystectomy, 262 extracorporeal, and 201 intracorporeal. The total population had a median age of 68, were 91% white, with a median BMI of 27.7. 20% had DM and 60% had HTN. The three patient groups did not differ significantly in any of these domains. There was a higher proportion of females that underwent intracorporeal surgery than open (45/201 [22%] vs 26/208 [12%] p=0.03) and the intracorporeal group had a lower median eGFR than the open group (66.2 vs 71.5 p=0.047). There were more ileal conduit diversions performed in the intracorporeal group versus extracorporeal (167/201 [83%] vs 157/208 [76%] p<0.0001). Surgical events, recovery, readmission, and cost are displayed in the table below.

Conclusion: Patients undergoing a total intracorporeal cystectomy had the lowest EBL and the fastest recovery of the three approaches without an increase in cost over open surgery.
Podium #112
INTRAURETERAL INDOCYANINE GREEN EFFECTIVELY AUGMENTS URETERAL IDENTIFICATION DURING COMPLEX NON-UROLOGIC ROBOTIC SURGERY
Jason Joseph, MD1, David Yang, MD1, Scott Kelley, MD2, Kellie Mathis, MD2, Amy Lightner, MD2 and Boyd Viers, MD1
1Department of Urology, Mayo Clinic; 2Division of Colon and Rectal Surgery, Department of Surgery, Mayo Clinic
Presented By: Jason P. Joseph, MD

Introduction: Up to 10% of patients who undergo a non-urologic abdominoperineal operations may suffer a ureteral injury. Intraureteral indocyanine green (ICG) may offer an effective alternative to traditional preoperative stent placement for ureteral identification during robotic assisted surgery. We report our initial experience with intraureteral ICG during complex robotic colorectal surgery cases.

Methods: Patients who would potentially benefit from adjunctive ureteral identification during robotic colorectal surgery were prospectively identified. Intraoperatively, these patients underwent rigid cystoscopy (22 Fr) and a 5 Fr open-ended ureteral catheter was inserted up to 20 cm. 5 mL of 2.5 mg/mL ICG was injected as the ureteral catheter was withdrawn to the ureteral orifice. Intraureteral ICG was detected using near-infrared laser fluorescence technology (Firefly®).

Results: Successful intraureteral ICG-enhanced ureteral identification was performed in 9 of 10 patients (18 renal units) undergoing robotic colorectal surgery. Median time for ICG administration was 13 minutes (range, 2-21 minutes), and median duration of visualization was 532 minutes (range, 188-658 minutes). Intraureteral ICG was successful in 7 of 7 units in which externalized stents were immediately removed following instillation. No intraoperative ureteral injuries occurred. Failure occurred in 1 patient with severe peri-ureteral inflammation in which ICG immediately infiltrated surrounding tissue. Prostatic bleeding from instrumentation requiring hand irrigation occurred in 1 patient postoperatively.

Conclusion: Intraureteral ICG effectively augments ureteral identification during robotic colorectal surgery. Lengthy visualization times were feasible with a modified retrograde technique, including those cases with no externalized stenting.

Podium #113
OPEN VERSUS MINIMALLY INVASIVE CYSTECTOMY WITH URINARY DIVERSION FOR BENIGN INDICATIONS – DOES THE APPROACH MATTER?
Paurush Babbar, MD, Andrew Sun, MD, Shree Agrawal, BS, Ann Kim, BS, Daniel Hettel, BS, Hadley Wood, MD, Kenneth Angermeier, MD and Ryan Berglund, MD
Cleveland Clinic
Presented By: Andrew Y. Sun, MD

Introduction: The use of open and minimally invasive surgical (MIS) techniques for benign urinary conditions requiring cystectomy and urinary diversion (CxUD) is poorly characterized. We assessed post-operative outcomes at 30, 90, and until last follow-up for patients receiving either open or MIS CxUD.

Methods: Procedures performed between 2006-2016 were retrospectively reviewed for patient demographics, initial diagnosis, 30 and 90-day readmissions, and any post-operative complications. CxUD for malignant indications and in patients below 18 years of age were excluded. Chi-square and t-test analyses assessed demographics and indications. Complications were measured by univariate and multivariate logistic regression models.

Results: Of 103 patients meeting selection criteria, 82 underwent open (79.6%) and 21 underwent MIS (20.4%) CxUD. Mean age was 65 and 57 years for open and MIS respectively (p=0.03). Patient diagnoses were neurogenic bladder (38%), fistulae (22%), radiation cystitis (18%), interstitial cystitis (15%) and urethral stricture disease (6%). The estimated blood loss (683 vs. 721 cc, p=0.76) and operative time (417 vs. 412 minutes, p=0.86) did not differ between open and MIS. Among patients who had prior radiation, 37 (95%) underwent open CxUD (p=0.003). Open CxUD was performed on 70 (84%) patients with a previous abdominal surgery (p=0.015). Either surgical technique was not significantly associated with any postoperative complications.
Conclusion: CxUD for benign conditions did not differ significantly in patient selection and post-operative complications between open and MIS approaches. Short and long term outcomes demonstrate support for use of either surgical technique and should be optimized to surgeon comfort and efficiency.

Podium #114
SAFETY AND FINANCIAL IMPACT OF CLINICAL PATHWAY WITH SAME-DAY DISCHARGE FOLLOWING ROBOTIC PROSTATECTOMY
Matthew Ferroni, MD, Pablo Sierra, MD and Ronney Abaza, MD, FACS
OhioHealth
Presented By: Ronney Abaza, MD, FACS

Introduction: The average length of stay following robotic-assisted radical prostatectomy (RARP) is 24-48hrs and potentially longer on average in the community setting. We evaluated the safety and cost implications of same day discharge at a community-based institution.

Methods: Beginning September 2016, we adjusted our RARP clinical pathway to allow same-day discharge. This included ultra-low pneumoperitoneum of 6mmHg, immediate ambulation, immediate diet, and scheduled non-narcotic analgesia with optional oral but no intravenous narcotics. Patients were given the option for same-day discharge. We evaluated our prospective database for safety of same-day discharge and 30-day complications or readmissions.

Results: Of 306 RARPs in 11 months following protocol initiation, 126 patients (41.1%) were discharged the day of surgery. Characteristics included mean age 61.0±6.8yrs, BMI 28.9±3.6kg/m2. Five patients (3.9%) had a Clavien-Dindo grade I-III complication with no grade IV-V complications, including urinary retention in three, port site abscess requiring bedside drainage in one, and cystitis treated with oral antibiotics in one. The rate of 30-day return to the emergency department for any cause was 3.2% as compared with 7.5% before same-day discharge was instituted with no 30-day readmissions. The estimated charge for overnight postoperative admission at our institution is $2,109, such that the approximate reduction in charges was $265,734 over eleven months without a resulting increase in costs from emergency room visits or readmissions.

Conclusion: Same-day discharge following RARP is safe for a subset of patients meeting appropriate post-operative criteria and may lead to significant savings in healthcare costs.

Podium #115
IMPROVING THE SAFETY AND EFFICIENCY OF DIRECT HOSPITAL TRANSFERS
Alice Crane, MD, PhD, Benjamin Abelson, MD, Abhinav Khanna, MD, MPH, Andrew Nguyen, MD, Daniel Sun, MD, Michelle Ponziano, RN, Edmund Sabanegh, MD, Venkatesh Krishnamurthi, MD and Howard Goldman, MD
Cleveland Clinic
Presented By: Benjamin Abelson

Introduction: The current standard of verbal patient handoff for outside hospital transfers to our tertiary care center may result in delayed notification of the house staff on-call. Lapses in communication result in a delay in care and poor caregiver/patient satisfaction. We aim to decrease the time to delivery of care and increase caregiver satisfaction via the implementation of a real-time, electronic, customizable, transfer dashboard.

Methods: In conjunction with representatives from our electronic medical record company (Epic Systems), a “transfer dashboard” was generated to automatically display patient and caregiver information for all inpatient hospital transfers from outside facilities. Primary outcome was the time from patient arrival to the time of first order placement. Secondary outcome was resident and nurse satisfaction determined by anonymous survey before and after implementation of the dashboard. Our study included 56 patients prior to dashboard implementation and 35 patients after implementation.

Results: Before EPIC dashboard implementation, delays in care of more than 2 hours occurred in 21.4% of urology transfer patients. This was reduced to 8.6% following dashboard implementation. At baseline, 72.7% of surveyed urology residents were
'dissatisfied' or 'very dissatisfied' with the transfer process. Resident dissatisfaction with the transfer process was reduced from 72.7% at baseline to 18% post-intervention.

**Conclusion:** The implementation of a real-time, customizable tool led to reductions in door-to-order time as well as improvements in caregiver satisfaction. This intervention will provide a sustainable improvement in team communication as well as provide high fidelity and timely delivery of patient information.

**Podium #116**  
**A CLOUD-BASED APPLICATION FOR PREVENTING RETAINED URETERAL STENTS**  
Christopher Tam, MD¹, Mark Newman, PhD², Michael Engelsbe, MD¹ and John Hollingsworth, MD¹  
¹Michigan Medicine; ²University of Michigan School of Information  
Presented By: Christopher Tam, MD

**Introduction:** As many as 12.5% of patients who undergo ureteral stent placement fail to have their stent removed in a timely fashion. Because retained ureteral stents can be a source of patient morbidity, there is an urgent need for health information technology solutions to help urologists track their stented patients.

**Methods:** In this context, we developed a cloud-based application that is seamlessly integrated into our institution's electronic health record (Figure). The application automatically registers patients who undergo ureteral stent placement to a list and then follows them through their postoperative course to ensure removal. To validate the application's performance, we reviewed the medical records of patients who underwent ureteral stent placement for any indication at our institution between February 1, 2018 and February 26, 2018.

**Results:** Over the study period, a total of 43 patients were treated by 5 endourologists at 2 different practice locations. The most common indication for ureteral stent placement was following ureteroscopy (n=30; 70%). All patients were successfully captured by the application. Further, it detected that 15 patients (35%) did not have return visits scheduled for stent removal. These patients may have otherwise been missed.

**Conclusion:** Our application performs exceedingly well and causes minimal disruption to provider workflow. Its broader implementation may improve patient safety.

**Podium #117**  
**INDICATIONS FOR REOPERATION AND READMISSIONS AFTER MAJOR SURGICAL PROCEDURES IN UROLOGIC ONCOLOGY. A NATIONAL DATABASE ANALYSES**  
Saad Hatahet¹, Mohamed Hendawi, MD² and Ahmad Shabsigh, MD²  
¹The Ohio State University, Wexner medical center; ²The Ohio State University  
Presented By: Saad Hatahet, MD

**Introduction:** Unplanned post-operative procedures are associated with significant morbidity and financial burden. This study defines the post-operative complications and readmissions leading to unplanned re-operation following major surgeries in urologic oncology.

**Methods:** The National Surgery Quality Improvement Program(NSQIP) database between (2006 -2015) was analyzed. All patients who underwent 21 major surgeries for urologic cancers were included. Readmission, reoperation rates, and the most common complications within 30-postoperation were evaluated for each surgery. Indication for reoperation and readmission were analyzed for surgeries performed between 2012-2015.
Results: A total of 78,614 patients were included in the study, the readmission, reoperation and mortality rates of all oncologic urology surgeries were (5.6%, 2.1%, and 0.2%) respectively, the rate of any complication was 32.7%, severe complication with Clavien grade 4 and 5 were 13% of overall complications. Open radical cystectomy (ORC) was the most morbid surgery with the highest complications, readmissions, and reoperations rates (66.4%, 19.3%, and 5.9%) respectively, 27% of ORC complication were Clavien grade 4 and 5 within the 30-days follow-up. The vast majority of the 30-days postoperative complication (73.3%), and death (60.1%) occurred within the first two weeks after surgeries. Infection was the most frequent indication for readmissions followed by gastrointestinal (GI) and genitourinary (GU) indications (25%, 14%, and 12% respectively). The most common indications for reoperation were GU followed by GI and wound complications (26%, 20%, and 16% respectively).

Conclusion: Identifying the most common indications for readmissions and reoperation after major surgeries in a surgery specific manner is essential for post-op patients care. Analyses of NSQIP data provides a benchmark to help hospitals and surgeons reduce unplanned post-operative readmissions and reoperations.

Podium #118
CAN IMPROVED COMMUNICATION PREVENT UNNECESSARY DELAYS AND COST IN THE OPERATING ROOM?
Sara Maskal, BS1, Donald Fedrigon, BS1, Emily Rose, BS2, Rajat Jain, MD3, Manoj Monga, MD3 and Sri Sivalingam, MD3
1Case Western Reserve University School of Medicine; 2Cleveland Clinic Lerner College of Medicine; 3Cleveland Clinic
Presented By: Sara Maskal, BS

Introduction: Operating room (OR) expenses contribute significantly to healthcare costs. Baseline OR charges are $64-$115 per minute at our tertiary referral stone center. We sought to characterize OR delays during procedures for treatment of nephrolithiasis. Methods: We identified ureteroscopy (URS) and percutaneous nephrolithotomy (PCNL) procedures performed at our institution by two endourologists. All operating room staff, excluding surgeons, were blinded to the study. A smartphone-accessible data collection instrument was created through the RedCap system. All time-related metrics and any delays that prevented case progression were recorded. Delays were categorized as: 1. missing/contaminated equipment, 2. missing personnel, 3. equipment malfunction, or 4. interruptions due to case complexity/challenge. The first two categories were considered preventable, the latter two non-preventable.

Results: Forty URS and 18 PCNL cases were included with a total of 56 delays in 35 (65%) cases. Twelve (67%) PCNLs and 23 (58%) URSs had delays (p=0.57). Mean delay length was 3.5 ± 3.15 minutes. Pre-start delays (n=17) were 4.46 ± 3.51 minutes on average while intraoperative delays (n=39) were 3.08 ± 2.93 minutes (p=0.167). Delays were evenly spread amongst the categories: 16, 15, 12, and 13, respectively. Thirty-one (55%) delays were preventable (mean 3.7 ± 3.15 minutes) while 25 (45%) were non-preventable (mean 3.23 ± 3.18 minutes) (p=0.58). This may translate to $236-$425 in preventable charges per case.

Conclusion: We demonstrate that routine endourological cases are fraught with preventable delays. Clear communication protocols between OR personnel and for equipment processing/set-up may result in cost reduction and improved efficiency.
Introduction: Reports of benefits of preoperative immunonutrition in urologic surgeries are mixed. We reviewed cases of cystectomy and complex open radical nephrectomy after initiating a nutrition “prehabilitation” program in our urology clinic.

Methods: In a quality improvement effort, consecutive patients undergoing radical cystectomy (n=46) or complex open nephrectomy (n=11) were offered 5 days of immunonutrition drinks, 3/day, before surgery. Each drink provided 200 kcal, 18 g protein, and essential micronutrients as well as 4.2 g L-arginine and 1.3 g medium chain triglycerides. Patients’ consumption of the drinks and pre- and post-surgical parameters were documented.

Results: Patients were divided into groups: those in group 1 (n=36) consumed 13-15 drinks over 5 days before surgery; those in group 2 (n=21) consumed <12 drinks (of these, 6 consumed 7-11 drinks, 4 consumed 3-5, and 11 consumed none). Age (68.1 vs. 67.6 y; P=0.83), preoperative body weight (186 vs. 208 lbs; P=0.12), and preoperative prevalence of malnutrition (14% for each) were the same for both groups. Length of stay was lower in group 1 (8.5 vs. 16 days; P=0.001) as was amount of weight lost (8.2 vs. 14 lbs; P=0.019). The prevalence of postoperative total parenteral nutrition support was 6 times lower in group 1 (5.6 vs. 38%). Instances of ileus and C. difficile infection were also lower in group 1 (11 vs. 29% and 5.6 vs. 14%, respectively).

Conclusion: Preoperative supplementation with an arginine-enriched, high-protein beverage was associated with better surgical outcomes in patients who underwent cystectomy or complex radical open nephrectomy.

Introduction: This study sought to describe the type and amount of analgesia utilized by patients following urologic surgery, contributing factors and patient satisfaction with perioperative analgesia.

Methods: Patients undergoing urologic surgical procedures at a tertiary referral center were offered a survey to assess usage of prescribed opioids and satisfaction with postoperative analgesia. Descriptive and comparative statistics were conducted including multivariate linear regression analysis, assessed type, number, usage, disposal methods of opiates, and patient satisfaction (Scale 0-5).

Results: Surveys were completed by 250 patients. 79% of patients received opiates. The patient-reported median number of opioids tablets prescribed was determined for the cohort and type of surgery. The median quantity of opiates used was determined for each surgical procedure: open prostatectomy [4, IQR: 0-10], robotic prostatectomy [5, IQR: 0-18], open radical nephrectomy [5, IQR: 1.5-15], laparoscopic radical nephrectomy [5, IQR: 0-25], open partial nephrectomy [0.5, IQR: 0-1.8], robotic partial nephrectomy [10, IQR: 0-15], open cystectomy [10, IQR: 0-15], robotic cystectomy [9, IQR: 0-17.3], ureteroscopy [10.5, IQR 0-15.8] and TURP [0, IQR: 0-4.25]. Excess opioids were retained by 52% of patients. Increasing age [OR: -0.19, p=0.003] and reported satisfaction with analgesia (OR: 9.01,
p=0.047), were associated with patient-reported opiate use. Patients reported being satisfied or very satisfied in 78% and dissatisfied in 12%.

**Conclusion:** Patient reported use indicates that a fraction of the prescribed opioids are consumed after urologic surgery and that patient satisfaction with their overall analgesic regimen is high. Age and satisfaction drive patient-reported prescribed opioid use.

**Podium #121**

**FLUOROQUINOLONLE USAGE AFTER FDA BLACK BOX WARNING: DIVISION OF UROLOGY RESPONSE AND IMPACT ON UTI RATES FOLLOWING SPECIFIC UROLOGIC PROCEDURES**

Austen Slade, MD and Gary Faerber, MD
University of Utah
Presented By: Gary J. Faerber, MD

**Introduction:** Fluoroquinolone prophylaxis had been standard practice for most urological procedures involving instrumentation of the urinary tract. The FDA in 2016 required label changes to fluoroquinolones to include a black-box warning. The American Urological Association (AUA) recommended against their use in routine perioperative prophylaxis and uncomplicated urinary tract infections (UTIs). We looked at division of urology fluoroquinolone use post FDA warning. We also looked at the effects of other communications on fluoroquinolone use.

**Methods:** 2,750 patients underwent cystoscopic procedures from May 2015 - April 2017. Perioperative antibiotic use and post-operative UTIs.

**Results:** 1386 patients pre-FDA announcement underwent cystoscopic procedures; 69.26% used perioperative fluoroquinolones. In quarter 1 (Q1) post-announcement fluoroquinolone usage was 66.95% (n=239 of 357, P=0.4011 compared to pre-announcement), Q2 (discussion with resident) 47.21% (n=169 of 358, P<0.0001 compared to pre-announcement), Q3 (discussion at faculty meeting) 20.34% (n=72 of 354, P<0.0001 compared to pre-announcement), and Q4 (discussion at grand rounds) 21.02% (n=62 of 295, P<0.0001 compared to pre-announcement). Overall infection rate one year prior to the announcement was 2.45% (n=34 of 1386) and 2.13% (n=29 1364) in the year since (p=0.5750). UTI rates by quarter following the announcement were Q1 2.52% (n=9, P=0.9394 compared to pre-announcement), Q2 1.40% (n=5, P=0.2309 vs. pre-announcement), Q3 2.82% (n=10, P=0.6922 vs. pre-announcement), Q4 1.69% (n=5, P=0.4309 vs. pre-announcement).

**Conclusion:** Peri-operative fluoroquinolone usage post 2016 FDA announcement decreased significantly and was not associated with an increase in post-operative UTIs. Discussion with residents, faculty using different venues may be beneficial to improve compliance.

**Podium #122**

**THE LEARNING CURVE REQUIRED TO REACH ACCEPTABLE PROSTATE CANCER DETECTION RATE ON MAGNETIC RESONANCE IMAGING TARGETED BIOPSY OF THE PROSTATE**

Grace Yaguchi, MD, Mustafa Deebajah, MD, Richard Thompson, Milan Pantelic, MD, Hakmin Park, MD, James Peabody, MD, Mani Menon, MD, Shaheen Alanee, MD and Ali Dabaja, MD
Henry Ford Health System
Presented By: Grace Yaguchi, MD

**Introduction:** Our objective was to identify the experience needed for a multidisciplinary team to reach an acceptable level of prostate cancer detection in identified lesions on mpMRI with MRI-TB technology.

**Methods:** A prospective data collection with retrospective analysis of MRI-TB performed at a single institution. The patients were selected based on lesions identified on mpMRI and graded as PIRADS 3 or above. A patient undergoing MRI-Fusion biopsy had between 1 and 4 lesions identified per study. Cancer was defined as pathologic assessment of Gleason 3+
3 = 6 score. Analysis was performed on the cancer detection rate by lesion and cumulatively evaluated by time and by total number of lesions biopsied in this manner. **Results:** The cumulative cancer detection rate at our institution in PIRAD 3 or greater was, 48 percent, 94 lesions positive for prostate malignancy out of 194 total lesions identified, marked and targeted on MRI-TB. The cancer detection rate demonstrated an early linear increase that plateaued to the normalized cumulative cancer detection rate. The cancer detection rate reached this cumulative average after 1 year of time and 65 lesions biopsied (Graph 1).  
**Conclusion:** Our multidisciplinary team required a biopsy of 65 lesions to reach a stable cumulative cancer detection rate.

Podium #123  
**ROBOTIC INSTRUMENT FAILURE - A CRITICAL ANALYSIS OF CAUSE AND QUALITY IMPROVEMENT STRATEGIES**  
Alex Tapper, MD¹, Derek Leale², Gregory Megahan³, Kimberly Nacker, RN⁴ and Jason Hafron, MD¹  
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Presented By: Alexander D. Tapper, MD

**Introduction:** Our institution introduced a quality improvement initiative to track robotic instrument failures. Imperative to our analysis are rates of failure, financial implications of failures, and factors suggesting common mechanisms of failure. Herein, we report outcomes of our robotic instrument failure quality initiative program.  
**Methods:** Beginning January 2014 a quality reporting system was started for failed robotic equipment. Staff returned failed instruments with incident reports to our central processing department, instruments were subsequently returned to the manufacturer (Intuitive Surgical Inc, Sunnyvale CA) for analysis and reimbursement. Failure analysis and reimbursement rates were recorded and correlated with procedure and surgical specialty.  
**Results:** During the study period 3935 cases were performed with reported instrument failure incidence of 6.2%. Etiology of instrument failure was most commonly tip/wrist (46.9%) and cable failure (30.0%), with shaft failure (3.2%) being least common. Colorectal Surgery had the highest incidence of instrument failure, and Urology the lowest. Reimbursement rate was 57.9%, the most common reason for denial being mishandling or misuse, determined by manufacturer analysis. Important to note, is that 48.6% of total failures were not reported with an associated case or specialty. Failure rates were lowest in 2015 at 4.0% and highest in 2016 at 7.7%.  
**Conclusion:** Improved process flow of reporting instrument failure is necessary to better track incidence and etiology of instrument failures. Our analysis demonstrates room for cost savings stemming from improved training of surgeons, operating room, and central processing staff in handling of equipment to prevent such high rates of denied reimbursement.
Podium #124
EVALUATION OF A SIMULATION MODEL FOR TRAINING AND ASSESSMENT OF URINARY CATHETERIZATION SKILLS
Colby Dixon, MD¹, Benjamin Marsh, MD¹ and Kristin Chrouser, MD, MPH²
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Presented By: Colby A. Dixon, MD

Introduction: Urinary catheterization is widely performed by healthcare providers, yet few high-quality models exist to help learners develop skills. The purpose of this study is to evaluate the fidelity and usability of a novel catheter placement simulation model.

Methods: Providers who routinely place catheters as part of their clinical duties were recruited to participate. Each participant catheterized three different models of the novel simulator (normal male, male with prostate hypertrophy [BPH], and normal female) as well as a normal male model of a commercially available simulator. Participants then assessed the fidelity and usability of each model and were asked to describe ideal model characteristics. The results were analyzed using descriptive statistics for central tendency and frequency distribution.

Results: 27 providers with a mean of 18 catheterizations per month participated in the study. Participants found that the novel male, novel female, and commercially available male models all provided adequate feedback and felt moderately realistic (median 4 on a 6 point Likert scale). The novel BPH model was rated poorly for simulating BPH pathology (median 1 on a 6 point scale). Participants identified normal anatomy, gender variability, and BPH as the most important characteristics desired in a model.

Conclusion: The novel model provides a simulation of normal male anatomy similar in fidelity and usability to a commercially available simulator model. It also provides a realistic and easily usable female anatomy model. The novel model was suboptimal for simulating catheter placement in BPH. This represents an area of focus for future simulator development.

Podium #125
OUTPATIENT INFUSION CENTER ASSOCIATED WITH REDUCED HOSPITAL READMISSIONS FOLLOWING RADICAL CYSTECTOMY
Abhinav Khanna, MD, MPH, Anna Zampini, MD, Alice Crane, MD PhD, Kyle Ericson, MD, Michele Fascelli, MD, Prithvi Murthy, MD, Byron Lee, MD, PhD and Georges-Pascal Haber, MD, PhD
Cleveland Clinic
Presented By: Abhinav Khanna, MD, MPH

Introduction: Radical cystectomy has the highest hospital readmission rate of any major urologic surgery. We aim to assess the impact of a post-operative outpatient infusion center on hospital readmissions following radical cystectomy.

Methods: A post-operative outpatient infusion center for patients undergoing radical cystectomy was introduced at our institution in October 2016. Patients were scheduled for an outpatient clinic visit approximately 1 week after discharge following cystectomy. This clinic visit was coupled with an intravenous infusion of 1 liter normal saline in an outpatient infusion center. Baseline variables were compared between infusion and no-infusion groups using Fisher Exact Test and Wilcoxon Rank Sum Test. Rates of unplanned returns to the hospital were compared between groups using Fisher Exact Test.

Results: A total of 147 patients underwent radical cystectomy over the study period. Of these, 34 (23.1%) received a post-operative normal saline infusion at our outpatient infusion center, while 113 (76.9%) did not. The median time from discharge to outpatient infusion was 7 days (IQR 6-9). As shown in Figure 1, 30-day hospital readmissions were significantly lower in the infusion group (0/34, 0% vs 19/113, 16.8%; p=0.007).

Conclusion: The use of a post-operative outpatient normal saline infusion center was associated with significant reductions in 30-day hospital readmissions following radical cystectomy.
Podium #126
ASSESSMENT OF HEALTH–RELATED QUALITY OF LIFE IN PATIENTS WITH CYSTINURIA ON TIOPRONIN THERAPY
Frank Modersitzki, MPH¹, David Goldfarb, MD², Ross Goldstein, MD, MBA³, Roger Sur, MD⁴ and Kristina Penniston, PhD, RDN⁵
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Presented By: Frank Modersitzki, MPH

Introduction: Cystinuria comprises <1% of all types of kidney stones and is associated with impaired health–related quality of life (HRQOL). Tiopronin reduces the amount of poorly soluble urinary cystine. Limited evidence is available regarding the HRQOL of patients with cystinuria treated with tiopronin. The objective was to assess the HRQOL of patients treated with tiopronin vs. those not treated with tiopronin (non–tiopronin).

Methods: Patients on tiopronin were recruited through a specialty care pharmacy and compared with patients in the non–tiopronin group identified from the Cystinuria Contact Registry at NYU School of Medicine. Patients received a survey about their experiences with stones, the Wisconsin Stone Quality of Life questionnaire (WISQOL) and SF–36v2. Analyses included independent sample t–tests, ANOVA, Fisher’s exact test, and correlations. Work funded by Retrophin.

Results: The survey was completed by 267 patients in the tiopronin and 45 in the non–tiopronin group. Time between first stone and cystinuria diagnosis in the tiopronin group was 4 years vs. 1 year for the non–tiopronin. History of shock wave lithotripsy was 46% for tiopronin vs. 33% for non–tiopronin. In patients on tiopronin, the adherence rate was 84%. HRQOL was significantly better in the tiopronin vs. non–tiopronin group for total WISQOL score (p<0.05) and for all but one SF–36v2 domain (p<0.05) when controlled for the time from last stone event.

Conclusion: Patients with cystinuria taking tiopronin reported better HRQOL on the WISQOL and SF–36v2. Healthcare providers should consider the full impact of cystinuria and offer measures that optimize traditional stone-related outcomes and HRQOL.

Podium #127
THE EFFECT OF MAGNESIUM SUPPLEMENTATION ON URINARY CITRATE EXCRETION
Natasza M. Posielski, MD¹, R. Allan Jhagroo, MD², Stephen Y. Nakada, MD¹ and Kristina L. Penniston, PhD, RD¹
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Presented By: Natasza Posielski, MD

Introduction: Urinary citrate (UCit) is a well-described target of the medical management of calcium nephrolithiasis. We observed that some patients with low UCit also had lower
urinary magnesium (UMg). We hypothesized that Mg supplementation could increase both UMg and UCit excretion in those with low UCit.

**Methods:** Patients seen in a multidisciplinary stone clinic between 2009-2016 with low UMg (≤70mg/day) were stratified based on those to whom Mg supplementation (300-500 mg/d) was recommended. Primary outcomes included changes in UMg and UCit excretion.

**Results:** Of 126 patients, 43 (34%) were recommended Mg supplementation (Mg+) while 83 (66%) were not (no-Mg). There was no difference between groups in history of calcium stones (p=0.16) or alkali prescriptions (p=0.85). Baseline UCit excretion was similar (352 vs 412 mg/d for Mg+ and no-Mg; p=0.26). A rise in UMg was observed (46 to 68 and 54 to 71 mg/d for Mg+ and no-Mg; p<0.001 for both). Yet, UCit increased only in the supplemented group (figure, A). Change in UCit (∆) differed by baseline UMg (figure, B).

**Conclusion:** UMg excretion was increased with Mg supplementation. Lower UCit increased significantly in patients on Mg supplementation vs. those who were not. Certain patients may require correction of low UMg as part of medical management for hypocitraturia.

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**Podium #128**

**CAN A PRE-URETEROSCOPY MEDICATION BUNDLE DECREASE POSTOPERATIVE PAIN AND UNPLANNED HEALTHCARE ENCOUNTERS?**

Lee Baumgarten, MD, Alex Borchert, MD, Ben Eilender, MS and David Leavitt, MD

Henry Ford Hospital

Presented By: Lee C. Baumgarten, MD

**Introduction:** The purpose of this study is to determine if a pre-ureteroscopy bundle (PUB), consisting of Belladonna and Opium Suppository, Tylenol, and Toradol (BOTT) medication, all given before ureteroscopy, can reduce postoperative pain and unplanned healthcare encounters after ureteroscopy.

**Methods:** Two years of consecutive ureteroscopic procedures (2016-2017) performed by a single surgeon for management of nephrolithiasis or ureteral mass were reviewed. During the first year (2016), PUB BOTT was not administered preoperatively and patients received standard perioperative pain management. During the second year (2017), patients received PUB BOTT unless medical contraindications existed. Outcomes investigated included narcotic pain medication requirements, time in post-anesthesia care, and unplanned healthcare encounters. Student's t-test was used to compare groups and chi-squared analysis was used to compare outcomes.

**Results:** In 2016 and 2017, 207 patients underwent ureteroscopy; 85 of these patients received the pre-ureteroscopy bundle. Patient characteristics were similar for the two groups, including age, American Society of Anesthesia score, Body Mass Index, operative time, stone size, and time in post-anesthesia care. In the control group, 64 patients (52.9%) who received standard perioperative pain management required intravenous medication for postoperative pain compared to 24 (28.2%) patients in the study group, p< 0.05. Seventeen
patients (14.2%) in the control group required an unplanned healthcare encounter postoperatively, compared to 8 (9.4%) of the study group, p= 0.18

**Conclusion:** This retrospective review suggests that patients receiving PUB BOTT prior to ureteroscopy experience less postoperative pain. Further study is necessary to determine how this affects unplanned hospital encounters.

**Podium #129**

**REDUCING FLUOROSCOPY TIME IN PERCUTANEOUS NEPHROLITHOTOMY**

Michael Sourial, MD2, Andrew Todd, MD1 and Bodo Knudsen, MD3

1Ohio State University Dept. of Urology, Resident; 2Endourology Fellow; 3Associate Professor Urology

Presented By: Michael Sourial, MD

**Introduction:** There has been increasing interest and vigilance to lower the ionizing radiation exposure in the management of stone disease, particularly during percutaneous nephrolithotomy (PCNL) performed using fluoroscopic guidance. We have become increasing mindful of fluoroscopy time (FT) usage in PCNL, and report our FT before and after changing our technique.

**Methods:** Retrospective chart review of all PCNL cases 1/1-10/30/17, divided into two groups before and after practice change (May 2017). We used low-dose and pulsed mode (4 fps) whenever feasible. Measures implemented to reduce FT included using spot images instead of live fluoroscopy, increased reliance on tactile feedback, and using shorter segments of live fluoroscopy. FT was the primary outcome. ANOVA was used to evaluate the difference in FT between groups 1 and 2, after accounting for associations between FT and patient demographics (BMI and stone burden).

**Results:** 100 total PCNL procedures were performed in 96 patients, 48 in each group. The median age, BMI, and stone burden was 55.0yrs, 32.0kg/m2, and 27.3 x 29.2mm in group 1, and 61.0yrs, 30.0, and 29.4 x 33.6mm in group 2. 6 patients in group 1 and 7 patients in group 2 had anatomical abnormalities (e.g. horseshoe, duplex kidney, etc.). The median (range) FT in group 1 was 240 (56.0-916.0) and in group 2 was 65.5 (13.0-561.0) seconds, (p<0.0001).

**Conclusion:** FT in PCNL can be significantly reduced by adopting simple techniques and being increasingly vigilant of its usage, thereby reducing radiation exposure to the surgeon and the patient.

**Podium #130**

**ASSESSING THE UTILITY OF STONE VOLUME TO PREDICT SUCCESS OF MEDICAL EXPULSIVE THERAPY IN PATIENTS PRESENTING WITH ACUTE RENAL COLIC**

Sara Maskal, BS1, Rajat Jain, MD2, Leonard Kahn, MD2, Jason Milk, DO2 and Sri Sivalingam, MD2

1Case Western Reserve University School of Medicine; 2Cleveland Clinic

Presented By: Sara Maskal, BS

**Introduction:** In patients presenting with ureteral stones, longest dimension (LD) is commonly used to make clinical decisions. Software-based methods can estimate stone volume (SV), a more accurate and consistent measurement than LD in prior studies. We assessed SV as a predictor for spontaneous stone passage in patients prescribed medical expulsive therapy (MET).

**Methods:** An ER physician identified patients presenting with single ureteral stone and discharged on MET. CT images with 1mm cuts were saved and LD was recorded. Exclusion criteria: urinalysis suggestive of infection, non-ureteral stones, or immediate surgical intervention due to intractable pain, vomiting or AKI. A radiologist used the AGFA IMPAX Volume Viewing 3D software to estimate SV by region growing algorithm (RG) and ellipsoid formula (EF). We assessed spontaneous passage or surgical intervention via EMR and patient phone call.

**Results:** Of 71 patients identified, 47 were included (mean age 53±16.7 years, 24% female). Twenty-four were excluded for the following reasons: 1 mm cuts were unsaved, stones were in the bladder on CT review, or loss to follow-up. Mean LD was 4.93±2.07mm.
Mean SV was similar by EF (0.053±0.061cm³) and RG (0.051±0.055cm³) (p=0.28). Twenty-nine (62%) stones passed, 18 (38%) did not. Mean LD for passed stones was 4.23±1.75mm versus 6.23±1.85mm(p=0.001). Mean EF volume was 0.030±0.037 cm³ versus 0.093±0.016cm³ (p=0.0005). Mean volume by RG was 0.029±0.028cm³ versus 0.089±0.063cm³ (p=0.0001).

**Conclusion:** We demonstrate significantly smaller volume of spontaneously passed stones versus those requiring intervention. SV is less operator dependent and more consistent between trials than LD.

Podium #131

**UPFRONT URETEROSCOPY: A MISSED OPPORTUNITY**

Eric Kirshenbaum, MD, Chirag Doshi, MD, Robert Blackwell, MD, Gopal Gupta, MD, Thomas Turk, MD and Kristin Baldea, MD

Loyola University Medical Center

Presented By: Chirag Doshi, MD

**Introduction:** Patients admitted to the hospital with an acute episode of non-infected urolithiasis, are candidates for medical expulsive therapy, ureteral stent placement or upfront ureteroscopy. The purpose of this study is to assess utilization of upfront ureteroscopy by analyzing hospital revisits and associated health care costs.

**Methods:** The Healthcare Cost and Utilization Project State Inpatient Database for the state of California was utilized for years 2007-2011. Patients who were admitted to the hospital with a primary diagnosis of kidney or ureteral stone in the absence of an urinary tract infection were identified. The initial treatment modality utilized was assessed and a multivariate logistic regression model was used.

**Results:** 53,336 patients were identified. 26.91% underwent ureteral stent placement versus 25.58% underwent upfront ureteroscopy. On multivariate logistic regression model fit with factors significant on univariate analysis, those who underwent upfront ureteroscopy were less likely to have an emergency room visit (OR 0.75, 95% CI 0.67-0.84, p<0.001) or outpatient ureteroscopic procedure within 90 days (OR 0.25, 95% CI 0.22-0.28, p<0.001). Furthermore, the cost of an admission with a ureteral stent placement is $9004 vs. $10,003 for upfront ureteroscopy. Based on established billing data, a subsequent outpatient ureteroscopy costs between $1739-$3483.

**Conclusion:** Patients who undergo upfront ureteroscopy for the treatment of a non-infected stone have fewer postoperative emergency room visits than patients who undergo stent placement alone. Additionally, patients who undergo ureteral stent placement alone will require a later outpatient ureteroscopic procedure and therefore there is a clear economic advantage to upfront ureteroscopy.

Podium #132

**UROLOGIST OBTAINED SUPRACOSTAL, UPPER POLE ACCESS FOR PERCUTANEOUS NEPHROLITHOTOMY IS SAFE AND EFFECTIVE.**

Joshua Altschuler, BS¹, Rajat Jain, MD², Vishnu Ganesan, MD³ and Manoj Monga, MD²

¹Case Western Reserve University School of Medicine; ²Cleveland Clinic Foundation; ³University of Texas Southwestern Medical Center

Presented By: Joshua H. Altschuler, BS

**Introduction:** Percutaneous nephrolithotomy (PCNL) is the preferred treatment modality for kidney stones > 2cm. Mini and supine PCNL have been presented as alternatives to traditional techniques. We investigated the complication profile for traditional upper pole access PCNL performed by a single surgeon to assess need for evaluation of these techniques in our practice.

**Methods:** We identified patients who underwent upper pole access PCNL by a single surgeon at a tertiary stone referral center between 10/2010 and 4/2017. Access was obtained endoscopically/fluoroscopically with balloon dilatation of the tract. We recorded rates of blood transfusion, angioembolization, chest drain insertion, ICU admission and 30-day readmission and assessed risk factors with multivariable logistic regression.
Results: After exclusion of cases with access by interventional radiology or in mid/lower pole, 375 PCNLs were included. Mean age was 56.7 ± 14.3 years old, mean BMI was 33.2 ± 9.3 kg/m2, and 59% of patients were women. Mean operative time was 99.2 ± 46.2 minutes. Median length of stay was 1.1 days. 6.6% of patients required transfusions. Patients with preop hemoglobin <10mg/dL were more likely to need transfusion (28% vs 5.1%, p<0.005). Rates of angioembolization, chest drain, ICU admission and 30-day readmission were 0.5%, 4%, 4.5%, and 7.5%, respectively. There was an association between male gender and readmission (10.3% vs 5.5%, OR=3.1, p=0.012).

Conclusion: At a tertiary referral center, a large series of PCNLs with supracostal upper pole access demonstrated a complication profile similar to that in recent literature, obviating need for mini or supine PCNL.

Podium #133
LASER PAPILLOTOMY FOR CHRONIC FLANK PAIN – A REASSESSMENT OF EFFICACY IN THE ERA OF AUTOMATED OPIOID PRESCRIPTION MONITORING
Karen Stern, MD and Manoj Monga, MD
Cleveland Clinic
Presented By: Anna E. Faris, BA

Introduction: To determine if laser papillotomy for patients with chronic flank pain decreased narcotic pain medication usage post-surgery. Specifically the introduction of state-specific automated prescription reporting systems offers the opportunity for a more objective longitudinal assessment of outcomes in patients who often utilize multiple providers for pain management.

Methods: Patients who underwent laser papillotomy for chronic flank pain at a single institution between January 2013 and January 2017 were identified. Narcotic prescription refill information for the 12 months prior to the surgery and the 12 months after was obtained through the Ohio Automated Rx Reporting System (OARRS) and the Pennsylvania Prescription Drug Monitoring Program (PA PDMP).

Results: 10 patients underwent laser papillotomy for chronic flank pain. Preoperative outpatient narcotic prescriptions filled ranged from 0 to 23 prescriptions, with a mean of 10.5 separate prescriptions per patient. Postoperatively, 8/10 (80%) of patients were considered failures. Six patients had multiple narcotic pain medication refills, with the mean number of pills filled recorded as 993.3 in the 12 months post-surgery. One patient became a heroin addict postoperatively and another required ongoing care in the chronic pain clinic.

Conclusion: Laser papillotomy for chronic flank pain has a high failure rate, especially in patients who are on narcotic pain medication preoperatively. In the era of automated opioid prescription monitoring, urologists should use such information to make surgical decisions and properly counsel patients.

Podium #134
INCREASING FLUID INTAKE TO REDUCE STONE RECURRENCE RISK: IS MORE TECHNOLOGY BETTER?
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Presented By: Kristina L. Penniston, PhD, RDN, FAND

Introduction: Many patients are challenged to increase fluid intake. In a pilot study, we tested the feasibility and acceptability of different fluid consumption methods.

Methods: With IRB approval, patients with <2.5 L urine in a 24-h collection were randomized to: (1) a cup with a manually-adjustable dial (dial cup, DC) to tally fillings; (2) a “smart” bottle (SB) with a digital display of cumulative filling; or (3) a stainless steel bottle and 5 reminder bands (RB) to be placed each day around the bottle or wrist with one removed upon consumption of the bottle’s contents. Patients (n=72) were 57% female; 53% were <60 years old. Over 6 weeks, patients tracked daily fluid intake and urine output.
Results: Pre-study fluid intake (1.77±0.60 L/d) and urine output (1.67±0.55 L/d) did not differ between groups. RB patients reported the highest increases in urine volume (273 vs. 171 and 221 mL/d for DC and SB, respectively), but changes in intake were highest for SB (848 vs. 435 and 506 mL/d for DC and RB). To control for variable compliance, when only patients with net increases in reported fluid intake were included, RB patients had higher urine output (1.9 L/d) than DC (1.71 L/d) or SB (1.78 L/d). In a post-study survey, patients ≥60 y tended to rate the SB method least favorably compared to younger patients.

Conclusion: Tailored strategies to increase fluid intake can improve urine output. Older patients may be less motivated than younger patients with “smart” technologies.

Podium #135
COMORBIDITIES AFFECT THE HEALTH-RELATED QUALITY OF LIFE OF PATIENTS WITH UROLITHIASIS: CROSS-SECTIONAL ANALYSIS FROM THE NORTH AMERICAN STONE QUALITY OF LIFE CONSORTIUM
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Presented By: Kristina L. Penniston, PhD, RDN, FAND

Introduction: We hypothesized that certain comorbidities reduce patients’ stone-related quality of life. Patients from 11 urology sites across North America completed the Wisconsin Stone Quality of Life questionnaire (WISQOL).

Methods: Data from patients (n=2,019) who completed the WISQOL were documented. Comorbidities were selected from a list of 24; those with prevalence ≥5% were included in the analyses.

Results: Patients were 51.5% men, 53.4±14.4 years old, and had a BMI at enrollment of 30.3±7.5 kg/m2. Comorbidities (prevalence) were: hypertension (36%), dyslipidemia (21%), depression/anxiety (D/A, 20%), diabetes mellitus type 2/borderline-diabetes (DM/BDM; 16%), gastroesophageal reflux (13%), irritable/inflammatory/short bowel (IBS/SB; 7.4%), cardiovascular disease (7.3%), hypothyroidism (7.1%), osteoporosis/osteopenia (6.6%), gout (5.4%), and degenerative joint disease (5.1%). Overall, patients with ≥2 comorbidities had significantly lower scores than those with ≤1 (P=0.001). DM/BDM, IBS/SB, and D/A were significantly inversely associated with patient HRQOL (P<0.035, MANOVA) when controlled for presence of a stone(s) or stone-related symptoms. Patients with D/A who were not on pharmacologic treatment had lower HRQOL compared to patients with D/A and on pharmacologic treatment (P=0.014, MANOVA). Among all patients with a stone(s) at the time of WISQOL completion, those with IBS/SB had lower HRQOL than those without IBS/SB (P<0.0001, MANOVA).

Conclusion: DM/BDM, IBS/SB, and D/A were significantly inversely associated with patients’ stone-related HRQOL. In patients with a stone(s) at the time they completed the WISQOL, untreated D/A further reduced HRQOL. Efforts to treat or manage these comorbidities may enhance patients’ stone-related HRQOL and potentially improve traditional stone-related outcomes.
Podium #136

POST-URETEROSCOPY PAIN DOES NOT CORRELATE WITH HYDRODISTENSION
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Presented By: Anna E. Faris, BA

Introduction: This study examined whether hydrodistension or visualized petechiae associates with post-ureteroscopy pain.

Methods: Patients analyzed underwent ureteroscopy (URS) for stone extraction followed by pyeloscopy. A petechial grading scale was developed: 0=no petechiae or epithelial abrasions, 1=mild petechiae covering 1-20% of epithelium, 2=moderate with 20-50% coverage, and 3=greater than 50% coverage. Four blinded expert endourologists independently graded the videos. Interrater reliability was assessed by intraclass correlation coefficient[ICC(2)] and Cronbach's alpha. Operative techniques, PACU pain scores and medication, and follow-up data were collected. Descriptive statistics are reported as median[IQR] and mean(±STD). Wilcoxon rank-sum, chi square, fisher's exact tests were utilized.

Results: Pyleoscopies were performed in 45 patients. Median total stones was 1[1-3] with a cumulative stone burden of 8[6-13]mm. The average maximum pain score in the PACU was 4.47(±3.24), with 91% receiving peri-operative pain medications. Ten patients had mild petechiae (grade 1), 27 were moderate (grade 2), and 8 had greater than 50% of epithelial coverage (grade 3). ICC(2,k) was 0.848 and ICC(2,1) was 0.583; Cronbach's alpha was 0.861, showing good interrater reliability for averaged scores. Maximum PACU pain scores did not vary significantly across petechial grade groups (grade 1=5[1.5 -6.25], grade 2=5[2-7], and grade 3=3.5[0-6.75];p=0.75). Similarly petechial grade was not associated with phone calls or ED visits for refractory pain (p=0.88) or cumulative PACU dosing of narcotics(converted to morphine equivalents)(p=0.74).

Conclusion: Visual assessment of bleeding after ureteroscopy did not significantly predict subjective pain in the PACU or provider correspondence after discharge. Hydrodistension of the collecting system or urothelial trauma may not contribute to postoperative discomfort.

Podium #137

ROBOTIC KIDNEY TRANSPLANTATION WITH REGIONAL HYPOTHERMIA VERSUS OPEN KIDNEY TRANSPLANTATION FOR PATIENTS WITH END STAGE RENAL DISEASE: AN IDEAL PHASE 2B STUDY
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Presented By: Akshay Sood, MD

Introduction: To examine association between robotic kidney transplantation (RKT) and postoperative outcomes including graft function, 6-month complications, and graft and patient survival.

Methods: A case-control study with prospective data collection comparing patients undergoing open or RKT. Primary outcome was delayed graft function (DGF), defined as need for dialysis within 1 week of surgery. Secondary outcomes included postoperative complications, pain, graft rejection, and graft and patient survival.

Results: Of the 654 patients that met study-criteria during the 3-year study period (Jan-2013 to Dec-2015), 126 underwent RKT. Propensity-score matching (1:3) yielded a final sample of 504 patients (robotic, n=126; open, n=378). Within the matched-pair cohort, the robotic approach was associated with lower rates of wound infections (0% vs 4%, chi-square p=0.023) and symptomatic lymphoceles (0% vs 7% at 36 months, log-rank p=0.003), as well as, reduced postoperative pain, requirement for narcotic analgesia and blood loss.
There were no differences among the two groups, robotic versus open, with respect to graft function, length of hospital stay (median 8 days for both, Mann-Whitney $p=0.647$), graft rejection, and graft and overall survival (Figure).

**Conclusion:** RKT with regional hypothermia was associated with a lower rate of postoperative complications, and improved patient comfort. There were no differences with respect to graft function, and graft and overall survival.

### Podium #138

**GLOBAL KIDNEY EXCHANGE: AN INTERNATIONAL APPROACH TO EXPANDING LIVING DONOR KIDNEY TRANSPLANTATION IN MINORITY GROUPS**

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**Presented By:** Robert J. Brunner, BA

**Introduction:** Innovation in allocation strategies is necessary to overcome the global organ shortage and improve inequities to treatment access for disadvantaged groups.

**Methods:** Globally, savings generated from successful transplantation versus long-term dialysis permits kidney paired donation (KPD) chains including pairs from both developed and developing countries. The developing country’s pair overcomes financial barriers to transplantation while developed country’s pairs overcome immunological barriers. A wider immunological and ethnic range of patients is now included in KPD algorithms, providing more opportunities for chains. Global Kidney Exchange (GKE) utilizes these savings to provide transplantation access to broader populations while providing more opportunities to match highly sensitized recipients.

**Results:** Since 2015, 4 GKE chains initiated by pairs from the Philippines and Mexico have generated 31 transplants. 3 pairs were blood-type (BT) O donors with BT-A recipients, and 1 pair was a BT-O donor with a BT-O recipient. The lengths of each chain are 12, 11, 6, and 2, with 3 Bridge Donors pending. 19 of the recipients were BT-O, 9 were BT-A, and 3 were BT-B. 38.7% (12 in 31) of recipients were non-Caucasian ethnic minorities. Mean donor and recipient ages were 48.5 and 52.6, respectively. 12 recipients had a PRA of 0-20%, 12 with PRA 21-79%, and 7 with PRA > 80%. Expenses for international pairs were funded philanthropically. All patients currently have excellent renal function.

**Conclusion:** In providing a mechanism to overcome financial and immunological barriers to transplantation, GKE has potential to ameliorate disparities in kidney transplantation in minority groups.
Podium #139
RISK OF LONG TERM RENAL INSUFFICIENCY NOT INCREASED BY OBESITY OR AGE
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Indiana University
Presented By: Isamu Tachibana, MD

Introduction: Outcomes for patients undergoing living donor nephrectomy are excellent. However, there is still a significant organ shortage. This shortage has prompted interest in expanding criteria for donation which has been shown to be feasible and safe in short-term outcomes. We here retrospectively review our experience with living donor nephrectomy to determine whether there is any increased risk of long term renal insufficiency in patients with extended criteria for donation.

Methods: After IRB approval, we reviewed patients who have undergone donor nephrectomy from September 2006 to September 2017. Patients were excluded for whom we do not have a blood serum creatinine result from at least 1 year following surgery. 298 patients were identified. Renal insufficiency was defined as a creatinine of 1.5 for men or 1.3 for women. Extended criteria were defined as BMI >30 and age >60 as well as right side kidney donation.

Results: Log-rank analysis showed no difference in mean time to renal insufficiency between obese (BMI 30-35), very obese (BMI>35) and non-obese patients. Advanced age (>60) did not predispose donors to early progression to renal insufficiency. Right side donor nephrectomy was not associated with any increased incidence in renal insufficiency. Impaired GFR prior to surgery did predispose to risk of earlier renal insufficiency.

Conclusion: Living donor nephrectomy has previously been shown to be safe in obese patients, patients with advanced age, and those who are eligible for right donation only. This analysis provides support that there is not increased risk of renal insufficiency in these populations.

Podium #140
MOTORCYCLE RELATED GENITOURINARY TRAUMA
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Presented By: James A. Stinson III, MS

Introduction: Motorcycle accidents represent a significant cause of traumatic injury in the U.S., accounting for 1 in 8 of all motor vehicle associated deaths. Our study evaluated the National Trauma Data Bank (NTDB) to assess motorcycle associated genitourinary injuries (GUI) with the aim of providing optimal urologic and trauma care for this subset of critically injured patients.

Methods: Traumatic cases from 2011 - 2015 were reviewed utilizing the American College of Surgeons National Trauma Data Bank. Patient demographics, incident variables, organ of injury, associated injuries, injury scores, hospital course, and disposition were reviewed using the using the ECode for motorcyclists and International Classification for Disease (10th edition) codes for GUI.

Results: 1.8 million trauma cases were reviewed, of which 79,857 motorcycle related traumas. GUI occurred in 5,091 (6%) of these motorcyclist related traumas. The cohort was predominantly male (87%), with alcohol abuse (78%) and substance abuse (23%) occurring commonly at the time of injury. Renal injuries were the most common GUI (49%) with adrenal injury followed by adrenal injuries (24%). External genitalia injuries occurred in 577 (11%) of the traumatic injuries reviewed.

Conclusion: Genitourinary injuries occurred in 6% of the studied cohort, with renal injuries being the most common. Motorcycle associated trauma demonstrated a relatively high incidence of GUI compared to previous literature describing rates for all GUI-related motor
vehicle accidents (<1%). This study represents one of the largest reviews of a standardized, modern database evaluating GUI associated traumatic motorcycle injuries.

Podium #141
A CASE OF BILATERAL UNDESCENDED BILOBED TESTES
Hannah Agard, MD¹, Neel Parekh, MD¹ and Curtis Clark, MD²
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Presented By: Hannah E. Agard, MD

Introduction: Bilobed testis is thought to be a rare variant of polyorchidism, with five cases reported. We present the first reported case of bilateral, undescended, bilobed testes. Methods: A 1-month-old, XY male with multiple anomalous congenital features was referred for bilateral undescended testes. On exam, both testes were non-palpable. Ultrasound showed a lobular left testis in the inguinal canal, while the right was intra-abdominal.

Results: At 15 months, laparoscopy revealed cord structures entering the left inguinal canal. Exploration revealed a bilobed testis with blood vessels branched in a ‘Y’ fashion and each lobe receiving a separate branch (Figure 1). There was a single vas deferens. Left inguinal orchidopexy was performed. The right testis was intra-abdominal and also bilobed, with similar vascular anatomy but extremely short vessels. A single-stage Fowler-Stephens orchidopexy was performed.

Conclusion: Polyorchidism is rare, with bilobed testis being an extremely rare variant. Commonly associated anomalies include cryptorchidism and indirect inguinal hernia, which were present in our case. Complications may include testicular torsion and malignancy. Based on the congenital anomalies seen in our patient, we propose that polyorchidism and bilobed testes may present as part of a genetic syndrome. This case presentation is the first documented case of bilateral bilobed testes.

Podium #142
RETROGRADE URETEROSCOPY IN MANAGEMENT OF DISTAL URETERAL CALCULUS IN A PATIENT WITH URETEROSIGMOIDOSTOMY DIVERSION
Adam De Fazio, MD, JD and Michael Borofsky, MD
University of Minnesota Department of Urology
Presented By: Adam M. De Fazio, MD, JD

Introduction: All reports on the endourologic management of ureteral stones in patients with ureterosigmoidostomy have required percutaneous access. We report our experience performing retrograde ureteroscopy in such a patient without percutaneous access. Methods: The patient is a 70-year-old man with bladder exstrophy who underwent end colostomy and ureterosigmoidostomy as a child. He presented with a symptomatic 8 mm stone at the right uretero-sigmoid junction. A decision was made to treat the stone without percutaneous access due to obligate antplatelet therapy following recent coronary stent placement. We advanced a flexible cystoscope through the patient’s anus and identified a ureteral orifice with the assistance of methylene blue. We directed a wire into the orifice and confirmed right-sided laterality with imaging. A second wire was established with a dual-lumen catheter. A semi-rigid ureteroscope traversed the ureteral orifice and encountered an
8 mm stone that was retrieved intact. A 6 x 26 double-J stent was placed with a string to facilitate removal 5 days later.

**Results:** The stone was removed in an expeditious fashion without antegrade access. Postoperative course was unremarkable with follow-up imaging revealing only a punctate stone fragment remaining.

**Conclusion:** Retrograde ureteroscopy without percutaneous access represents a viable treatment option for ureteral stones in patients with ureterosigmoidostomy.

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**Podium #143**  
**SIGMOID VAGINOPLASTY FOR FORMATION OF NEOINTROITUS IN A PATIENT WITH PARTIAL ANDROGEN INSENSITIVITY SYNDROME**  
Paurush Babbar, MD, Andrew Sun, MD, Yaw Nyame, MD, Maxx Caveney, MD, Rebecca Campbell, MD, Jeffrey Donohoe, MD and Audrey Rhee, MD  
Cleveland Clinic  
Presented By: Paurush Babbar, MD

**Introduction:** Partial androgen insensitivity syndrome (PAIS) is characterized by a 46XY karyotype with phenotypic manifestations of incomplete masculinization such as hypospadias, rudimentary Wolffian duct remnants, gynecomastia and ambiguous genitalia. The surgical reconstruction of these patients can be challenging. This report describes performance of sigmoid vaginoplasty on a 17 year old female with PAIS with excellent cosmetic and functional outcomes.

**Methods:** The patient was a 17 year old phenotypic female with karyotype 46XY with family history of PAIS who was diagnosed at birth along with her fraternal twin. She had ambiguous genitalia with voiding cystourethrogram showing a large prostatic utricle. At 8 months laparoscopic bilateral gonadectomy was performed. After preoperative evaluation, she underwent cystovaginoscopy, laparoscopic prostatic utriclectomy, labioplasty, clitoroplasty, laparoscopic sigmoid harvest, sigmoid vaginoplasty and modified sacrocolpopexy of the proximal neovagina to the sacral promontory. Operative time was 642 minutes with estimated blood loss 50cc.

**Results:** The patient was discharged on day 7. Postoperative course was complicated by left thumb paresthesia from positional injury which has since resolved. At 6 month follow up the patient has excellent cosmesis and is using 16Fr dilators twice daily in the neointroitus.

**Conclusion:** Sigmoid vaginoplasty is a very efficacious and cosmetically pleasing procedure in patients with ambiguous genitalia due to PAIS.
Introduction: Female urethral duplication is an exceedingly rare abnormality that is usually diagnosed in the pediatric population. Patients may be asymptomatic or present with bothersome symptoms including UTIs, incontinence, obstructive voiding, or split urinary stream.

Methods: We performed fluorouroudynamics (FUDS), voiding cystourethrogram (VCUG), and cystoscopy to evaluate and diagnose the duplicated urethra with a single bladder.

Results: An 88 year old woman presented to urology clinic with complaints of 1-2 years of mixed urinary incontinence, without prior intervention. She had 11 vaginal deliveries and denied any urologic history or complaints prior to her incontinence. On physical exam, she appeared to have split clitoris and stress maneuvers elicited leakage from orthotopic urethra in addition to an opening ventral to her clitoris. Stress maneuvers were negative during FUDS, however, the patient leaked immediately afterwards. During the VCUG, the bladder neck was able to open and two streams of urine were observed on fluoroscopy. Cystoscopy revealed completely duplicated urethras with discrete openings within the bladder (Figure 1: cystoscope through orthotopic urethra retroflexed to view duplicated urethral opening). She was initially treated with anticholinergics (Tolterodine 4mg daily).

Conclusion: Duplicated urethras are a rare anomaly, especially in females and in the non-pediatric population.

Introduction: Pleomorphic adenomas represent the most common tumor of the salivary glands in both the adult and pediatric populations. Statistically these represent 45-75% of all salivary gland neoplasms. Pleomorphic adenomas are typically considered benign and treated with surgical excision; however, malignant changes can occur in 2-7% of cases. These have been associated with multiple recurrences, deep lobe tumors, male gender, and older age. In particular, pleomorphic adenomas which have metastasized to the kidneys represent an exceedingly rare scenario and have only been reported a handful of times in the literature.

Case: A 66 year old male with a remote history of benign pleomorphic adenoma that had been resected multiple times presented for workup of unintentional weight loss and early satiety. On MRI, an incidental renal mass was discovered that was concerning for primary renal neoplasm. Due to the size and location, he elected to undergo renal biopsy with radio frequency ablation of the mass, which was ultimately found to be metastatic pleomorphic adenoma from a salivary origin.
Discussion: We describe an exceptionally rare case of a pleomorphic adenoma that metastasized to the kidney. Although there are only a few case reports in the literature, the history is important as these can appear indistinguishable from primary renal neoplasms and without a careful history could easily be misdiagnosed.

Podium #146
THE UNCOMMON CASE OF A CORPORAL CUTANEOUS FISTULA
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Presented By: M. Francesca Monn, MD, MPH

Introduction: Corporal cutaneous fistula is a rare, poorly described complication of perineal trauma.

Methods: A single patient was identified with traumatic corporal cutaneous fistula.

Results: A 19 year old male presented three months after trauma to the perineum and gluteal region after falling on a glass table. The perineal laceration was closed shortly after the injury but he had bleeding from the gluteal wound with erections. An MRI demonstrated a right proximal corpora cavernosum tear which had fistulized to the perineum. It was decided to proceed with exploration. Active extravasation was noted from the corpora. This was irrigated and the tunica closed with 4-0 PDS. The patient with continued bleeding, and on re-exploration, it was noted that the PDS had ruptured. This was closed using 2-0 PDS and a dartos flap. Two weeks later he began to rebleed. On evaluation his hemoglobin was 5.9ng/dL. On his third exploration, the corporal body was reapproximated with 2-0 PDS. An AlloDerm graft of 2cm x 2cm was then sewn over the corporal body. The patient had no further complications or bleeding episodes and is currently 36 months out from surgery with normal erectile function.

Conclusion: Corporal cutaneous fistulas are uncommon complications of perineal trauma. Re-bleeding can occur and repair may require grafting.

Podium #147
LIFE-THREATENING BILATERAL RENAL MUCORMYCOSIS PRESENTING AS URINARY "SEA MONSTERS": FIRST REPORTED SURVIVAL WITH CONSERVATIVE MANAGEMENT
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University of Minnesota
Presented By: Benjamin M. Marsh, MD

Introduction: Mucormycosis is a deadly angioinvasive fungal infection that typically affects immunocompromised patients. Renal involvement is rare and bilateral involvement is particularly deadly with mortality reaching 100% in the absence of bilateral nephrectomy or surgical debridement.

Methods: We present a case of a patient with isolated, bilateral renal mucormycosis successfully treated without surgical debridement.

Results: A 56-year-old man with medical history of substance abuse and poorly controlled diabetes presented to the hospital with recurrent flank pain, fevers, and self reported passage of "sea monsters" (filamentous strands) in his urine for weeks despite multiple previous antibiotic treatments, negative urine cultures and placement of bilateral ureteral stents. CT imaging demonstrated bilateral emphysematous pyelitis with debris in the collecting system despite well-positioned ureteral stents. On cystoscopy he was noted to
have abundant “rubbery” debris emanating from the ureters that was sent for culture and grew mucor (Rhizopus sp.). Given the bilateral nature of the disease, a conservative approach was elected with placement of bilateral nephrostomy tubes and systemic antifungal therapy. After an extended course of antifungal therapy and daily flushing of fungal debris from nephrostomy tubes, the patient’s imaging and labs demonstrated complete resolution of infection.

**Conclusion:** Urologists should be aware of atypical organisms as a source of persistent infection, particularly in the immunocompromised population. This case also highlights the feasibility of survival of this unusual and life threatening condition with prompt recognition combined with maximal drainage and appropriate antimicrobial treatment.

**Podium #148**

**PRIMARY TESTICULAR ANGIOSARCOMA WITH RETROPERITONEAL METASTASIS. A RARE PRESENTATION**

Joshua Piotrowski, Meghan Schaefer, MD and Scott Johnson, MD
Medical College of Wisconsin
Presented By: Joshua T. Piotrowski, MD, PhD

**Introduction:** Angiosarcoma is a rare malignancy and primary testicular angiosarcoma is even more infrequent. Here we present the case of patient admitted with right hydronephrosis secondary to ureteral obstruction from a right retroperitoneal mass and associated right testicular mass.

**Methods:** The English medical literature on primary testicular angiosarcoma was reviewed and the patient's medical course, surgical interventions, pathology and imaging were reviewed.

**Results:** The patient initially presented with acutely worsening right flank pain and was noted to have right hydronephrosis on CT scan secondary to ureteral obstruction from a right retroperitoneal mass. Further workup noted a right testicular mass and no elevation in testicular tumor markers. Following right inguinal orchiectomy, pathology demonstrated angiosarcoma involving the testis, epididymis, and spermatic cord. Further work up with PET/CT demonstrated diffuse PET avid lesions in the lungs, bones, and right retroperitoneum. The patient elected to undergo treatment with doxorubicin.

**Conclusion:** Primary testicular angiosarcoma remains a rare malignancy but typically presents in males over the age of 40 with presentation typically at an advanced stage with overall poor prognosis. Additionally, there have been reports of angiosarcoma development following testicular germ cell treatment. While rare, angiosarcoma should remain on the Urologist's differential diagnosis when presented with an atypical testicular mass.

**Podium #149**

**AN UNUSUAL PRESENTATION OF RECURRENT PROSTATE CANCER: OBSTRUCTING RECTAL MASS ELEVEN YEARS AFTER RADICAL PROSTATECTOMY**

Engy Habashy, MD, Jagan Kansal, MD, MBA, Robert Bruce Bracken, MD and Abhinav Sidana, MD
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Presented By: Engy Habashy, MD

**Introduction:** Ninety-six percent of prostate cancer (PCa) recurrences occur within 9 years of radical prostatectomy (RP). Lymph nodes and bones are the most common sites for PCa metastasis. Although rare, a few cases have described rectal involvement in cases of PCa. We describe an unusual delayed PCa recurrence as an obstructing rectal mass.

**Case:** 71-year-old male underwent robotic RP in 2006 for Gleason 7 PCa. Pathology demonstrated Gleason 3+4=7 pT3bNxMx with negative margins. His prostate specific antigen (PSA) remained undetectable until 2013. He was lost to follow-up and presented in 2017 with hematochezia and PSA of 22. Rectal exam revealed bloody indurated anterior rectal wall. Imaging demonstrated a soft tissue mass in the prostatic fossa invading the rectum (see figure); without evidence of distant metastasis. Proctoscopy revealed circumferential irregular stricture at the dentate line. Due to concern for rectal cancer, rectal biopsy was performed and demonstrated adenocarcinoma of the prostate. Patient was
started on androgen deprivation therapy and his PSA decreased to 1.6; however, his rectal mass worsened to nearly obstructing. Currently salvage radiation therapy is planned.

**Conclusion:** While most recurrences of PCa are detected within 10 years of surgery, delayed and unusual presentation of recurrent PCa is possible. High index of suspicion must be maintained for detection of late recurrences.

**Podium #150**

**MISSED VAGINAL PESSARY CREATES A GENITOURINARY DISASTER**

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Presented By: Ahmed M. El-Zawahry, MD, MSC

**Introduction:** Pelvic organ prolapse is a common problems that affects women. Treatment options include conservative and surgical options. Women may opt to use conservative approach to avoid surgery and the potential complications.

**Methods:** Patient’s chart is reviewed for demographics, medical comorbidities, Lab tests, radiology tests and Operative reports.

**Results:** Here in we present a 78 year-old white female who presented with severe pelvic pain, urinary incontinence and recurrent Urinary tract infections secondary to a pessary use. She used the pessary for more than 10 years for help her prolapse treatment. She had good results and did not follow up till she started to have non-manageable pain. Examination was performed under anesthesia due to excessive pain. She had large vaginal calcification extending to the bladder and the rectum. Sigmoidoscopy showed significant loss of rectal wall and vaginal wall. Cystoscopy showed complete loss of the bladder above the trigon as well as anterior vaginal wall. CT scan showed large calcification on a Gellhorn pessary eroding into the bladder and rectum. She also had a large bladder stone. The patient underwent extensive surgery to remove the bladder stones, the pessary from the bladder, vagina and rectum with reconstruction of the anterior and posterior vaginal wall.

**Conclusion:** Pessary use have useful in treatment of pelvic organ prolapse. However, this is not without complications. Different complications are manageable but genitourinary disasters can present with negligence. Patients should be taught that proper follow up in mandatory otherwise terrible consequences could happen.

**Podium #151**

**PENILE PARAFFINOMA: A DISFIGURING CONSEQUENCE OF MINERAL OIL INJECTION**

M. Ryan Farrell, MD, MPH, Peter Tsambarlis, MD and Laurence Levine, MD

Rush University Medical Center

Presented By: M. Ryan Farrell, MD, MPH

**Introduction:** Mineral oil/liquid paraffin injection was historically utilized for cosmesis including penile augmentation. Its use was largely discontinued after disfiguring lesions resulted. Currently, mineral oil injections are mostly performed by non-medical personnel or patients themselves.

**Methods:** Case of penile paraffinoma due to mineral oil injection.
Results: 51-year-old man presented with fever (39.4°C) and 3-months of penile inflammation, shortening, and pain. He denied trauma/manipulation. Exam revealed thick, indurated, inelastic penile shaft skin, multiple 3mm shaft ulcerations, and palpable bilateral inguinal lymph nodes (Figure 1a). After a full course of antibiotics for polymicrobial soft tissue infection, MRI revealed diffuse subcutaneous penile edema and bilateral inguinal lymphadenopathy (Figure 1b). Penile biopsy showed extensive fibrosis, chronic inflammation and multiple vacuoles consistent with penile paraffinoma (Figure 1c). He then admitted to injecting mineral oil into his penis for size enhancement 2-years prior. The entirety of the penile shaft skin was thickened/inelastic necessitating radical excision. Buck’s fascia was uninvolved. A split-thickness skin graft (0.020in) covered the penile shaft (Figure 1d,e). Preoperative penile length was restored (12cm stretched penile length) and cosmesis was improved with no recurrent lesions at 2-years follow-up (Figure 1f).

Conclusion: Patients may be reluctant to admit to penile injections, therefore, diagnosis requires a high degree of clinical suspicion. Reconstructive surgery is frequently necessary.

Podium #152
URINARY DIVERSION IN A CASE WITH MALROTATED BOWEL AND SOLITARY ECTOPIC PELVIC KIDNEY
Jennifer Henderson, MSN and Ayman Mahdy, MD, PhD
University of Cincinnati
Presented By: Jennifer Henderson, MSN, APRN, FNP-BC

Introduction: Malrotated bowel is a rare condition with large bowel seen on the left and small bowel on the right on imaging (Fig -1). Here, we report a case of a patient with a left solitary ectopic pelvic kidney and intestinal malrotation who underwent ilial conduit urinary diversion for neurogenic bladder.

Methods: A review of literature was conducted. Patient chart was reviewed including medical history and investigative studies.

Results: A 51-year-old female with spina bifida and neurogenic bladder presented with severe urinary incontinence secondary to contracted bladder and intrinsic sphincter deficiency. Patient had decubitus ulcers and osteomyelitis. Treatment with ilial conduit was planned. Computed Topography (CT) demonstrated a solitary ectopic pelvic left kidney and malrotated bowel (Fig. 1-a). Special attention was directed to the correct bowel orientation making sure the distal end of the ilial conduit was at the stoma site. Caution was also taken to make sure the stoma was lower than the pelvic kidney in order to benefit from the gravity drainage, and yet not too low to ensure proper appliance fitting (Figure-1 b).

Conclusion: Findings of solitary ectopic pelvic kidney and malrotated bowel can largely affect surgical technique during urinary diversion. Special considerations must be applied for optimal outcome.
ARTIFICIAL URINARY SPHINCTER REVISION WITH QUICK CONNECTS® VERSUS SUTURE−TIE CONNECTORS: DOES TECHNIQUE MAKE A DIFFERENCE?
Jack Andrews, MD, Brian Linder, MD, Joseph Scales, MD and Daniel Elliott, MD
Mayo Clinic
Presented By: Jack Andrews, MD

Introduction: While artificial urinary sphincter (AUS) placement remains the gold standard treatment option for men with stress urinary incontinence, roughly a quarter of men will undergo device revision for recurrent incontinence. For patients undergoing single component device revision, the surgical dogma has been to use suture-tie connectors exclusively, as opposed to the AMS specific Quick-Connect Sutureless Connectors (QC), which are routinely used in primary implantations. Here, we evaluate the reliability and efficacy of QC versus suture−tie connectors for single component revision procedures.

Methods: A total of 1082 men with stress urinary incontinence underwent primary AUS procedures at our institution. Of these, 117 underwent subsequent revision surgery for mechanical device malfunction. Multiple clinical and surgical variables were evaluated for a potential association with repeat AUS surgery including the type of connector used.

Results: Of the 117 patients that underwent revision surgery for primary device malfunction, 46 were single component revisions. In these cases, the tubing connections were performed using suture−tie connectors in 34 (74%) cases and QC in 12 (26%) cases. There was no significant difference in 5-year device survival between suture−tie and QC (36% vs 61%; p=0.85). There were no cases of device infection or repeat mechanical failure at the connector among revision cases utilizing QC, as compared to five device infections and four repeat mechanical failures among the suture-tie cohort.

Conclusion: The use of Quick Connects® for single component AUS revision for mechanical failures appears to be safe, efficient and reliable.

ANTERIOR VAGINAL WALL SUSPENSION AS ALTERNATIVE TO MESH BASED REPAIR AND CAN BE REPLICATED OUTSIDE OF ORIGINATING INSTITUTION
Gabrielle McNary, BS and C.R. Powell, MD
Indiana University School of Medicine
Presented By: Charles R. Powell II, MD

Introduction: Mesh for cystocele repair has well known potential complications. Native tissue repairs have demonstrated inferior anatomic outcomes but similar Quality of Life outcomes1. Anterior vaginal wall suspension (AVWS) utilizes permanent retropubic sutures to suspend the anterior vaginal wall over rectus fascia2 and may offer the best compromise between anatomic success and safety.

Methods: A retrospective chart review was undertaken examining POP-Q scores and validated questionnaires (UDI-6, IIQ-7) to assess anatomic and quality of life outcomes. Prolapse in other compartments, incontinence, subsequent need for surgical revision, and complications were also examined in light of the 2012 ICS guideline on outcomes reporting3. Urinary incontinence, quantified with pad use on 24 hour voiding diary, was also reported. Anatomic failure was defined as Ba point >0.
Results: Eighty-seven women underwent AVWS from 2009-2016. Seven of 87 women (8%) exhibited failure in the anterior compartment after 14.8±15.9 months follow up. Post-operative outcomes all improved to p<0.01 (Table 1). 2/87 patients reported failure in the apical compartment and 2/87 in the posterior compartment. Adverse outcomes included repeat AVWS procedure in 4, delayed sling for SUI in 2, bladder perforation with suture in 1, and suture extrusion in 1.

Conclusion: AVWS provides excellent short-term outcomes and can be reproduced outside of the originating institution.

Podium #155
WITHDRAWN

Podium #156
EFFECTIVENESS OF INTRADETRUSOR ONABOTULINUM TOXIN A INJECTIONS IN MANAGING OVERACTIVE BLADDER AFTER INITIAL SACRAL NEUROMODULATION THERAPY
Hamilton Trinh, BS1, Vicki Irish, CNP2, Mierya Diaz-Insua, PhD2 and Humphrey Atiemo, MD2
1Wayne State University School of Medicine; 2Vattikuti Urology Institute, Henry Ford Hospital
Presented By: Hamilton Trinh, BS

Introduction: Third−line treatment of overactive bladder (OAB)include sacral neuromodulation (SNM) and intradetrusor Onabotulinum toxin A (Botox) injections. Data is lacking on the predictors and efficacy of treatment success for Botox in patients who have failed SNM. This study measures the effectiveness of Botox in OAB patients where SNM has failed.

Methods: All patients treated with intradetrusor Botox injections from January 2013 to December 2016 in a single provider’s clinic after failing initial SNM were included in this retrospective study. Pre−treatment bladder capacity and average volume of uninhibited detrusor contractions were recorded. Daily pad usage, daytime voiding frequency, and validated questionnaire symptom scores pre/ 2 months post latest Botox treatment were compared. Successes were defined as patient willingness to continue Botox and failures were defined as patient discontinuation of Botox.

Results: 18 patients met our inclusion criteria. 7 patients were categorized as success, and 11 as failures. Patients in the success group showed improvement in daytime voiding frequency (pre−Botox median: 11 voids/day vs post−Botox: 7 voids/day, p=0.042). The fail group showed no change in daytime voiding frequency. No change in daily pad usage and questionnaire symptom scores were observed in both groups. Initial failure of SNM was
associated with a high rate of failing subsequent Botox injection. χ²(1) = 5.8, p=0.016, OR = 3.6.

**Conclusion:** This study demonstrates the efficacy of Botox injections for OAB patients who fail initial SNM, where an improvement in daytime voiding frequency is observed. However, this success rate is lower than in SNM naïve patients.

**Podium #157**

**USE OF FLEXIBLE CYSTOSCOPY AT TIME OF ARTIFICIAL URINARY SPHINCTER PLACEMENT**

M. Francesca Monn, MD, MPH, Brian M Orr, MD and Matthew J Mellon, MD
Indiana University School of Medicine Department of Urology
Presented By: M. Francesca Monn, MD, MPH

**Introduction:** Artificial urinary sphincters (AUS) are used to treat significant urinary incontinence. Flexible cystoscopy at the time of AUS placement provides confirmation that the AUS is functioning, visualization of coaptation, and evaluation for urethral injury. Current guidelines do not include flexible cystoscopy. The objective was to evaluate whether flexible cystoscopy during AUS placement changed cuff size at the time of surgery.

**Methods:** A retrospective cohort study was performed to evaluate patients undergoing AUS placement by a single surgeon between March 2013 and March 2017. The primary endpoint of the study was change in cuff size based on cystoscopy.

**Results:** 109 AUS were placed in 96 patients. In five cases flexible cystoscopy identified a lack of coaptation of the urethra despite appropriate sizing, resulting in down-sizing of the cuff. Five patients had bladder neck contractures that were previously unrecognized as clinic cystoscopy was performed by the referring Urologist and was reportedly normal. Three patients developed post-operative infections- two with a history of multiple AUS placement and revisions and the third with a history of cystectomy and neobladder.

**Conclusion:** Flexible cystoscopy during AUS placement changed the cuff size in nearly 5% of cases. Particularly for lower volume prosthetic surgeons, flexible cystoscopy during AUS placement provides valuable feedback and should be recommended.

**Podium #158**

**RISK FACTORS FOR RECURRENT INCONTINENCE/URETHRAL ATROPHY FOLLOWING ARTIFICIAL URINARY SPHINCTER PLACEMENT**

Bryan Naelitz, BA, Bradley Gill, MD, MS, Hadley Wood, MD, Drogo Montague, MD and Kenneth Angermeier, MD
Cleveland Clinic Glickman Urology and Kidney Institute
Presented By: Bryan D. Naelitz, BA

**Introduction:** Patient factors associated with recurrent incontinence/urethral atrophy (RI/UA) following Artificial Urinary Sphincter (AUS) implantation have not been fully characterized. This study identified variables associated with RI/UA development after AUS placement.

**Methods:** Men who underwent AUS reoperation in the absence of cuff erosion or infection were identified via the electronic medical record at a tertiary referral center. Demographics,
operative details, comorbidities, and urologic history were collected. Comparative statistics identified factors independently associated with RI/UA by comparing men with this etiology (cases) to those operated on for mechanical device failure or pump repositioning (controls). A logistic regression model was created using variables having p-values ≤0.2 on univariate screening.

**Results:** Between 2009-2017, 65 men required AUS reoperation. Age and body mass index at implantation did not differ between cases and controls, nor did the prevalence of hypertension, cardiovascular disease, or diabetes (Table). However, men with RI/UA were significantly more likely to have smoked than controls. Previous urethral pathology, radiation exposure, and cuff circumference did not differ between groups. Multivariate analysis significantly (p=0.004) associated RI/UA with smoking history, cardiovascular disease, and time from initial AUS implantation (p=0.01, p=0.04, p=0.01, respectively).

**Conclusion:** Smoking history is an independent risk factor for RI/UA, while cardiovascular disease and time since AUS placement also appear to be associated.

### ONABOTULINUM TOXIN INJECTION TO TREAT DESD IN PATIENTS WITH CEREBRAL PALSY

Wade Bushman, MD, PhD and Ruthie Su, MD, MS
University of Wisconsin School of Medicine and Public Health

Presented By: Ruthie R. Su, MD

**Introduction:** Individuals with cerebral palsy (CP) may present during adulthood with signs or symptoms of bladder dysfunction due to spasticity of the pelvic floor and/or detrusor external sphincter dyssynergia. Here we describe our experience with onabotulinum injection to the external sphincter in individuals with cerebral palsy and detrusor external sphincter dyssynergia.

**Methods:** We performed retrospective review of patients treated at UW Hospital and Clinics between Jan 1, 2006 and Jan 1, 2017 with infantile cerebral palsy and onabotulinum injection of the external sphincter. Presenting and post-op symptoms, urodynamic findings, post-void residuals and treatment were recorded. An injection of 100 units of onabotulinum in four quadrants of the external sphincter with local anesthesia was performed at intervals of 6 months to 1 year.

**Results:** Seven patients, 5 males and 2 females, with CP and DESD were treated during the study period. The median age was 34 years old (range 24-79 years old). Median length of follow-up was 1.9 years (range 0.3-8.0 years). Four patients (57%) presented with incomplete emptying of whom three had had indwelling catheters. All patients had detrusor overactivity and DESD during voiding. The three patients with indwelling catheters were able to void spontaneously. Four patients with recurrent UTI reported a reduction in frequency of UTI. Two patients (29%) with bilateral hydronephrosis exhibited improvement or resolution on follow-up ultrasound.

**Conclusion:** Onabotulinum injection to the external sphincter is an effective intervention to relieve catheter dependence, decrease frequency of UTI and protect the upper tract in patients with CP and DESD.
Podium #160

EFFECTIVENESS OF TWO VALIDATED QUESTIONNAIRES TO REMOTELY ASSESS OUTCOMES OF ANTERIOR VAGINAL WALL SUSPENSION WITHOUT CLINIC VISIT

Gabrielle McNary, BS¹ and C.R. Powell, MD²
¹Indiana University; ²Indiana University School of Medicine Dept. of Urology
Presented By: Gabrielle McNary, BS

Introduction: The Anterior Vaginal Wall Suspension (AVWS) procedure for pelvic organ prolapse is effective and mesh free. Follow up typically requires an invasive pelvic exam. Validated questionnaires may predict failures and serve as a less invasive method to screen patients post operatively. The Urogenital Distress Inventory-6 (UDI-6) and Incontinence Impact Questionnaire (IIQ-7) have been used following AVWS. This might function in place of regular pelvic exams.

Methods: A retrospective chart review was undertaken examining POP-Q scores and validated patient questionnaires (UDI-6, IIQ-7) to assess outcomes. Failure by physical exam was defined as Ba ≥ 0. Logistic regression was performed to assess predictive value of each questionnaire. Failure using the instruments alone was defined as >6 total on the UDI-6 and >7 total on the IIQ-7.

Results: 65 women underwent AVWS from 2009-2016 and answered corresponding pre and post surgical questionnaires. Eleven of the 65 patients (17%) demonstrated anatomic failure, while 20/65(30.8%) reported UDI-6>=6. Similarly, 8/65(12.3%) reported failure by IIQ-7 criteria. UDI-6 sum predicted anatomic failure with OR 1.19 (p=0.03), but IIQ-7 did not (OR 1.08 but p=0.06).

Conclusion: A model incorporating UDI-6 shows some promise as a way to reduce some but not all follow up visits.

Podium #161

CONVECTIVE WATER VAPOR THERMAL THERAPY: 3-YEAR DURABLE OUTCOMES OF A RANDOMIZED CONTROLLED STUDY FOR TREATMENT OF LOWER URINARY TRACT SYMPTOMS DUE TO BENIGN PROSTATIC HYPERPLASIA

Joseph Mahon, MD¹, Claus Roehrborn, MD² and Kevin McVary, MD¹
¹SIU; ²Texas Southwestern
Presented By: Kevin T. McVary, MD, FACS

Introduction: Convective water vapor thermal therapy is a unique MIST for ablation of obstructive tissue including the median lobe and central zone. We report 3-yr outcomes of a RCT for treatment of LUTS/BPH. Materials and Methods: 197 men ≥50 yo with IPSS≥13, Qmax ≤15 mL/s and TPV:30-80 cc, enrolled in 15 centers were randomized 2:1 to thermal therapy (136) or control (61). The primary endpoint compared IPSS reductions at 3 months after unblinding; evaluations continued annually for 3yrs.
**Results:** Mean IPSS improvement by 3 months after thermal therapy was -11.2 vs -4.3 points for control (p<0.0001), remaining durable with 50% improvements from baseline throughout 3 years (p<0.001). Commensurate 50% improvements in QL and Qmax were sustained over 3yrs (p<0.0001). Ablation of the median lobe in 30/135 resulted in significantly decreased PVR. At 36mos PVR decrease was 61% of the mean baseline vs. 18% for subjects without a treated median lobe (p = 0.0109). No late AEs occurred; no de novo ED was reported. The surgical retreatment rate was 4.4% (6/135), primarily due to failure to initially treat the median lobe in 4/135 (3%) subjects.

**Conclusion:** The 3-years results indicate that convective water vapor thermal therapy achieves rapid and durable relief of LUTS, QoL and Qmax and preservation of sexual function. This office or ambulatory outpatient procedure requires minimal anesthesia. The thermal therapy warrants positioning as a procedure for LUTS relief, both as an initial therapy versus medications and as an alternative to transurethral surgery for selected patients.

**Introduction:** Convective radiofrequency water vapor thermal therapy has recently been approved as a minimally invasive technique to treat benign prostatic hyperplasia (BPH). We present our initial experience utilizing the Rezūm system in a tertiary care center.

**Methods:** We retrospectively reviewed 135 patient charts that underwent Rezūm therapy by three BPH surgeons since July 2017. Post-procedure catheterization regimen included a minimum of 3 days and a maximum of 4-6 weeks in men with preoperative catheter dependence. Large glands (≥80 g) utilized stacked treatments and often received the max 15 Rezūm treatments per device. Post-operative results were compared by chi-squared analysis.

**Results:** The average prostate gland size was 66.3 grams. During this time, 31 patients had large glands. Forty one patients were catheter dependent preoperatively. Of these, 34 (82.9%) patients no longer required catheterization at follow up. Post-operative infections occurred in 24% of patients (32/135) with significant infections requiring admission occurring in 6 men. There was no difference in infectious complications between patients with small and large prostates (p=0.59). Bleeding complications were very rare despite continued anti-coagulation in 34 men. No men reported new onset ED. Ejaculatory dysfunction (EJD) data was limited but reported in 3 men post-operatively.

**Conclusion:** Rezūm prostate ablation resolved urinary retention in 83% of catheter dependent men. Higher than expected rates of EJD and UTI were seen influencing patient counseling and post procedure antibiotic regimen. Further evaluation through patient correspondence will be performed to evaluate EJD, retention, and satisfaction rates.

**Podium #163**
**PREDICTORS OF RESPONSE TO THE PROSTATIC URETHRAL LIFT (PUL) PROCEDURE**
Steven Gange, MD, Claus Roehrborn, MD, Daniel Rukstalis, MD, Kevin McVary, MD and Steven Kaplan, MD
Western Urological Clinic
Presented By: Steven N. Gange, MD, FACS

**Introduction:** While PUL delivers significant and durable improvement in lower urinary tract symptoms (LUTS), it is not understood how baseline patient characteristics correspond with treatment outcomes. L.I.F.T. study results were analyzed to determine if there were baseline predictors of response.

**Methods:** The L.I.F.T. study enrolled men with age > 50 years, IPSS (International Prostate Symptom Score) > 13, peak flow rate < 12 mL/s and prostates 30-80cc. During PUL, small
implants were placed to enlarge the urethral lumen. A logistic regression model was developed to identify predictors of response. A responder was defined as a PUL subject who was not subsequently treated with BPH surgery or medications within 5 years.

**Results:** 206 men were randomized to PUL (n=140) and sham control (n=66). PUL subjects experienced improvement from baseline by 1 month (IPSS 44%, QOL 42% p<0.0001) that was sustained to 5 years (IPSS 36%, QOL 50%, p<0.0001). The analysis indicated weak stream, incomplete emptying, and IPSS total score were associated with treatment response at 5 years (Table 1).

**Conclusion:** PUL delivers rapid, significant, durable improvement in symptoms and quality of life. Patients with weak stream, incomplete emptying and smaller prostate volume appear to be more likely to be long term responders to therapy.

**Table 1: Chi square association of baseline symptom measure with response at 5 years**

<table>
<thead>
<tr>
<th>Symptom Measure</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPSS Total</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Weak stream</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Incomplete emptying</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Hesitancy</td>
<td>NS</td>
</tr>
<tr>
<td>Intermittency</td>
<td>NS</td>
</tr>
<tr>
<td>Urgency</td>
<td>NS</td>
</tr>
<tr>
<td>Frequency</td>
<td>NS</td>
</tr>
<tr>
<td>Nocturia</td>
<td>NS</td>
</tr>
</tbody>
</table>

Podium #164

THE UTILITY OF A TEMPORARY PROSTATIC URETHRAL STENT IN THE MANAGEMENT OF BPH WITH URINARY RETENTION

Craig Smith, MD
DuPage Medical Group
Presented By: Craig A. Smith, MD

**Introduction:** Urodynamic testing to determine whether patients with BPH in urinary retention would benefit from a de-obstructive procedure is often inconclusive. We have expanded our use of a temporary prostatic urethral stent (Spanner) to men in urinary retention with BPH, who had equivocal urodynamics and failed voiding trials to assess their potential to void without prostatic resistance. We also use the Spanner as an alternative to a Foley catheter after in office thermotherapies to preserve voiding function during post-procedure healing.

**Methods:** 119 patients had Foley catheters removed and underwent Spanner placement for a 2-week duration. 17 were patients with BPH in retention that failed trial voiding and had equivocal urodynamics and 102 patients post high-energy microwave (CTT) or transurethral radiofrequency ablation (TUNA) and post initial Foley catheter placement. Urine cultures were obtained before Spanner placement and after removal. Voiding diaries and residual urine volume were assessed in the retention patients.

**Results:** 14 of 17 patients in retention voided adequately with the Spanner and proceeded with successful BPH therapy. All 14 remain catheter free. Of the 119 patients, 5 Spanners required early removal (4.2%) and 1 patient developed a UTI (0.8%). All patients preferred the Spanner to the Foley catheter.

**Conclusion:** The Spanner proved beneficial in decision-making when urodynamics were inconclusive in urinary retention patients. The patient experience, during the post-op period, after in office thermotherapies for BPH was also improved with Spanner placement.
**Podium #165**

**COMPARISON OF CONVECTIVE WATER VAPOR THERMAL THERAPY OF PROSTATE (REZUM®) TO MTOPS STUDY COHORT SEXUAL FUNCTION RESPONSE AT 3 YEARS**

Joseph Mahon, MD\(^1\), Nikhil Gupta, MD\(^2\) and Kevin McVary, MD\(^1\)

\(^1\)SIU; \(^2\)Rutgers

Presented By: Kevin T. McVary, MD, FACS

**Introduction:** Medical therapy for LUTS/BPH can negatively impact sexual function. Data over 3 yrs shows that convective radiofrequency thermal therapy, Rezum (REZ), treats LUTS/BPH while preserving sexual function. We report the 3 yr effect of REZ on LUTS and sexual function (SF) compared to the cohort from the MTOPS study.

**Methods:**

**Results:** from a RCT of REZ were compared to results of the MTOPS arms, doxazosin (DOX), finasteride (FIN), or combination of both (COM) in subjects (sexually active at baseline). SF was assessed using the IIEF (REZ) and BSFI (MTOPS). Erectile function (EF), orgasmic function (OF), sexual desire (SD), and satisfaction percentiles were compared at 1, 2, and 3 yrs by matching BSFI to IIEF subdomain scores. Propensity score weighting was performed to adjust for baseline differences in demographics, LUTS, and Qmax between groups at baseline; outcomes were assessed over 3 yrs.

**Results:** Treatment included 86 (REZ), 301 (DOX), 319 (FIN), and 310 (COM). All treatment arms experienced a slight decline in EF and OF. There was no change in SD% for REZ and COM, while DOX experienced a 17% decline (p=0.003). REZ also experienced a 17% improvement in satisfaction percentile, while subjects receiving COM therapy demonstrated a 28% decline.

**Conclusion:** REZ achieves similar outcomes compared to COM for treatment of LUTS/BPH. Although baseline EF was higher in REZ subjects, it is unclear to what degree these differences are attributable to instrument versus cohort differences. REZ offers a favorable sexual AE profile, which may be a superior option for patients unwilling to sacrifice SF.

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**Podium #166**

**VOIDED VOLUMES PREDICT DEGREE OF PARTIAL BLADDER OUTLET OBSTRUCTION IN A MURINE MODEL**

Nicholas Tassone, BS, Megan Devine, BS, Belinda Li, MD, Michael White, BA, Paula Firmiss, BS, Robert Dettman, PhD and Edward Gong, MD

Ann Robert H. Lurie Children's Hospital of Chicago

Presented By: Nicholas Tassone

**Introduction:** The partial bladder outlet obstruction model (pBOO) is commonly used to mimic human disease. Unfortunately, pBOO demonstrates variable degrees of obstruction, requiring bladder weight (BW) or urodynamic studies to determine obstruction. Our objective is to identify extent of obstruction soon after surgery by utilizing Void Stain on Paper (VSOP) assays (Figure 1A) and correlating with late BW.

**Methods:** pBOO was performed on 26 mice; 1- and 4-week VSOPs were quantified for mean voided volume (mVV) (Fig 1A). At 4 weeks, bladders were harvested and weighed. Correlation was evaluated using bivariate kernel density estimation (SAS). Single variable histogram of the data established groups based on BWs. mVV's and bladder weights within each group were averaged and plotted to render a non-linear regression model.

**Results:** A significant correlation was found between 1-week mVV's and 4-week BWs with a correlation coefficient of -0.60 (p=0.0012) upon bivariate analysis (Fig 1B). A non-linear regression of plotted data defined a statistically significant fit equation correlating 1-week mVV to 4-week BW (Figure 1C).

**Conclusion:** We demonstrate a novel method for forecasting degree of obstruction in pBOO based on 1-week post-operative VSOP mVV.
Podium #167
SACRAL NEUROMODULATION IN MEN: DOES PRIOR TRANSURETHRAL PROSTATE SURGERY MATTER?
Bradley Gill, MD, MS, James Ulchaker, MD, Howard Goldman, MD, Courtenay Moore, MD, Sandip Vasavada, MD and Raymond Rackley, MD
Cleveland Clinic
Presented By: Bradley C. Gill, MD, MS
Introduction: Sacral neuromodulation (SNM) is most studied in female patients with refractory urologic conditions. This study investigates how prior transurethral prostate procedures (TUPP) relate to SNM utilization in men.
Methods: All 2010-2015 SNM procedures in an academic system were retrospectively analyzed. Demographics, comorbidities, prior urologic medications and treatments (prostate resection: TURP, button vaporization: BVP, photovaporization: PVP), and SNM utilization (indication, implantation, revision, explant) were collected. Basic statistics were calculated (p<0.05 significant).
Results: Men pursued 55 staged and 4 percutaneous (PNE) trials. Of these, 13 had prior TUPP (6 PVP, 5 TURP, 2 BVP). SNM indications did not differ with or without TUPP. Men with prior TUPP were older than those without (67.8[61.6−72.6] vs 55.8[34.2−70.8], p<0.04) but neither body mass index, nor rates of diabetes, smoking, cardiovascular disease, or neurologic condition differed. No differences were found in alpha blocker, anticholinergic, or beta-3 agonist use. Prior TUPP, compared to none, was associated with PNE use (23% vs 2.2% p<0.03) but did not impact success of PNE (100% vs 100%), stage 1 (80% vs 68%), or permanent implantation (77% vs 67%). Treatment for urgency incontinence, compared to urgency/frequency, achieved greater stage 1 success (85.7% vs 40% p<0.004), which remained significant without TUPP (84.2% vs 28.6%, p<0.001) but not with (100% vs 66.7% p=1.00). TUPP did not impact SNM revision (23% vs 26%) or explant (9% vs 17%) rates.
Conclusion: Utilization of sacral neuromodulation was not impacted by prior transurethral prostate procedures, making it a viable treatment for refractory conditions in men.

Podium #168
CHANGES IN PROSTATE HEALTH INDEX (PHI) VALUES AS A PREDICTOR OF CLINICALLY SIGNIFICANT PROSTATE CANCER
Richard Fantus, MD\(^1\), Joshua Aizen, MD\(^1\), Jianfeng Xu, MD, PhD\(^2\), Chi Wand, PhD\(^2\), Brian Helfand, MD, PhD\(^2\) and Brittany Adamic, MD\(^1\)
\(^1\)University of Chicago; \(^2\)NorthShore University
Presented By: Brittany Adamic, MD
Introduction: Prostate health index (PHI) is an FDA-approved biomarker that is used to increase the detection of clinically significant prostate cancer (PCa). As little is known about PHI as it changes with time, we sought to determine the association between changes in PHI values and clinically significant PCa.
Methods: Subjects were all referred to a tertiary care urology clinic and had at least 2 PHI values. Included men ultimately underwent a prostate biopsy after the second PHI value.
Multivariate models were generated to determine the effect of the change in PHI in detecting clinically significant PCa (ISUP grade II or greater).

**Results:** Among 185 men with 2 PHI values, 90 (48.6%) ultimately underwent a prostate biopsy. On univariate analysis, the mean change in PHI was -12.4 (negative biopsies), +1.10 (ISUP grade I) and +7.0 (ISUP grade II or greater, p <0.01, Table). Multivariate analyses demonstrated that the change in PHI was a significant predictor of ISUP grade II or greater cancer (OR = 1.1; p<0.01; AUC of 0.80).

**Conclusion:** In men with a suspicious DRE or elevated PSA, PHI is a useful tool to determine who may have clinically significant PCa on biopsy. Among men being followed by PHI, changes over time may provide additional risk stratification for aggressive disease.

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Podium #169

**IsoPSA™ IN THE DIAGNOSIS OF PROSTATE CANCER, A COMPARISON OF PRELIMINARY PROSPECTIVE MULTI-CENTER AND VALIDATION TRIAL DATA SETS FOR THE DETECTION OF HIGH GRADE ADENOCARCINOMA OF THE PROSTATE**

Eric Klein, MD¹, Arnon Chait, PhD², Jason Hafron, MD³, Kenneth Kernen, MD², Kannan Manickam, MD⁴, Andrew Stephenson, MD¹, Mathew Wagner, MD⁵, Hui Zhu, MD⁶, Aimee Kestranek, PhD², Boris Zaslavsky, PhD² and Mark Stovsky, MD, MBA, FACS¹

¹Cleveland Clinic; ²Cleveland Diagnostics, Inc; ³Michigan Institute of Urology; ⁴Chesapeake Urology Associates; ⁵Kaiser Permanente Northwest; ⁶Louis Stokes VA Medical Center

**Presented By:** Mark D. Stovsky, MD, MBA, FACS

**Introduction:** We compare data for an initial prospective trial with a new validation trial cohort in the detection of high-grade (Gleason≥7) disease using overall and cutoff parameters derived from a preliminary study for IsoPSA™, a novel structure based protein cancer biomarker.

**Methods:** In both preliminary and validation trials, plasma samples were obtained from multiple clinical sites, collected within 30 days prior to prostate biopsy from patients with blood PSA between 2 and 62.8 ng/ml. IsoPSA was evaluated against 12 core TRUS biopsy results as gold standard (with a subset of 10 and 42 MR-guided biopsies in the preliminary and validation cohorts). The prevalence of high-grade patients in the preliminary and validation cohorts (N = 261 and 123, respectively) was 33.7% and 32.6%, respectively. The test parameter, K, was transformed into a risk probability, KR-HG, for high-grade disease using logistic regression model.

**Results:** ROC analysis for the preliminary vs. validation studies resulted in AUC=0.81 vs. 0.82 respectively. At a KR-HG<17% cutoff value established in the preliminary study to result in a high exclusion power of NPV=94.0%, the validation study demonstrated NPV=93.3%. Clinically, 45.1% and 47.0% of the total number of biopsies targeting high-grade disease could have been avoided in the preliminary and validation studies with 1.9% and 2.4% of delayed biopsies, respectively.

**Conclusion:** Clinical performance of IsoPSA™ in an initial prospective validation study was statistically similar to that obtained in a preliminary analysis of the assay in providing high negative predictive value concomitant with significant reduction in unneeded biopsies.
Poster #1

COMBINATION THERAPY FOR CICATRIX FORMATION AFTER NEONATAL CIRCUMCISION

Christopher Jaeger, MD1, Christina Ching, MD2, Daniel DaJusta, MD2, Daryl McLeod, MD2, Molly Fuchs, MD2, Venkata Jayanthi, MD2 and Seth Alpert, MD2

1Ohio State University; 2Nationwide Childrens Hospital

Presented By: Christopher Jaeger, MD

Introduction: Entrapment of the penis after neonatal circumcision, also known as cicatrix formation, is a challenging clinical issue. Topical steroids or mechanical stretching are established treatment methods but can have high recurrence and retreatment rates. At our institution, we combine stretching in office followed by steroid treatment and are reporting our outcomes.

Methods: We retrospectively reviewed records for those with cicatrix after neonatal circumcision from 2014 to present. Patients who underwent stretching or steroid treatment alone were compared to patients who underwent combination therapy. Demographics were collected in addition to recurrence and retreatment rates. Statistical analysis was performed by chi-square test.

Results: 40 patients were identified with cicatrix after neonatal circumcision. Mean age at presentation was 3.4 months. Based on surgeon preference, 29 patients (72.5%) had combination therapy, 8 patients (20%) had stretching alone, 1 patient (2.5%) had steroids alone, and 2 patients (5%) had circumcision revision. Mean follow-up for all patients was 6.6 months. Of those who received combination therapy, 83% had no recurrence and required no further treatment. Of the patients whose cicatrix was stretched only, 50% had recurrence and further treatment was recommended. The patient who had steroid treatment only had no recurrence. Differences in recurrence following treatment comparing combination therapy to stretching alone approached statistical significance (p=0.056).

Conclusion: Treatment of cicatrix formation after neonatal circumcision with combination of mechanical stretching and topical steroids was successful in majority of patients at our institution. This may be a beneficial improvement over monotherapy with either stretching or steroids alone.

Poster #2

PRENATAL DETECTION AND EVALUATION OF DIFFERENCES OF SEX DEVELOPMENT AND IMPACT OF GENETIC TESTING

Esther L. Finney, BA1, Courtney Finlayson, MD2,6, Ilina Rosoklija, MPH3, Elizabeth A. Leeth, MS4,7, Diane Chen, PhD5,8 and Emilie K. Johnson, MD, MPH1,3

1Northwestern University Feinberg School of Medicine, Department of Urology; 2Northwestern University Feinberg School of Medicine, Department of Pediatrics; 3Ann & Robert H. Lurie Children's Hospital of Chicago, Division of Urology; 4Northwestern University Feinberg School of Medicine, Center for Genetic Medicine; 5Northwestern University Feinberg School of Medicine, Department of Psychology and Behavioral Sciences; 6Ann & Robert H. Lurie Children's Hospital of Chicago, Division of Endocrinology; 7Ann & Robert H. Lurie Children's Hospital of Chicago, Department of Pediatrics; 8Ann Robert H. Lurie Children's Hospital of Chicago, Division of Child Adolescent Psychiatry

Presented By: Esther Finney

Introduction: New methods of non-invasive prenatal testing (NIPT) include cell-free DNA (cfDNA). We assessed the utilization and impact of cfDNA on prenatal detection and evaluation of DSD and reported parental distress.

**Results:** Of 66 patients identified, 10 (15%) had prenatal detection of suspected DSD. 6/10 had cfDNA results discordant with US imaging. Two patients detected by ambiguous genitalia on US, two detected through chromosome analysis for non-DSD indications found sex chromosome abnormalities. Mothers of 2/10 patients obtained additional testing (details by year in table). Final diagnoses: 4/10 46,XY DSD, 3/10 sex chromosome DSD, 3/10 non-DSD diagnoses. Parental distress during prenatal evaluation was noted for 6/10 mothers, 1/10 reported suicidal thoughts.

**Conclusion:** Over five years, 10 patients presented to our clinic with a prenatally suspected DSD, four in the last year. Prenatal DSD detection can occur through genotype-phenotype discordance and is occurring more frequently at our clinic recently, possibly due to increased cfDNA utilization. Prenatal detection and evaluation of a potential DSD can cause significant parental distress, which underscores the need to provide counseling pre- and post-NIPT.

**Poster #3**

**WHAT ADVICE ARE PARENTS RECEIVING ON CARE OF THE UNCIRCUMCISED PENIS?**
Patrick Meade, Ilina Rosoklija, MPH and Dennis Liu, MD
Lurie Children's Hospital of Chicago
Presented By: Patrick Meade

**Introduction:** Recent data suggests that overall rates of circumcision in the U.S. are declining. Despite this, there is little literature regarding how well healthcare providers are preparing parents for caring for their son’s uncircumcised penis.

**Methods:** An anonymous survey was administered via Amazon Mechanical Turk. Parents with at least one uncircumcised child and a U.S. postal code qualified to participate.

**Results:** Of the 453 respondents, the majority were female (51%), white (75%), and non-Hispanic (86%). Only 63% of parents reported receiving advice from a healthcare provider on how to care for their son’s foreskin, most commonly from pediatricians (66%) or nurses (36%). Only 57% of those parents received advice on when to begin retracting their son’s foreskin (see figure 1). Fourteen percent of parents reported that a healthcare provider had forcefully retracted their son’s foreskin, with a pediatrician being the most common type of provider (51%).

**Conclusion:** A majority of parents reported receiving some type of advice on how to care for their son's uncircumcised penis. Pediatricians were identified as both the main source of advice and the most common culprit in forceful retraction. This highlights the need for pediatric urologists to establish best practice guidelines and to improve the education of pediatricians on the care of the uncircumcised penis.
Poster #4
CAN ANDROGENS HAVE SIGNIFICANT EFFECTS ON MESENCHYMAL STEM CELLS
Megan Devine, BS, Paula Firmiss, BS, Diana Bowen, MD, Natalie Kukulka, BA, Robert Dettman, PhD and Edward Gong, MD
Ann Robert H. Lurie Children’s Hospital of Chicago
Presented By: Megan Y. Devine, BS

Introduction: We previously observed that following partial bladder outlet obstruction, fibrosis was more severe in male mice than female mice. Our objective is to determine if male androgen and the androgen response gene, NKX3.1, affects bladder mesenchymal stem cells (MSC) after obstruction.

Methods: Sham, Partial Obstruction (PO) and Partial Obstruction with Castration (CPO) surgeries were performed on 8-10wk male CD-1 mice. Fluorescence Activated Cell Sorting isolated bladder MSCs (Sca-1+/CD34+/lin-) 7-days post-operatively. MSCs were cultured for 24-hours and expression of androgen receptor (AR) and NKX3.1 on the MSCs was determined with immunofluorescence.

Results: Bladder function was reduced and fibrosis increased after PO, whereas function was normal and fibrosis decreased after CPO. The MSC population decreased from 41% in sham to 25% in PO, but was restored to 54% with castration (1A). MSCs were found to express AR and NKX3.1. After obstruction, 75% of MSCs expressed AR versus 39% in sham and 26% in CPO (1B). Similarly, 87% of MSCs expressed NKX3.1 after PO versus 23% in sham and 14% in CPO (1C).

Conclusion: Our data suggests that androgen directly affects bladder MSCs. NKX3.1 activation after obstruction may identify a maladaptive mechanism that leads to fibrosis, thus providing a novel therapeutic target to prevent bladder deterioration.

Poster #5
SPILLING THE BEANS: UNRELIABILITY OF ESTIMATED RENAL FUNCTION IN SPINA BIFIDA PATIENTS
Belinda Li, MD, Cameron Arkin, BA, Theresa Meyer, MS, RN, CPN, Ilina Rosoklija, MPH, Kavita Hodgkins, MD, Earl Cheng, MD, Elizabeth Yerkes, MD and David Chu, MD, MSCE
Ann Robert H. Lurie Children’s Hospital of Chicago
Presented By: Belinda Li, MD

Introduction: Patients with spina bifida (SB) are at risk for chronic kidney disease (CKD). Current estimated glomerular filtration rate (eGFR) equations may be inaccurate because of abnormal muscle mass and height. We compared multiple equations to characterize the variability of eGFR in SB patients, hypothesizing that creatinine-based equations confer significant variability.

Methods: A retrospective cross-sectional study from 2002-2017 was performed at a pediatric SB clinic. Children (<18 years) and adults (>18 years) with height and lab data within 180 days were included. Four pediatric equations and three adult equations were tested (Table). The primary outcome was variation in eGFR among equations, measured by
coefficients of variation (CV), percent with eGFR<60 and <90 mL/min/1.73m2 (“units”), Spearman correlation, and Bland-Altman plot analyses.

**Results:** 178 children and 74 adults were eligible. In both groups, median eGFRs were different across equations (p<0.001). The bedside and CKD-EPI-Cys-C equations showed the highest CVs in children and adults, respectively. CKD staging in children showed large variation, yielding ranges of 4-71% with eGFR <90 units and 1-10% with eGFR <60 units. On pairwise comparisons, all equations were significantly correlated except the Zappitelli and CKD pediatric equations.

**Conclusion:** Creatinine-based equations in children with SB may be unreliable. Development of a SB-specific eGFR equation may be warranted.

Poster #6

**TRENDS IN VESICOURETERAL REFLUX MANAGEMENT: AN ANALYSIS OF AMERICAN BOARD OF UROLOGY CASE LOGS 2006-2016**

Derek Gearman, MD¹, Tijani Osumah¹, Glenn Cannon, MD², Jonathan Routh, MD³, Candace Granberg, MD¹ and Patricio Gargollo, MD¹

¹Mayo Clinic - Rochester; ²UMPC; ³Duke

Presented By: Derek J. Gearman, MD

**Introduction:** Changes in vesicoureteral reflux (VUR) management show a substantial decline in open operations in favor of endoscopic/robotic techniques. We utilized American Board of Urology (ABU) procedure logs to identify trends in endoscopic injection versus open and laparoscopic/robotic ureteroneocystotomy (UNC) and further characterize patient/surgeon related factors.

**Methods:** We queried ABU initial or re-certification case logs for VUR treatment modalities. We request information for CPT codes 50780, 50947, 50948, and 50783 representing open and laparoscopic/robotic UNC, plus 52327 representing endoscopic utereral bulking procedures. Years 2006 to 2016 were analyzed for certification type (initial certification vs. recertification), year, subspecialty, applicant demographics, and case volume using descriptive statistics and logistic regression. For all statistical analyses, p <.05 was considered significant.

**Results:** 2859 procedures were captured in patients’ age 0-18. Most patients were female (76%). Most procedures, 54.7%, were endoscopic subureteric injection followed by 37.0% open UNC, 5.2% open UNC with tapering, and 3.1% laparoscopic/robotic UNC with or without cystoscopy. 92% of laparoscopic/robotic UNCs were performed in years 2012-2016 versus 8% in 2006-2011. Factors associated with performing laparoscopic/robotic surgery included younger surgeons (OR = 1.18 per year age, p < 0.0001) and older patients (OR = 1.07 per year age, p = 0.007) while patient gender was not predictive (p = 0.55).

**Conclusion:** Endoscopic subureteric injections currently outpace open and laparoscopic/robotic UNC. Interestingly, the number of laparoscopic/robotic UNCs rose despite reported higher complication rates/overall cost with equivocal success. Laparoscopic/robotic UNCs were performed by younger surgeons on older patients regardless of gender.
**Poster #7**

**REFERRAL PATTERNS FOR UNDESCENDED TESTIS: A 7 YEAR COMPARATIVE ANALYSIS OF PRIMARY CARE PROVIDERS**

Colby Dixon, MD, Elizabeth Bearrick, BS and Jane Lewis, MD

University of Minnesota

Presented By: Colby A. Dixon, MD

**Introduction:** In 2014 the AUA published guidelines recommending that boys with undescended testis (UDT) be referred to a urologist by 6 months of age. In this study we assess referral patterns to our university center from primary care providers for UDT. We aim to identify changes in referral patterns in response to the 2014 AUA guideline.

**Methods:** A 9 question survey was sent to providers who had previously referred a patient to our pediatric urology practice. The results were compared to a similar survey from 2010, conducted prior to publication of the AUA guidelines.

**Results:** 138 providers (27.6%) completed surveys. Few providers would refer a boy with unilateral or bilateral palpable UDT by 6 months of age (37.0% and 38.4% respectively). This was unchanged from 2010 (p = 0.68 and 0.27 respectively). Two-thirds of physicians would refer a patient with unilateral nonpalpable UDT by 6 months (68.8%); this was also unchanged from 2010 (p = 0.87). Residency training was cited as the primary source of knowledge regarding UDT although 89.3% of respondents were >5 years removed from residency training.

**Conclusion:** The majority of providers delay referral for UDT past the recommended timeframes. There was minimal change in referral patterns between 2010 and 2017 despite the release of the AUA guidelines in 2014. Residency training was consistently identified as the primary source of knowledge regarding management of UDT. These findings suggest an unmet need for education regarding contemporary management of UDT for the primary care physicians in our community.

**Poster #8**

**ROBOT-ASSISTED SURGERY IN PEDIATRIC UROLOGY: ASSESSING CLINICAL CLAIMS ON WEBSITES OF UNITED STATES CHILDREN’S HOSPITALS**

Jorge Whitley, Tijani Osumah, MD, MS, Candace Granberg, MD and Patricio Gargollo, MD

Mayo Clinic

Presented By: Tijani S. Osumah, MD, MS

**Introduction:** U.S. children's hospitals commonly advertise robot-assisted surgery (RAS) on their websites as a superior alternative to open surgery in spite of scant objective data in the published literature to support these claims. We assessed robotic surgery claims on websites of U.S. children's hospitals.

**Methods:** Using the Children's Hospital Association directory (www.childrenshospitals.org), we reviewed websites of children's hospitals that provide pediatric urology services and identified those that specifically offer robotic surgery. Statements describing postoperative pain, scarring, recovery time, perioperative outcomes and costs were abstracted.

**Results:** Of 250 children's hospitals, 81 (32%) hospitals offer RAS and were included in our review. Distribution of claims is summarized in Table 1. Most common claims include shorter recovery times (81.5%), better cosmetic outcomes (74.1%), shorter length of stay (55.6%), lower postoperative pain (69.1%), lower infection risks (37.0%) and less blood loss (40.7%) in comparison to open surgery. Two (2.5%) hospital websites mentioned risks unique to RAS, and none mentioned robotic-specific costs.

**Conclusion:** Children's hospital websites often claim superior outcomes with RAS when compared to open procedures without reference to objective data. Very few institutions mention robotic-specific risks and complications and none disclose differences in cost.
**Poster #9**

**ALL IN THE FAMILY: A QUESTIONNAIRE BASED INVESTIGATION INTO THE RELATIONSHIP BETWEEN PEDIATRIC AND PARENTAL BLADDER AND BOWEL DYSFUNCTION**

Kevin Flynn, MD, Denise Juhr, Patrick Ten Eyck, MS, PhD, Rachel Doggett, PA-C, MPAS, Kristine Bonnett, ARNP, Gina Lockwood, MD, Christopher Cooper, MD and Douglas Storm, MD  
University of Iowa  
Presented By: Kevin J. Flynn, MD

**Introduction:** Bladder and Bowel Dysfunction (BBD) is a common pediatric condition with significant urologic implications. Due to a paucity of existing research, this study investigated the relationship of children with BBD and parental voiding habits.

**Methods:** Voiding questionnaires were completed both by children evaluated for BBD and their parents. Responses were classified as "normal" or "dysfunctional". A Chi-squared analysis identified pairs of responses with a statistically significant (p<0.05) relationship.

**Results:** Over 6-months, 200 questionnaire pairs were completed. Significant relationships were identified between 33 pairs of questions. Children with urinary urgency (UU) were more likely to have parents with UU (OR=25.4, p<0.001), who defer urination (OR=5.2, p<0.001), and urinate infrequently (OR=5.1, p=0.02). Children who defer urination were more likely to have parents who defer urination (OR=12.3, p<0.001) have UU (OR=7.9, p<0.001) and who urinate infrequently (OR=3.8, p=0.004). Children with nocturnal enuresis were more likely to have parents with UU (OR=10.2, p<0.001), who urinate infrequently (OR=3.4, p=0.02), and who delay urination (OR=3.3, p=0.002). Children with infrequent defecation were more likely to have parents with infrequent defecation (OR=135.8, p<0.001). Children with hard stools were more likely to have parents with infrequent defecation (OR=5.7, p=0.002) and hard stools (OR=3.7, p=0.009).

**Conclusion:** Children with BBD more commonly have parents who delay urination, have urinary urgency, and defecate infrequently. It is unknown if this represents learned behaviors, environmental factors, or a complex underlying genetic component. Regardless, clinicians should educate parents and children on healthy habits to mitigate the risk of perpetuating a pattern of BDD.

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**Poster #10**

**THE NEED FOR SPECIALIZED TRANSITION TRAINING: DISAGREEMENTS AMONGST SPECIALTIES**

Joshua Roth, MD1, Sean Elliott, MD, MS2, Konrad Szymanski, MD, MPH1, Mark Cain, MD1 and Rosalia Misseri, MD1  
1Riley Hospital for Children at Indiana University Health; 2University of Minnesota  
Presented By: Joshua Roth, MD

**Introduction:** Improved management of children with neurogenic bladder has resulted in more adults living with congenital urologic conditions (ACUC). The aim of this study was to survey pediatric urology fellowship directors (PUFD) and adult reconstruction fellowship directors (ARFD) to assess who they believe has sufficient training to care for these complex patients.
Methods: A survey was created to assess attitudes towards specific training to care for ACUC. The survey was administered to 31 PUFD and 26 ARFD (16 genitourinary reconstruction (GURS) and 10 female pelvic medicine and reconstruction (FPMRS)).

Results: 26 (83.9%) PUFD and 10 (38.5%) ARFD completed the survey. All PUFD were fellowship trained in pediatrics. Of the ARFD, 5 were GURS trained, 4 were FPMRS trained and 1 was not fellowship trained. The majority (65.4% pediatric, 90.0% adult) believe specific training is warranted. Most PUFD believe pediatric urologists have sufficient training to care for ACUC (84.6%), while those with adult reconstructive training do not (40.0%). Conversely, adult urologists believe that pediatric urologists do not have sufficient training to care for ACUC (40.0%), while those with adult reconstructive training do (FPMRS: 66.7%, GURS: 60.0%).

Conclusion: Both pediatric and adult reconstructive urologists believe specific training in transitional urology is warranted. Neither group considers the other to be ideally suited to care for this complex patient group.

Poster #11
FUNDING SUCCESS IN PEDIATRIC UROLOGY: FROM EARLY CAREER TO RESEARCH INDEPENDENCE
Soojin Kim, MD¹, Belinda Li, MD², Ilina Rosoklija, MPH², Elizabeth Yerkes, MD² and David Chu, MD, MSCE²
¹Ann & Robert H. Lurie Children's Hospital/Northwestern Medicine Feinberg School of Medicine; ²Ann Robert H. Lurie Children's Hospital
Presented By: Soojin Kim, MD

Introduction: While National Institutes of Health (NIH) funding rates have been explored in other specialties, pediatric urology has not been evaluated. We sought to characterize potential predictors of successful NIH/Agency for Healthcare Research and Quality (AHRQ) grant recipients among pediatric urologists.

Methods: Pediatric urology fellowship graduates from 1985-2017 in North America were queried using the NIH Research Portfolio Online Reporting Tools. Primary outcome were K, R, or U-awards. Secondary outcome was number of publications. Covariates included advanced degree(s), award type, sex, fellowship program, and years of fellowship graduation and grant awards. Cox proportional hazards and linear regression models were used.

Results: Of 468 pediatric urologists, 36 (8%) were NIH/AHRQ grant recipients. Median (IQR) times to K and R/U-awards from fellowship graduation were 3 (2-4) and 6 (3-9) years, respectively. Transition from K- to R/U-award took median of 6 (IQR 5-6) years. After adjustment for covariates, having an advanced degree was associated with greater funding success for K-awards (HR 3.83 [95% CI, 1.21-12.14]) and R/U-awards (HR 3.11 [1.21-8.02]), and with more publications (β 16.82 [6.36-27.28]). Male sex was significantly associated with more publications (β 9.16 [1.99-16.33]).

Conclusion: The overall prevalence of NIH/AHRQ grant recipients among pediatric urologists was 8%, and having an advanced degree was the only associated factor.
Poster #12
IS A SURGICAL-DRAIN ALWAYS NECESSARY IN A STENTED PEDIATRIC PYELOPLASTY?
Mohammed Zaher, DO², Akshay Sood, MD¹, Rebecca Ellens, PsyD², Colin Brannagan, BS², Janae Preece, MD²,³, Kristina Suson, MD²,³ and Yegappan Lakshmanan, MD²,³
¹Henry Ford Health System; ²Children's Hospital Michigan, Detroit Medical Center; ³Vattikuti Urology Institute, Henry Ford Hospital
Presented By: Akshay Sood, MD

Introduction: Pyeloplasty for ureteropelvic junction obstruction involves use of a stent or a surgical-drain or both depending on patient/surgeon factors. In this study, we sought to assess whether a temporary surgical-drain is always necessary in a stented open pyeloplasty.

Methods: Medical charts of children undergoing pyeloplasty during the years 2010-2017 were retrospectively reviewed (n=113). All patients were followed for 12-36 months. The patients were divided into two-groups: surgical-drain alone versus surgical-drain with stent.

Outcomes studied were: 1. an atypical postoperative course defined as a urine leak, prolonged hospital-stay, percutaneous/endoscopic drainage, or readmission, and 2. re-do pyeloplasty.

Results: All patients received a surgical-drain with (n=80) or without (n=33) a ureteral-stent (3, 4.7 or 6Fr). Urine leaks were noted in 15.2% and 10.3% of patients with surgical-drain alone versus surgical-drain with stent (p=0.663). 9.1% and 0% patients required re-do surgery with surgical-drain alone versus surgical-drain with stent (p=0.006; Table 1.1). In sub-group analysis of patients with surgical-drain and stent, urine leaks were noted only in patients with 3Fr stent (Table 1.2; 14.3% vs 0%, p=0.047).

Conclusion: Patients undergoing open pyeloplasty with a surgical-drain and stent have a propensity towards better outcomes, compared to those without. In patients receiving a stent >3Fr, a surgical-drain may not be necessary; this may reduce postoperative morbidity.

Poster #13
PROSPECTIVE ANALYSIS OF A URODYNAMICS PROTOCOL: CAN ROUTINE URINE CULTURES BE ELIMINATED?
Rachel Shannon, BS, Dawn Diaz Saldano, APN, MSN, CPNP, Devon C. Snow-Lisy, MD, Theresa Meyer, MS, RN, CPN, Ilina Rosoklija, MPH, Emilie K Johnson, MD, MPH and Elizabeth B. Yerkes, MD
Ann Robert H. Lurie Children's Hospital of Chicago
Presented By: Rachel L. Shannon, BS

Introduction: A recent retrospective analysis at our institution suggests the risk of symptomatic post-urodynamics (UDS) urinary tract infection (UTI) is low and may not warrant routine pre-UDS urine culture (UCx). We now aim to prospectively evaluate our UDS protocol and the utility of pre-UDS UCx.

Methods: A prospective study of patients undergoing UDS at a freestanding children's hospital between 7/2016 - 6/2017 was undertaken. Positive UCx (≥10^4 CFU/mL) were
treated in patients who did not use clean intermittent catheterization (CIC), and in CIC patients only if new urinary symptoms developed.

**Results:** 483 patients (50% male, median age 8 years [0-28]) underwent 553 UDS with UCx performed before the test. 39% (218/553) of UCx were positive. 80% (174/218) of these were from stable or asymptomatic CIC patients, and 19% (41/218) were from stable or asymptomatic non-CIC patients. Only 1% (3/218) of positive UCx were associated with new symptoms after UDS, a symptomatic post-UDS UTI rate of 0.5% (3/553). All 3 patients with symptomatic post-UDS UTI used CIC, but varied widely in age (2-22 years) and demonstrated no unique clinical predictors. The rate of asymptomatic bacteriuria ≥10⁴ CFU/mL was 81% (174/214) in CIC patients and 12% (40/339) in non-CIC patients.

**Conclusion:** Prospective evaluation of our UDS protocol determined that (1) risk of symptomatic post-UDS UTI was <1% with no identified clinical predictors and that (2) asymptomatic bacteriuria ≥10⁴ CFU/mL was common in both CIC patients (81%) and non-CIC patients (12%). Refinement of our protocol is indicated, which may include eliminating routine UCx.

**Poster #14**
READMISSION TO INDEX HOSPITAL: IMPROVING POST-OPERATIVE CARE IN RADICAL CYSTECTOMY PATIENTS
Chirag Doshi, MD, Eric Kirshenbaum, MD, Alex Gorbonos, MD, Marcus Quek, MD and Gopal Gupta, MD
Loyola University Medical Center
Presented By: Chirag Doshi, MD

**Introduction:** Previous research has confirmed an inverse relationship between hospital radical cystectomy surgical volumes and inpatient morbidity and mortality in radical cystectomy patients. We hypothesized that this relationship persists for postoperative readmissions. Post-discharge care fragmentation was defined as a readmission to any hospital other than the index hospital at which the initial surgery was performed. The objective of this study was to assess the impact of post-discharge care fragmentation within the first year after a radical cystectomy on mortality rates.

**Methods:** The Healthcare Cost and Utilization Project State Inpatient Database for the state of California from 2007-2011 was used to identify patients who underwent radical cystectomy. Patients who had a readmission within one year of surgery were identified. Readmission encounters were labeled as fragmented and unfragmented utilizing a unique hospital ID. Outcomes including length of stay (LOS) and mortality rate were assessed.

**Results:** 6742 radical cystectomy patients were analyzed. These patients had a total of 8437 readmission encounters; of which 3364 (39.9%) were fragmented. Readmission LOS was similar for fragmented and unfragmented cohorts (7.2 days vs 7.1 days, p=0.91). Patients with post-discharge care fragmentation had an increased mortality rate (7.1% vs 2.9%, p<0.001) during their readmission.

**Conclusion:** Post-discharge care fragmentation after radical cystectomy significantly increases the risk of mortality. This factor should be a considered while making transfer decisions for patients who have undergone radical cystectomy. Efforts should be made to transfer patients to their index hospital. This is a potential area for hospital quality of care improvement.

**Poster #15**
A NATIONWIDE ANALYSIS OF COMPLETE URINARY TRACT EXTIRPATION
Jacob Jipp¹, Zachary Smith, MD², Peter Langenstroer, MD¹, Kenneth Jacobsohn, MD¹ and Scott Johnson, MD¹
¹Medical College of Wisconsin; ²University of Chicago
Presented By: Jacob Jipp, MD

**Introduction:** Complete urinary tract extirpation (CUTE) involves bilateral nephroureterectomy and radical cystectomy. This may be necessary for patients with concomitant upper and lower tract urothelial carcinoma (UC) or patients with chronic renal
failure and UC. Descriptions of CUTE are limited to case reports and small case series. However, long-term outcomes data are unknown.

**Methods:** The United States Renal Data System is a prospective database that includes every hemodialysis (HD) patient in the US. We identified patients undergoing radical cystectomy and bilateral nephroureterectomy for UC and resultant need for HD. Post-operative details and complications were assessed. Competing risks analysis estimated overall and cancer–specific survival. Cox regression identified predictors of death.

**Results:** A total of 317 patients were identified. Mean age was 65.3 ± 12.9 years. Mean length of stay was 16.2 ± 15.3. Overall, 46.0% of patients experienced a complication within 30 days; infectious–related complications were most common (13.6%). Only female sex was predictive of experiencing a complication (OR 2.37, p<0.01). 30–day mortality rate was 8.5%. Overall mortality at 1, 3, and 5 years was 45.3%, 69.0%, and 82.7%, respectively. Cancer–specific mortality at 1, 3, and 5 years was 10.0%, 15.7%, and 16.8%, respectively. Age (subhazard ratio, 1.03; 95%CI, 1.02–1.04) and active smoking status (subhazard ratio, 3.35; 95%CI, 1.50–7.50) predicted overall mortality.

**Conclusion:** To our knowledge, this represents the largest study evaluating outcomes following CUTE. CUTE is associated with significant morbidity and mortality; less than 20% of patients surviving 5 years and nearly half of patients experience complication within 30 days.

Poster #16
QUALITY OF LIFE, ANXIETY, AND UROLOGICAL SYMPTOMS IN MEN DIAGNOSED WITH LOCALIZED PROSTATE CANCER ON ACTIVE SURVEILLANCE: RESULTS FROM A 5 YEAR, PROSPECTIVE CLINICAL STUDY
Nicholas Kirwen, BA1, Brittany Lapin, PhD1, Kristian Novakovic, MD1, Brian Helfand, MD1, Jacqueline Petkewicz, MA1, Chih-Hsiung Wang, PhD1, Charles Brendler, MD1 and David Victorson, PhD2
1NorthShore University HealthSystem; 2Northwestern University Feinberg School of Medicine
Presented By: Nicholas Kirwen, BA

**Introduction:** The purpose of this study was to prospectively examine long-term quality of life (QOL), anxiety, and urological symptoms in a cohort of men placed on active surveillance.

**Methods:** Participants completed patient reported outcomes of sexual function (EPIC-26), anxiety (MAX-PC 18), QOL (PROMIS Global), including questions about treatment regret and satisfaction at enrollment, every 6 months for the first 2 years, and annually thereafter. We analyzed data using longitudinal mixed-effects models using maximum likelihood estimation with unstructured covariance. We also adjusted for age, BMI, race, marital status, employment, and education.

**Results:** Upon examining the entire sample over the course of 5 years (enrollment n=346) we observed sexual function scores significantly decreased (p<0.01), anxiety scores improved (p<0.01), and there was no difference in overall QOL. Treatment regret and satisfaction also significantly improved across the 5 years (p=.03). Sub-group analyses revealed that significant differences on outcomes existed between men who remained on AS vs. those who dropped out (e.g., lower scores for those who dropped) specifically on perceptions of overall health (p=.03) physical health (p=.03), and whether they would make the same treatment decision again (p<.01). While fear of progression remained relatively unchanged for men who dropped out due to anxiety, men who remained on AS or dropped out do to other reasons showed lower fear of progression scores over time, especially between 3-5 years post enrollment (p=.03).

**Conclusion:** Results suggest that when looking at everyone as one group, QOL and related factors improve over time, however when examining specific sub-groups, significant differences exist.
**Poster #17**

**CHRONIC PELVIC PAIN: CLINICAL OUTCOMES FROM A MULTIDISCIPLINARY CLINIC**

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Presented By: Lauren Westbay, MD

**Introduction:** Given the multifactorial nature of chronic pelvic pain (CPP), this study was designed to describe a comprehensive and multidisciplinary approach to treatment and assess longitudinal patient reported outcomes during treatment.

**Methods:** This prospective study used electronic medical records to review patient demographics, patient reported outcomes, and utilization of a multidisciplinary CPP clinic with urology, gynecology, physiatry, psychology, and physical therapy. Each patient completed a packet of information at each visit that included numerical rating scale (NRS) for current and average pain, pain diagram to map pain location, Pain Disability Index (PDI), Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder (GAD) Scale, and Patient Global Impression of Improvement (PGI-I) Scale which were used to evaluate patient improvement over time.

**Results:** Three hundred and eighteen patients were included in this study with 211 patients having follow-up information. Patients showed improvement from baseline with a decrease in NRS for average pain (-1.02 points, 95% CI: -1.91 to -0.13, p=0.02), PDI overall score (-8.64 points, 95% CI: -14.25 to -3.04, p=0.001), PDI sexual subscore (-2.35 points, 95% CI: -3.56 to -1.13, p< 0.001) and PHQ-9 scores (-2.10 points, 95% CI: -3.90 to -0.30, p=0.01) by visit 5. Additionally, patients report improvement in PGI-I scale with a decrease in score -0.57 (95% CI: -1.05 to -0.09) points (p = .01) at visit 5 compared to baseline.

**Conclusion:** This study demonstrates significant improvement in multiple dimensions of CPP for patients with follow up in a multidisciplinary pelvic pain clinic.

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**Poster #18**

**PATIENT-REPORTED OUTCOMES IN NON-COMPLIANT PATIENTS AFTER ANTERIOR URETHROPLASTY**

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Presented By: Michael Maidaa, BS

**Introduction:** Patient clinical follow-up compliance after anterior urethroplasty is poor, though asymptomatic recurrences have been known to occur. A remote monitoring protocol was thus developed to screen at-risk patients without a clinical visit.

**Methods:** Men undergoing bulbar urethroplasty from 2010 to 2015 enrolled in a prospective outcomes study were eligible for this study. Patients agreed to standard follow-up with cystoscopy, questionnaire and uroflow at 3 and 12 months, then yearly. Non-complaint patients (lack of in-person visits 11+ months post-op) were asked to complete a patient-reported outcomes measure (PROM) questionnaire and return for objective testing.

**Results:** Of 137 eligible men, 69 (50.3%) were non-compliant, of which 23 (33.3%) completed remote PROM testing and 8 (11.6%) returned for follow-up cystoscopy (one symptomatic patient had recurrence). Comparison of PROM data between compliant and non-compliant cohorts is shown in the Figure. Post-void dribbling was the only significant difference (p-value 0.02). Most common reported reasons for non-compliance were unawareness of clinic visit (33%) and lack of symptoms (33%).

**Conclusion:** Obtaining objective follow-up after urethroplasty remains challenging because of patient demographics and the disease's nature (non-oncologic). Our attempt to perform remote monitoring with PROMs showed that symptoms were similar between the cohorts, but compliance remained poor, injecting further doubt into the quality of longitudinal urethroplasty studies.
Poster #19
USE OF COMPUTER VISION MOTION ANALYSIS TO AID IN SURGICAL SKILL ASSESSMENT OF SUTURING TASKS
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Presented By: Brady L. Miller, MD, MPH

Introduction: Marker-less video motion analysis can quantify kinematic properties of simulated operative tasks without need for expert review which can be time-consuming and subjective. Here, we assess the feasibility of this technology in the surgical simulation setting and compare hand summary kinematics with a standardized self-assessment using two simulated tasks.

Methods: Medical students, residents, attending and retired surgeons completed simulated suturing tasks. Performance was self-rated using previously tested visual analog motion scales. Digital cameras were positioned to record hand motions at 30 frames/sec without markers. Video analysis utilized a semi-supervised cross correlation template matching algorithm, producing an x-y pixel location of the participant's dominant hand across successive video frames, enabling the kinematic parameters speed, acceleration and jerk to be calculated.

Results: Participants (n=35) were recorded performing both tasks (n=70 observations), totaling 5.2 hours (avg 4:45 min/video) video time. Despite some tracking artifact, kinematic parameters were calculated for all (100%) observations. Mean acceleration was greater for residents (631.1 mm/sec^2) than attendings (577.8), students (563.9) and retirees (471.2), though was not statistically different (p=0.32). Mean speed and jerk index were also greater for residents than others but also not statistically different (p=0.27). Self-coordination rating was weakly correlated with speed (r=0.24, p=0.04), acceleration (r=0.31, p=0.01) and jerk (r=0.31, p=0.01).

Conclusion: Marker-less video motion analysis successfully tracked hand movement and represents a potentially high-throughput tool with on demand availability to provide objective feedback. Some difference by experience level was suggested that may be accentuated with increasingly difficult tasks.

Poster #20
PATTERNS OF CONSULTATION FOR DIFFICULT URETHRAL CATHETERIZATION
John Cooper, MD, Mit Shah, BS, Daniel Szabo, MD, Amy Lehman, MAS, Tatevik Broutian, PhD and Fara Bellows, MD
Ohio State University Wexner Medical Center
Presented By: John L. Cooper, MD

Introduction: Difficult urethral catheterization is a common reason for inpatient urologic consultation. We sought to examine the different methods used by urologic consultants to obtain successful catheterization.
Methods: We conducted a retrospective review of adult male patients who experienced difficult catheterization at our institution from January 2014 to December 2016. We examined baseline demographics and patient characteristics between patients with successful “simple” catheterization (defined as placement of a standard silicone, coudé or 3-way catheter) vs. “complex” catheterization, as well as patients requiring multiple catheterization consultations vs. a single consultation.

Results: 139 consultations were placed for 111 patients. Catheter placement details are shown in Figure 1. “Simple” catheterization was successful in 94 cases (68%). “Complex” patients had higher rates of prior urethral procedures (33% vs 17%) or urethral stricture disease (22% vs 4%). Patients requiring multiple consultations (n=19) tended to more frequently have a history of BPH (37% vs 23%), urinary retention (63% vs 46%) or trauma at previous attempts (53% vs 33%).

Conclusion: Most difficult catheterization consultations were successfully managed with simple techniques, suggesting that further training may reduce the need for urologic consultation. History of urethral procedures or urethral strictures are factors that may predict the need for early urologic consultation to reduce risk of iatrogenic trauma.

Poster #21
QUALITY IMPROVEMENT: PROSTATE CANCER SCREENING PILOT AT THE ENGLEWOOD MILE SQUARE HEALTH CENTER
James Stinson, MS1, Michael Abern, MD2, Perrin Greene, MSW2, Karriem Watson, DHSc, MPH3 and Peter Gann, MD, PhD4
1University of Illinois Chicago College of Medicine; 2University of Illinois Hospital, Department of Urology Prostate Cancer Working Group; 3University of Illinois Hospital, Cancer Center Prostate Cancer Working Group; 4University of Illinois Hospital, Department of Pathology
Presented By: James A. Stinson III, MS

Introduction: African American (AA) men newly diagnosed with prostate cancer (PCa) are 2.2x more likely than Caucasians to present with PSA levels >10.0 ng/mL and a 4:1 prostate volume. AA men in Englewood Chicago, IL, a 70% AA neighborhood, die from PCa at over 3x the U.S. mortality rate and are not benefitting from current screening guidelines. We developed and piloted “Smart PSA Testing” (SPT) at the Englewood Mile Square Health Center (EMSHC). SPT obtains a baseline PSA from high-risk men (AA or 1st degree family history) between ages 40-50, informing future screening frequency. We sought to advance our understanding of community perceptions of PCa screening and the optimal design and integration of PSA screening and shared decision-making in a community clinic.

Methods: SPT workshops were held with EMSHC providers prior to the 30 day patient intervention. Surveys and brochures were distributed to waiting room patients prior to their visit. PSA orders were collected from EMSHC vs. a control clinic 3 months before, during and after SPT intervention. A 95% confidence interval (binomial) was calculated across the sites and periods.

Results: There was a significant relationship between the increase in “Smart PSA” orders and the intervention at EMSHC vs. control across three periods: pre-intervention [5.88 (2.6, 11.3)], intervention [23.08 (14.9, 33.1)], and post-intervention [16.84 (9.9, 25.9)].
Conclusion: Improving PCa education among providers and patients has a positive impact on screening high-risk men. Our analysis demonstrates there is a relationship between improved screening and “Smart PSA Testing” intervention.

Poster #22
PATIENT SATISFACTION WITH TELECYSTOSCOPY: USE OF REMOTE VIDEO TECHNOLOGY FOR BEDSIDE FLEXIBLE CYSTOSCOPY
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Presented By: Alexander D. Tapper, MD

Introduction: The increasingly compartmentalized nature of medicine prompts increased demand for specialists. Telemedicine is defined as the use of telecommunication and information technology to provide clinical care from a distance. Demand for specialists necessitates advances in telemedicine specific to each subspecialty. Cystoscopy is commonly performed in Urologic practice with multiple indications. We endeavor to develop a system for remote cystoscopy without sacrificing quality of care provided to patients. Our study examined patient satisfaction when comparing Telecystoscopy to standard flexible cystoscopy.

Methods: With IRB approval, 18 procedures were performed in the Beaumont Hospital resident clinic. Nine procedures were performed using standard bedside flexible cystoscopy, acting as the control arm. Nine procedures were performed with the novel Telecystoscopy system wherein residents performed the procedure at bedside with attending supervision monitoring in real-time from a nearby location. Following each procedure patients filled out a validated satisfaction questionnaire.

Results: Overall, 9 patients underwent cystoscopy utilizing Quintree telecommunications software and 9 patients underwent standard cystoscopy. No significant difference was found in mean satisfaction scores of patients undergoing cystoscopy utilizing the Telecystoscopy software versus standard cystoscopy (28 vs. 27.87, p= 0.96).

Conclusion: Our study has identified a technique for remote supervision of cystoscopic procedures with equivalence to standard cystoscopy in regards to patient satisfaction. Patient's responded positively in all areas of the survey including quality of service, needs being met, and willingness to refer a friend. Further investigation is needed examining diagnostic discrepancies of the novel system compared to standard procedures.

Poster #23
CHARACTERIZING AND PREDICTING UNPLANNED HEALTHCARE UTILIZATION AFTER UROLOGIC SURGICAL PROCEDURES IN THE ADULT POPULATION
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University of Iowa
Presented By: Matthew Sloan, BS, MD

Introduction: Most unplanned post-operative healthcare interactions (UPHIs) do not lead to readmission; though still require significant healthcare resources. The purpose of this study was to characterize risk factors for UPHIs.

Methods: We retrospectively reviewed 3 months of consecutive adult patients who underwent urologic surgery at a single institution. All UPHIs (e.g. phone calls, emails, EPIC messages) were recorded. Demographic/perioperative data for each patient/surgery was recorded, and risk factors for UPHIs were determined using univariate analyses.

Results: We analyzed 527 surgeries performed on 484 patients, of which 40.7% had an UPHI, averaging 2.6±1.9 interactions per patient, most commonly phone calls (68%), and visits to outside medical facilities (9%). Initial interactions led to in-person clinic visits and readmissions 12% and 6% of the time, respectively. Mean time to initial interaction was 9±8.6 days after discharge, the most common reason being for “medical” concerns (68%).
UPHI predictors included marital status, smoking status, distance from the hospital, procedure type, operative time, pain at discharge, days in the hospital, discharge day of week, and discharge with a drain and/or active wound management.

**Conclusion:** A higher than expected percentage of patients had unplanned interactions with the healthcare team after their surgical procedure. Efforts to determine how these interactions can be minimized are actively being explored.

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**Poster #24**

**THE URINARY MICROBIOME: DEFINING THE DIFFERENCE BETWEEN VOIDED AND CATHETERIZED URINE IN NON-INFECTED MALES**

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Presented By: Petar Bajic, MD

Voided (VU) and catheterized urine (CU) from the same patient are often discordant. Expanded quantitative urine culture (EQUC) detects bacteria in urine deemed sterile by SUC. Using EQUC, we describe the difference between VU and CU in non-infected males. VU and CU were collected from 50 men. Patients with history of urinary retention, instrumentation, UTI or antibiotics were excluded. The rate of EQUC growth was compared to demographic factors and VU/CU concordance. VU and CU were EQUC positive in 94% (47/50) and 28% (14/50) of patients, respectively. VU and CU were concordant in 26% (13/50) of patients overall. Concordance was predicted by the presence on CU of Streptococcus (p = 0.003), Staphylococcus (p = 0.015) and Gardnerella (p = 0.064). In patients with BMI > 35, 50% (4/8) grew Aerococcus urinae on VU compared to 7.1% (3/42) of those with BMI < 35 (p = 0.009). Based on EQUC, VU shows a higher rate of growth than CU. While most patients were VU/CU discordant, those with detectable bladder microbiota (CU) were nearly always concordant. Thus, in patients with negative CU, the VU likely represents the urethral and and periurethral microbiome. BMI predicted growth on VU of Aerococcus urinae, previously associated with urinary symptoms in a prior study.
Poster #25
DOES RADIATION EXPOSURE PORTEND WORSE POSTOPERATIVE OUTCOMES AFTER CYSTECTOMY WITH URINARY DIVERSION FOR BENIGN INDICATIONS?
Paurush Babbar, MD, Andrew Sun, MD, Ann Kim, BS, Daniel Hettel, BS, Shree Agrawal, BS, Alice Crane, MD, Daniel Sun, MD, Ryan Berglund, MD, Hadley Wood, MD and Kenneth Angermeier, MD
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Presented By: Paurush Babbar, MD

Introduction: Preoperative radiation exposure is traditionally thought to correlate with increased postoperative complications after cystectomy with urinary diversion (CxUD) for benign indications. We assessed postoperative outcomes after CxUD, stratified by radiation exposure.

Methods: A retrospective review of patients undergoing CxUD over a 10 year period encompassed demographics, operative parameters, 30 and 90 day readmission and complications. CxUD for malignant indications and in pediatric patients were excluded. Chi-square and t-test analyses assessed demographics and indications. Complications were measured by logistic regression.

Results: Among 103 patients, 39 (38%) had radiation exposure prior to CxUD. Mean age for patients with radiation exposure undergoing CxUD was significantly higher (69.8 vs 59.7 years, p=0.001). Operative time (p=0.861), EBL (p=0.756) and LOS (p=0.776) were not associated with radiation exposure. There was a significant correlation between radiation and a preoperative diagnosis of genitourinary fistulae (p=0.001), neurogenic bladder (p<0.0001) and urethral stricture (p=0.002). Radiation exposure did not correlate to readmission at 30 days (p=0.256) or at 90 days (p=0.576). Ureteroileal strictures were observed in 6 patients and stomal stenosis was seen in 2 patients. Neither variable was correlated with radiation exposure (p=0.27 and p=0.265).

Conclusion: In spite of patients being older with more comorbidities, patients with preoperative radiation exposure undergoing CxUD for benign indications did not have increased readmissions or increased complications postoperatively. Operative parameters such as surgery time, EBL and LOS were similar between both groups. These findings suggest radiation exposure prior to CxUD may not portend as negative consequences as once thought.

Poster #26
PREDICTING MORBID OUTCOMES IN PATIENTS PRESENTING WITH XANTHOGRANULOMATOUS PYELONEPHRITIS: A SINGLE INSTITUTIONAL EXPERIENCE
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Presented By: Ronald S. Boris, MD

Introduction: The treatment of xanthogranulomatous pyelonephritis (XGP) is almost universally extirpative and can be challenging to manage. Predictors of poor outcomes in patients with XGP have not been well defined. We attempt to identify factors impacting overall results.

Methods: Between 2007-2017 we retrospectively identified 43 patients undergoing nephrectomy at IU for pathologically confirmed XGP. Patient outcomes were classified based on morbidity, with a morbid outcome defined as >7d ICU stay, post-operative hospital stay > 21 days, or death.

Results: are summarized in Table 1. Twenty-five patients underwent open and 18 minimally invasive nephrectomy (MIS). Conversion from MIS to open was 2/20 (11%). Overall, 9 patients (21%) experienced a morbid outcome and there were three total deaths (7%). Pre-existing renal failure, diabetes, increased operative time, blood transfusions, or the presence of a surgical complication were associated with a morbid result. Pre-surgical drain placement and delay from initial intervention to nephrectomy did not significantly improve outcome. MIS nephrectomy yielded fewer morbid results.
Conclusion: Preoperative comorbidity and sepsis at presentation have a higher likelihood of morbid outcome in XGP. Careful selection of surgical approach and minimizing untoward intraoperative events is paramount in maximizing a successful treatment course.

Poster #27
MESENCHYMAL STEM CELL SECRETOME IMPROVES RECOVERY OF KIDNEY FUNCTION AFTER ISCHEMIC INJURY IN RATS INDEPENDENT OF ROUTE OF ADMINISTRATION
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Cleveland Clinic Foundation
Presented By: Daniel Z. Sun, MD

Introduction: Renal artery clamping during partial nephrectomy causes ischemia-reperfusion injury (IRI). No therapies to prevent renal IRI exist, and while the trophic and inflammatory-effects of mesenchymal stem cells (MSC) show promise, cellular therapy raises concern for malignant transformation. Previous studies demonstrated that the acellular MSC-conditioned culture media (CCM) prevents renal dysfunction after IRI in a rodent model when injected intravenously. This study investigated the optimal route of administration of CCM.

Methods: Donor rat bone marrow MSC cultures were used to produce CCM, as previously published. Thirty-six male Sprague-Dawley rats underwent right nephrectomy. After a 2-week recovery, the left renal hilum was clamped for 45 minutes to produce IRI. Five minutes prior to clamping, rats received 300 μL of normal saline (n=9), intravenous CCM (n=9), subcutaneous CCM (n=8), or intra-arterial CCM (n=10). SCr was measured 5, 7, 9, and 14 days post-ischemia.

Results: Fourteen days after ischemia, either intra-arterial CCM or subcutaneous CCM compared to saline resulted in significantly lower SCr (114% v 224%, p=0.03; 117% v 224%, p=0.03; respectively) relative to baseline values. A similar near-significant trend in SCr relative to baseline (148% v 224%, p=0.05) was noted with intravenous CCM.

Conclusion: When given before ischemia, the acellular secretome of mesenchymal stem cells improves recovery of renal function following IRI. This improvement occurs despite differing routes of administration, suggesting the therapy functions by a systemic effect.
**Poster #28**

PERCUTANEOUS MICROWAVE ABLATION FOR CO-MORBID PATIENTS WITH 4-7CM RENAL CELL CARCINOMA TUMORS

Daniel Shapiro, MD, Sara Best, MD, Shane Wells, MD, Timothy Ziemlewicz, MD, Meghan Lubner, MD, David Jarrard, MD, Kyle Richards, MD, Tracy Downs, MD, Stephen Nakada, MD FACS FRCS and E. Jason Abel, MD FACS

University of Wisconsin School of Medicine and Public Health

Presented By: Daniel D. Shapiro, MD

**Introduction:** High powered microwave ablation (MWA) has potential advantages over older thermal ablation technology, which may allow successful treatment of renal masses >4cm. We compared overall and cancer specific outcomes in patients with renal cell carcinoma (RCC) tumors 4-7cm undergoing MWA, partial nephrectomy (PN), or radical nephrectomy (RN).

**Methods:** Comprehensive data was collected for consecutive RCC patients with tumors 4-7cm following treatment with MWA, PN, or RN between 2000-2017. Follow-up included abdominal and chest imaging at 3, 6, 12, and 18 months, and yearly thereafter. Kaplan Meier analysis evaluated survival outcomes, and multivariate Cox hazards analysis evaluated associations between variables and survival outcomes.

**Results:** A total of 327 patients (42 MWA, 74 PN and 211 RN) were identified. The patients treated with MWA were older and had higher Charlson comorbidity indices compared to surgical patients. Median follow-up was 21, 35, and 50 months following MWA, PN, and RN. Five-year local recurrence rate was similar for MWA and PN (p=0.10) but lower for RN compared to MWA (p=0.005). No difference in 5-yr metastasis free survival (p=0.62) or cancer specific survival was found between treatments (p=0.74). Estimated 5-year overall survival was lower for MWA (61.2%) than PN (93.4%; p=0.004) and RN (85.4%; p=0.009). After multiple regression, treatment modality did not predict overall survival or progression to metastatic disease.

**Conclusion:** Treating 4-7cm RCC tumors with MWA results in similar cancer outcomes when compared to surgery; however, this population tends to be more comorbid resulting in worse overall survival than surgical patients.

**Poster #29**

IDENTIFYING BARRIERS TO OBTAINING GENETIC COUNSELING IN EARLY-ONSET RENAL CELL CARCINOMA

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University of Wisconsin

Presented By: Brady L. Miller, MD, MPH

**Introduction:** 2017 AUA Guidelines recommend genetic counseling referral for all patients 46 year of age diagnosed with a renal malignancy. Here, we characterize factors related to receipt of genetic counseling and patient barriers to uptake.

**Methods:** Comprehensive clinical information was collected for consecutive RCC patients 46 year of age treated with partial or radical nephrectomy between 2011-2017. Patients were offered postoperative genetic counseling. For patients referred for but did not receive, a telephone survey was administered.

**Results:** Of 93 patients identified, 49 were referred for genetic counseling of whom 17 (34.7%) received, and 4 (23.5%) were found to have a predisposing hereditary factor on genetic testing. Demographic and cancer-specific factors were not statistically different based on receipt of genetic counseling. A telephone survey was administered to 31 patients who were referred for but did not receive genetic counseling, of which 27 (87.1%) participated. The most common reason for not receiving genetic counseling was that it was not convenient (14, 51.9%, Table). Patients were most likely to receive genetic counseling if coordinated with their postoperative appointments (24, 88.9%) and if the services were minimal cost (24, 88.9%).

**Conclusion:** Receipt of genetic counseling was low. Inconvenience of appointment was the most commonly identified barrier for not obtaining genetic evaluation.
Introduction: We investigated utilization/outcomes for ablation of T1b renal tumors in a national dataset and at our institution.


Results: SEER analysis included n=84,485 (figure 1A). Ablation 4.9% (n=4110), extirpation 86.6% (n=73,155), observation 8.5% (n=7220). Ablation was increasingly utilized over time (figure 1B). Longer survival for ablation vs observation for T1a (99.6 vs 66.3mo; p<0.001), T1b (65.2 vs 40.2mo; p<0.001; figure 1C). Predictors of survival (Cox regression): younger age (HR 1.04/yr), clear cell (HR 0.85), smaller size (HR 1.03/mm), ablation (HR 0.24, vs observation). Predictors of survival (multivariable Cox regression): younger age (HR 1.03/yr), smaller size (HR 1.02/mm), ablation (HR 0.40 vs observation). Institutional data: n=44 ablations, T1b n=4 (9.1%; 4.2-5.0cm). Bleeding complications in 50% (n=2) T1b vs 5% (n=2) T1a (p<0.05). Local recurrence in 6.8% (3/44). Median recurrence free survival 49.8mo. No T1b patients recurred or died of RCC (mean follow-up 17.6mo).

Conclusion: Ablation is increasingly used for T1b tumors and may provide improved oncologic control relative to observation. There was no further risk of local recurrence with ablation of larger lesions, yet there were more complications.
Poster #31
CLINICOPATHOLOGIC ANALYSIS OF RENAL CELL CARCINOMA CONTAINING INTRATUMORAL FAT AND OSSEOUS METAPLASIA
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The Ohio State University Medical Center
Presented By: Zhaoying Xian, MD

Introduction: Renal cell carcinoma (RCC) can have intratumoral adipose with or without osseous metaplasia, a diagnostic and staging pitfall in that it can mimic angiomyolipoma (AML) and fat invasion. Radiographic detection of fat within a renal mass is classically associated with AML, but the frequency of intratumoral adipose within RCC or its impact on preoperative imaging diagnosis are not well studied. Our aim was to investigate the prevalence, histopathologic characteristics, and radiologic implications of intratumoral adipose and osseous metaplasia in RCC specimens.

Methods: 704 RCC specimens were prospectively evaluated (423 partial nephrectomies, 281 total nephrectomies; 327 pT1a, 377 ≥pT1b; 510 clear cell, 119 papillary, 30 chromophobe, 22 clear cell papillary, 23 other).

Results: 3% (n=21) contained intratumoral adipose and/or osseous metaplasia, with a similar frequency in the main histologic subtypes of RCC (p = 0.76). Mean metaplastic deposit size was 0.4 cm (range 0.1-1.3 cm), mean distance to capsule was 0.2 cm (range 0-0.8 cm), and 29% of deposits involved the tumor capsule. Histologically identified osseous metaplasia was radiologically detected more frequently than intratumoral adipose (44% versus 12%). Only 1 case with histologically identified metaplasia had a radiologic diagnostic differential of AML (1/704, 0.1%).

Conclusion: While intratumoral adipose and/or osseous metaplasia can be observed within RCC, it is extremely rare for pathologically identified metaplasia to have confounded the radiologic diagnosis by mimicking AML. Awareness that the metaplastic deposits are usually near the tumor capsule and may be minute could help prevent errors in diagnosis or staging.

Poster #32
EVOLVING TRENDS FOR SELECTED TREATMENTS OF T1A RENAL CELL CARCINOMA
Johnathan Doolittle, MD, Keegan Zuk, MD, Josh Piotrowski, MD, Peter Langenstroer, MD, Kenneth Jacobsohn, MD, William See, MD and Scott Johnson, MD
MCW
Presented By: Johnathan Doolittle, MD

Introduction: As the incidence of small renal masses has increased, a steady increase in the utilization of partial nephrectomy, ablation, and active surveillance has been reported. Contemporary data demonstrating the relationship between adoption of these strategies and patient factors is lacking.

Methods: Using the NCDB PUF from 2002-2015, we identified patients with T1a renal masses. The initial treatment was categorized as radical nephrectomy (RN), partial nephrectomy (PN), ablation, or surveillance. A multinomial logistic regression model was used to identify significant factors impacting treatment.

Results: We identified 79,271 patients for analysis. RN, PN, and ablation accounted for 22%, 52% and 12%, respectively, while 8% were managed with surveillance. In the past decade the likelihood of undergoing PN, ablation, or surveillance compared to RN has consistently increased, independent of age, sex, race, comorbidity, tumor size, or institution (Figure 1, all p<0.01). Increased age was associated with decreased risk of undergoing PN (RR 0.98 per year, p<0.01) and increased risk of undergoing ablation (RR 1.05 per year, p<0.01) or surveillance (RR 1.09 per year, p<0.01).

Conclusion: A large proportion of patients still undergo RN for small renal masses. PN, ablation and surveillance have consistently increased in utilization independent of patient, tumor, and institutional factors.
COMPARATIVE ANALYSIS OF PERIOPERATIVE OUTCOMES FOR PATIENTS WITH 4-7CM RCC TREATED WITH EITHER MICROWAVE ABLATION, PARTIAL NEPHRECTOMY OR RADICAL NEPHRECTOMY

Daniel Shapiro, MD, Shane Wells, MD, Meghan Lubner, MD, David Jarrard, MD, Kyle Richards, MD, Tracy Downs, MD, Glenn Allen, Sara Best, MD, Stephen Nakada, MD, FACS, FRCS and E. Jason Abel, MD, FACS
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Presented By: Daniel D. Shapiro, MD

Introduction: The perioperative morbidity associated with MWA in larger tumors has not been described in detail. We evaluated perioperative outcomes (complications, hospital stay, transfusion rate, readmission rate) for patients with 4-7cm RCC tumors treated with either MWA or surgery.

Methods: We identified consecutive RCC patients with tumors 4-7cm following treatment with MWA, partial nephrectomy (PN) or radical nephrectomy (RN). 90-day complications were classified using the Clavien-Dindo system. Univariate and multivariate Cox analysis was performed to determine factors associated with perioperative outcomes.

Results: An institutional database identified 42 MWA, 74 PN and 211 RN treated from 2000-2017. Complications were identified in 9 (21%) MWA, 18 (24%) PN and 28 (13%) RN patients. Patients treated with MWA had higher Charlson co-morbidity scores (p<0.0001) and were older (p<0.0001) compared to surgical patients. After multivariate analysis, independent predictors of complications included treatment with PN (HR 2.42 95%CI 1.23-4.76) and prior surgery HR 2.27 (95%CI 1.21-4.26). Transfusion rate was not different among treatments (4.7% MWA, 8.1% PN, 4.7% RN; p=0.53). Perioperative mortality within 30 days was identified following in 0 MWA, 0 PN and 1/211 (0.5%) RN patients. Median hospital stay was shorter for MWA 1 day (IQR 1-1) vs. PN 4 days (IQR 3-6) or RN 4 days (IQR 3-4), p<0.001. No difference was identified in 30-day re-admission rate among treatments (7.1% MWA, 1.4% PN, 2.8% RN, p=0.21).

Conclusion: Patients treated with microwave ablation for 4-7cm RCC tumors had shorter hospitalization with no differences in 30-day re-admission, overall complication rate, or perioperative mortality.

NOVEL USE OF FOLATE-TARGETED INTRAOPERATIVE FLUORESCENCE, OTL38, IN ROBOT-ASSISTED LAPAROSCOPIC PARTIAL NEPHRECTOMY: CLINICAL EXPERIENCE WITH FIRST 9 CASES

Jay Sulek, MD, Ethan Ferguson, MD, Max Jacobsen, PhD, Courtney Finnearty, BS, George Sandusky, MD and Chandru Sundaram, MD
Indiana University
Presented By: Ethan L. Ferguson, MD

Introduction: Folate targeting uses anti-folate antibodies to enable imaging or therapeutic targeting of tissues with high density of folate receptors. Normal kidney tissue has a high density of folate receptors whereas kidney tumors have a relative scarcity. We present our experience with our first 9 patients in our phase 2 nonrandomized study on the novel use of
folate-targeted intraoperative fluorescence, OTL38, in robotic partial nephrectomy for renal masses.

**Methods:** This IRB-approved study will involve 10 patients with localized RCC scheduled to undergo robot-assisted partial nephrectomy. A single dose of OTL38 was administered within 2 hours of skin incision. OTL38 targets folate receptor alpha and upon excitation, emits light in the near-infrared spectrum. Da Vinci Fluorescence Imaging Vision System used to aid in identifying tumor, margin, and any residual disease.

**Results:** Nine cases using this protocol performed. Average patient age 62.7, ECOG 1, BMI 30. Pathology showed pT1a tumors for 7 cases and pT3a for one. One tumor was benign oncocytoma, 6 were clear cell RCC, one chromophobe and one papillary. All margins were negative. Time between drug administration and surgery start was 57-152min and did not affect fluorescence. No adverse reactions seen. Tumor showed no fluorescence in all cases and normal kidney ranged from “some fluorescence” to “very bright”. Subjectively, fluorescence aided in locating tumor, resecting tumor, and identifying margin in all but one case.

**Conclusion:** OTL38 provides a safe, easy to use, and effective tool to improve visualization of renal tumors and ensure negative margin after resection.

**Poster #35**

**WITHDRAWN**

**Poster #36**

**DIABETES MELLITUS AND DECREASED ESTIMATED GLOMERULAR FILTRATION RATE ARE ASSOCIATED WITH LOW URINARY PH IN PATIENTS WITH NEPHROLITHIASIS**

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¹Loyola University Medical Center; ²Loyola University; ³Southern Illinois University  
Presented By: Ryan A. Dornbier, MD

**Introduction:** Diabetes is associated with an increased risk for nephrolithiasis. The difference in urinary parameters between diabetic and non-diabetic stone formers has not been well established in a large cohort.

**Methods:** A retrospective review of medical records of 1543 patients who underwent surgical removal of renal calculi between 1999-2013 was performed. Treatment for diabetes at time of surgical intervention was utilized to identify diabetic patients. Univariate and multivariate logistic regression was performed to identify differences in 24-hour urine analysis in diabetic stone formers as compared to non-diabetic stone formers. Patients were also analyzed for preoperative renal function using eGFR.

**Results:** 462 patients undergoing surgical removal of stones had completed a 24-hour urine analysis and were included for analysis. 107 (23.2%) patients were diabetic. The mean urinary pH was 5.90 (IQR 5.38-6.30, p <0.01) for diabetic patients and 6.19 (IQR 5.80-6.50, p<0.01) for non-diabetic patients. Preoperative eGFR data was available for 849 patients. 205 (24.1%) were diabetic. The mean eGFR was 68.0 ml/min/1.73m² (IQR 48.0-86.0 ml/min/1.73m², p<0.01) for diabetic patients compared to 81.1 ml/min/1.73m² (IQR 40.0-94.0 ml/min/1.73m², p<0.01) for non-diabetic patients. On multivariate analysis, diabetes was independently associated with lower urinary pH (OR 0.86 (95% CI 0.78-0.96), p <0.01). Additionally, eGFR<60 ml/min/1.73m² was independently associated with a lower urinary pH (OR 0.85, (95% CI 0.77-0.95), p<0.01).

**Conclusion:** Diabetic stone formers were found to have lower urinary pH when compared to non-diabetic stone formers. This lower urinary pH may be related to decreased renal function in diabetic stone forming patients.
Poster #37
URETEROSCOPY FOR THE MANAGEMENT OF RENAL TRANSPLANT UROLITHIASIS
Rebecca Gerber, MD, Viacheslav Iremashvili, MD, Sara Best, MD, Sean Hedican, MD and Stephen Nakada, MD, FACS, FRCS
University of Wisconsin Department of Urology
Presented By: Rebecca Gerber, MD

Introduction: Although it is relatively rare in renal transplant patients, urolithiasis may pose significant risk to renal graft function. However, the management of transplant lithiasis has not been well defined. In the past, extracorporeal shockwave lithotripsy has been favored over ureteroscopy given the perceived technical difficulties of the latter. We report our experience with ureteroscopy for treatment of urolithiasis in the transplant kidney.

Methods: We reviewed a single center series of 2,652 patients who underwent surgical treatment for nephrolithiasis at our institution from 2009 to the present day to identify all patients requiring ureteroscopy for treatment of transplant lithiasis.

Results: We identified 18 patients who underwent ureteroscopy for treatment of urolithiasis within the transplanted kidney or ureter. The majority of the procedures were performed using a retrograde approach with flexible ureteroscopy, with one patient undergoing antegrade ureteroscopy and two patients requiring semi-rigid ureteroscopy. Holmium:yttrium-aluminum-garnet laser lithotripsy was utilized in all but one case, which was performed using basket extraction. There were no intraoperative complications reported. One postoperative complication was reported, involving a urine leak from a nephrostomy tube tract placed prior to ureteroscopy. Four patients had small stone fragments on postoperative imaging, three of which were observed. One patient required repeat ureteroscopy for persistent distal ureteral stone.

Conclusion: Retrograde ureteroscopy is a feasible, safe and effective intervention for the treatment of transplant lithiasis. Minimal intraoperative or postoperative complications were reported and only one patient required additional intervention for residual stone burden.

Poster #38
PUBLIC PERCEPTIONS OF THE INFLUENCE OF DIET ON KIDNEY STONE FORMATION
Benjamin Marsh, MD, Niranjan Sathianathen, MBBS, Resha Tejpaul, Jacob Albersheim-Carter, Elizabeth Bearrick and Michael Borofsky, MD
University of Minnesota
Presented By: Benjamin M. Marsh, MD

Introduction: Public awareness regarding the influence of diet on kidney stones is unknown. We sought to evaluate such perceptions among an unselected community cohort.

Methods: A survey was created to assess perception of fluids/foods on risk of kidney stone formation. Surveys were distributed to attendees of a State Fair. Participants were categorized to determine the effect of stone history on prevention knowledge (no prior stone vs prior stone).

Results: 757 participants completed the survey including 264 (35%) with a prior stone. Participants with prior stones were less likely to believe stones were preventable compared to those without (56% vs 65%, p = 0.01). Appropriate perceptions regarding influence of diet on stones were highest for water (>90% of participants) and cola/salt/red meat (>50%). Fewer than half of respondents correctly identified the influence of the remaining 16 substances. On multivariable analysis, stone formers were more likely to correctly identify the influence of lemonade (OR 2.09 95% CI: 1.32-3.31), nuts (OR 2.60 95% CI: 1.60-4.23), and spinach (OR 5.06 95% CI: 2.89-8.86), but less likely to identify the influence of coffee (OR 0.43 95% CI: 0.23-0.82) and red meat (OR 0.52 95% CI: 0.23-0.59).

Conclusion: Patients with prior stones hold different attitudes regarding the influence of certain foods and drinks on stone formation relative to the public. Such attitudes are not always correct, and as a group they are less likely to believe in stone prevention. Such findings may indicate confusion among stone formers and highlights an opportunity for improved dietary counseling.
Poster #39
PREOPERATIVE AND POSTOPERATIVE FACTORS ARE PREDICTORS OF POSTOPERATIVE PROSTATE VOLUME AFTER HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HOLEP)
Deepak Agarwal, MD, Vidit Sharma, MD and Marcelino Rivera, MD
Mayo Clinic
Presented By: Deepak K. Agarwal, MD

Introduction: There exists minimal investigation of postoperative prostate volume after HoLEP and influencing factors. We sought to determine postoperative prostate volume after HoLEP and affecting factors.

Methods: A retrospective review was performed on patients who underwent HoLEP and had pre and post-HoLEP transrectal ultrasound (TRUS) measurements of prostate volume. Patients underwent TRUS at time of prostate biopsy for prostate cancer screening/surveillance. Descriptive analysis is presented as median and IQR. A forward stepwise linear regression model to determine significant variables and effect.

Results: 50 patients were included in the cohort. Age at time of HoLEP was 67.6 years (63-73.4). Pre-HoLEP TRUS prostate volume was 84.9 ml (49.3 -133.75) and PSA was 5.4 ng/ml (3 -10). Tissue enucleated was 51 g (21 -98.6) with 55.7% tissue enucleated (38.8 -79.6). Time to post-HoLEP measurement was 2.0 years (1 -3.2). Post-HoLEP TRUS prostate volume was 27.9 ml (21.9-40.9) and PSA 2.6 ng/ml (1.3 -4.5). The results of the forward stepwise multivariate linear regression can be seen in Table 1. The model has an R2=0.50.

Conclusion: After HoLEP, median prostate volume is 27.9 ml. All patients saw significant reduction in volume. A larger post-HoLEP TRUS volume is associated with increasing preoperative TRUS volume, time from HoLEP, and post-HoLEP PSA on multivariate analysis. Decreasing pre-HoLEP PSA was negatively associated with volume.

Poster #40
INITIAL EXPERIENCE WITH MOSES TECHNOLOGY FOR UPPER URINARY TRACT CALCULI
Tim Large, MD, Heiman Joshua, BS, Anderson Blake, MD and Krambeck Amy, MD
IU School of Medicine
Presented By: Tim Large, MD, MA

Introduction: Stone retropulsion can make laser lithotripsy (LL) challenging for ureteral calculi. The Lumenis Moses technology optimizes laser pulse characteristics resulting in improved stone fragmentation while limiting fragment retropulsion. The objective of this study was to assess our experience with the Moses technology.

Methods: 32 patients underwent LL using the Lumenis Moses technology. In total, 16 patients underwent both percutaneous nephrolithotomy (PCNL) and ureteroscopy (URS), and 16 of the patients underwent URS alone. All operations were performed by a single surgeon who also rated degree of retropulsion on a scale of 0-3 (0=none, 1=mild, 2=moderate, 3=severe). Groups were made based on stone composition defined by ≥50% on stone analysis: calcium oxalate (CaOx), calcium phosphate (CaP), struvite (Str) and uric acid (UA).

Results: There were 12 male and 20 female patients with an average age of 48 years (21-81). Stone volume (mm3) was similar between groups (18.3 CaOx vs. 20.7 CaP vs. 21.0 Str vs. 18.7 UA, p=0.99). Comparing all stone types, there were no differences in total energy applied or stone free rate at the conclusion of the procedure (all p>0.05). Overall, 28 patients (87.5%) were deemed stone free. Stone retropulsion was noted in one patient from...
the entire cohort (3%). There were no complications associated with the Moses technology in this series.

Conclusion: We experienced minimal stone retropulsion (3%) with the Lumenis Moses technology. Reduction in stone retropulsion with comparison to regular holmium pulse may lead to overall higher efficiency of LL but further large scale studies are needed.

Poster #41

DOES VOLUMETRIC STONE MEASUREMENT AUGMENT OUR UNDERSTANDING?
Parth Patel, MD1, Abrar Mian2, Alex Kandabarow, MD1, Spencer Hart, MD1, Carrie Johans, MD1, Ryan Dornbier, MD1, Robert Blackwell, MD1, Kristin Baldea, MD1 and Thomas Turk, MD1
1Loyola University Medical Center; 2Loyola University Chicago
Presented By: Parth Patel, MD

Stone size is an important factor in the management of nephrolithiasis. The typical quantification of stone size is based on a linear measurements on computed tomography (CT) imaging, but volumetric analysis has become more readily available. Our study aims to further investigate the utility of volume measurement in the treatment of renal calculi. Preoperative and postoperative helical CT images were used to measure stone size, location, and density; and three-dimensional reconstructed models used to calculate volume measurements. The analysis included a total of 175 patients undergoing first-look PCNL for solitary stones, regardless of size, shape, and location within the kidney; patients with ureteral stones were excluded. Stone volume was most correlated with linear measurements in the sagittal dimension (r = 0.85, p < 0.05), but axial (r = 0.82) and coronal (r = 0.81) measurements were not far behind. Preoperative stone volume was positively correlated to postoperative stone volume (r = 0.36, p < 0.05). There was no significant difference in postoperative stone volume reduction based on stone size, location, or density. In patients undergoing PCNL, volumetric stone measurement using three-dimensional reconstruction correlates positively with linear measurements and, therefore, does not significantly change or augment our understanding of a patient’s stone burden.

Poster #42

CONCURRENT HOLMIUM LASER ENUCLEATION OF THE PROSTATE AND MINIMALLY INVASIVE UPPER URINARY TRACT STONE PROCEDURES
Joshua Heiman, BS, Blake Anderson, MD, Tim Large, MD, Amy Krambeck, MD and James Lingeman, MD
IU School of Medicine
Presented By: Joshua Heiman, BS

Introduction: Holmium laser enucleation of the prostate (HoLEP) in combination with other endoscopic procedures is advantageous to avoid multiple anesthetics. The objective of this study is to validate the safety of combined HoLEP with ureteroscopy (URS) or percutaneous nephrolithotomy (PCNL) at our institution.

Methods: 31 patients were identified who underwent concurrent HoLEP and URS or PCNL from 2005-2017. All patients initially underwent HoLEP, immediately followed by URS (N=23) or PCNL (N=8). Outcomes were compared to those previously reported in over 1000 HoLEPs.
Results: There were no differences in mean age for HoLEP (H), H-URS and H-PCNL (73 vs. 69 vs 75, p>0.05). Between H-URS and H-PCNL, there was no difference in pre- or postoperative Cr and Hgb (p>0.05). The catheterization times for H, H-URS, and H-PCNL were 19, 15, and 19 hours, respectively (p>0.05). Length of stay was significantly shorter for H-URS and H vs. H-PCNL (31 and 31 vs. 57 hours, p<0.05). 30 day complication rate was 8.7% for H-URS and 0% for H-PCNL, but did not reach significance (p=0.5). In HoLEP alone, the reported complication rate is about 2.5%. One H-URS patient, two days after restarting clopidogrel, required readmission for clot evacuation on postoperative day (POD) 14. A second H-URS patient had urinary retention on POD 3, was catheterized and passed a voiding trial three days later.

Conclusion: Concomitant HoLEP and either URS or PCNL is safe and effective with outcomes similar to those previously reported for each procedure performed alone.

Poster #43
SINGLE HOSPITAL REVIEW OF FLEXIBLE FIBEROPTIC URETEROSCOPE BREAKAGE
Deepak Agarwal, MD, Vidit Sharma, MD and Marcelino Rivera, MD
Mayo Clinic
Presented By: Deepak K. Agarwal, MD

Introduction: Ureteroscope breakage rates may be underestimated. We present our retrospective review of 12 months of flexible fiberoptic ureteroscope breakage.

Methods: We performed a retrospective review of ureteroscopies performed at one hospital from July 2016 through June 2017. Number of cases, repairs, repair types and cost data were collected and analyzed.

Results: Among 363 ureteroscopies in 1 year (mean procedural time 83.4min), 98 (27%) ureteroscope breakages occurred, translating to 1 breakage per 3.7 cases and per 309 min procedure time. Using a test of one proportion, we found that our breakage rate of 27% was significantly higher than the average breakage rate in the current literature (average=12%), p<0.001. Breakages included failures of: leak testing (N=36), articulation (N=24), and fiberoptics (N=16). Average cost per repair was $2,075 (total=$203,398), translating to an amortized cost of $560.32/case and $6.72/minute of ureteroscopy. There was no association with repairs or repair costs compared total cases per month (Figure).

Conclusion: Ureteroscope repair during the course of a high volume, tertiary referral is inevitable and on average occurs less than every 4 cases. This may be more prevalent than in general practice settings. Leak test failures are the most common cause for repair. Further investigations into precise etiologies where scope damage occurred are needed.
Poster #44
THE ROLE OF SPOP IN THE REGULATION OF ESTROGENIC ACTIVITY IN PROSTATE STEM CELLS
David Greenwald, Dan-Ping Hu, MD, Wen-Yang Hu, PhD and Gail Prins, PhD
University of Illinois, Chicago
Presented By: David T. Greenwald, MD

Introduction: Speckle-type POZ Protein (SPOP) is the most frequently mutated gene in primary prostate cancer. SPOP is a cullin-based E3 ubiquitin ligase that targets several proteins, including estrogen receptor-α (ER-α), for proteasome-mediated degradation. The SPOP mutation in endometrial cancer impairs ER-α degradation and increases pro-oncogenic estrogen activity. Previously our laboratory identified ER-α in prostate stem cells where estrogen stimulates their self-renewal. Importantly, estrogen also promotes prostate carcinogenesis. The objective of this study was to determine if SPOP regulates ER-α in prostate stem cells.

Methods: Primary cultures of normal human prostate epithelial cells (PrEC) were grown in a prostasphere-based, bromodeoxyuridine (BrdU) label-retention assay that permits identification of stem cells. PrEC were subjected to SPOP knockdown with siRNA transfection, confirmed by RT qPCR. Fluorescence immunocytochemistry (ICC) was used to visualize and quantify ER-α protein levels in BrdU labeled stem cells.

Results: SPOP knockdown was achieved with 14-39% efficiency in PrEC and prostaspheres. ICC revealed a markedly elevated level of ER-α in BrdU label-retaining stem cells when compared to scramble siRNA controls.

Conclusion: The results indicate that SPOP actively regulates ER-α levels in prostate stem cells, which in turn controls their self-renewal. We propose that functional SPOP mutations lead to higher stem cell ER-α expression, which may be pro-oncogenic in primary prostate cancer.

Poster #46
CANCER DETECTION AND INFECTIOUS COMPLICATION RATES FOR AN OFFICE-BASED ULTRASOUND-GUIDED TRANSPERINEAL PROSTATE BIOPSY
Adam Cole, MD, Arvin George, MD and John Wei, MD
University of Michigan
Presented By: Adam I. Cole, MD

Prostate biopsy remains the mainstay for diagnosis of prostate cancer. Historically, the transrectal approach was undertaken with the intent of biopsying a prostate nodule. With PSA testing, more men are biopsied with a negative DRE. Given this, and the significant risk of sepsis associated with a transrectal prostate biopsy, we have adopted a transperineal templated biopsy under local anesthesia. We sought to determine the cancer detection and infectious complication rates for patients who underwent office-based ultrasound-guided transperineal biopsy (TPBx). This retrospective cohort consists of 36 patients who underwent TPBx and 851 patients who underwent trans-rectal biopsy (TRBx). Transperineal biopsy was performed with the PrecisionPoint Transperineal Access System using a modified, 12-core Barzell technique. Sepsis rate (SR), fever rate (FR), cancer detection
rate (CDR), and high-grade cancer rate (HGCR) were compared between the two techniques using multivariable logistic regression. The primary indication for biopsy was elevated PSA in both TPBx (97.1%) and TRBx (86.5%) groups. There was no significant difference in CDR (47.2% vs. 55.5%, p=0.33) or SCR (27.8% vs. 36.1%, p=0.31), for transperineal and transrectal approaches, respectively. There was no difference in FR (0% vs 2.1% p=0.67) or SR (0% vs 0.6%, p=0.88) between the two approaches. We observed similar cancer detection rates between the two approaches with no infectious complications in the transperineal group.

Poster #47
IN-OFFICE FREEHAND TRANSPERINEAL TEMPLATE MAPPING BIOPSY PERFORMED UNDER LOCAL ANESTHESIA USING A NOVEL NEEDLE GUIDE: FEASIBLE, SAFE, AND EFFECTIVE FOR CANCER DETECTION
Matthew Lee, MD1, Shaan Setia, MD2, Adam Cole, MD1, Chandy Ellimoottil, MD1, Lindsay Herrel, MD1, John Wei, MD1, Srinivas Vourganti, MD2, Arvin George, MD1 and Matthew Allaway, MD
1University of Michigan; 2Rush University Medical Center
Presented By: Matthew Lee, MD

Sepsis following transrectal ultrasound-guided (TRUS) biopsy is rising with numerous strategies aimed at curbing its incidence. Transperineal prostate biopsy has negligible rates of sepsis, but the adequacy of modified 12-core transperineal template mapping biopsy (TMB) is debated. Herein, we describe our initial experience with completely in-office free-hand transperineal prostate biopsy (TPBx) performed under local anesthesia. A retrospective review was performed of patients who underwent TPBx at 2 institutions. TPBx was performed in lithotomy under TRUS guidance after oral cephalosporin prophylaxis. Local anesthesia was administered via transperineal puncture. The PrecisionPointTM device was used to access the left and right prostatic lobes to complete a modified barzell 12-core TMB. A total of 87 biopsies were performed with data available for 30 biopsies performed on protocol. Patient characteristics and pathologic data are summarized in Table 1. Mean age and PSA of the cohort were 63.4 years and 6.9ng/ml. The overall cancer detection rate (CDR) was 57% and clinically significant CDR (Gleason ≥7) was 33%. There were no complications noted within 30 days of biopsy. Transperineal freehand prostate biopsy is effective for detection of prostate cancer. It is safe and well tolerated under local anesthesia, and can be performed in an office setting. Larger studies are required to validate this early experience.
Poster #48
PROSTATE CANCER UPGRADING IN A COMMUNITY-BASED PRACTICE: HOW ACCURATE IS CORE NEEDLE BIOPSY?
David Greenwald1, Jason Huang, MD1, Ikenna Madueke, MD, PhD1, Laurel Sofer, MD1, Neha Malhotra, MD1, Lester Raff, MD2, Justin J. Cohen, MD2, Daniel P. Dalton, MD2,3 and Paul Yonover, MD1,2
1University of Illinois, Chicago; 2Uropartners; 3Northwestern
Presented By: David T. Greenwald, MD

Introduction: Prostate cancer tumor grading on needle biopsy heavily influences treatment decision-making. Historically, studies from academic centers have shown that up to one-third of cancers are “upgraded” with radical prostatectomy. We sought to determine the rate of upgrading in the community setting.

Methods: We performed a retrospective review of a large community-based single-specialty group’s comprehensive prostate cancer database for a single year (2016). We identified 186 cases within the database where both the biopsy and prostatectomy pathology were available for analysis.

Results: We found a 32% rate of upgrading at prostatectomy. ISUP Grade Group 1 disease at biopsy had a 48% rate of upgrading with prostatectomy. Of the 31 cases of ISUP Grade Group 1 disease, thirteen (41.9%) were upgraded to ISUP Grade Group 2, one (3.2%) was upgraded to ISUP Grade Group 3, and one (3.2%) was upgraded to ISUP Grade Group 5 at time of surgery.

Conclusion: In the community setting, we continue to find significant pathologic upgrading at prostatectomy. Recently the clinical significance of ISUP Grade Group 1 disease has been questioned. In our study, almost half of our patients with ISUP Grade Group 1 at biopsy were upgraded at surgery. This under-grading phenomenon should be remembered when utilizing active surveillance protocols and approaching treatment decisions.

Poster #49
VANISHING PROSTATE CANCER IN PREVIOUSLY BIOPSY PROVEN GLEASON 3+3 MEN ON ACTIVE SURVEILLANCE
Chirag Doshi, MD, Michelle Van Kuiken, MD, Cara Joyce, PhD, Marcus Quek, MD and Gopal Gupta, MD
Loyola University Medical Center
Presented By: Chirag Doshi, MD

Introduction: Certain patients with previously biopsy proven Gleason 3+3 prostate cancer on active surveillance (AS) have a negative surveillance prostate biopsy. This phenomenon of vanishing prostate cancer (VCaP) is troubling to patients and physicians. We aimed to characterize these patients using multiparametric MRI of the prostate (mpMRI).

Methods: A retrospective study was performed on patients with previously biopsy proven Gleason 3+3 prostate cancer on AS who underwent mpMRI followed by simultaneous 12-core transrectal ultrasound guided biopsy (TRUSBx) and Uronav fusion biopsy between 2014-2017 at our institution.

Results: 115 patients were identified and classified by biopsy result (Table). Compared to Gleason 3+3 group, patients with VCaP had >1 prior negative TRUSBx and higher prostate volumes by mpMRI; but had similar PSA density, number of target lesions including their PI-
RADS classification. Both VCaP and Gleason 3+3 groups had lower PSA density, number of target lesions, and PIRADS scores than the Gleason ≥7 group.

**Conclusion:** VCaP was found in men with prostates >45cc, PSA density <0.1 and PIRADS score ≤3. This combination of characteristics may provide reassurance to the patient and provider and help decrease the number of unnecessary biopsies. Also, mpMRI based AS may potentially spare a third of men from carrying a prostate cancer diagnosis. Further prospective study is required.

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**Poster #50**

**SEMINAL VESICAL INVASION CORRELATES WITH PCSM AMONG PATIENTS WITH NCCN-DEFINED ADVERSE PATHOLOGIC FEATURES**

Shree Agrawal², Nitin Yerram, MD³, Michael Rydberg, MD¹, Sudhir Isharwal, MD³, Paurush Babbar, MD³, Andrew Stephenson, MD³ and Eric Klein, MD³

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Presented By: Michael G. Rydberg, MD

**Introduction:** Adjuvant and salvage therapies for patients with prostate cancer undergoing radical prostatectomy (RP) are options to optimize outcomes in the setting of adverse features. We aim characterize prostate cancer-specific mortality (PCSM) by pre- and post-operative nomogram scores and pathologic characteristics.

**Methods:** Patients who received RP between 1992-2015 with at least 6 months follow-up, no prior neoadjuvant chemoradiation therapy, and known pathologic data were included. PCSM outcome was assessed with patient characteristics, adverse disease features, salvage/adjuvant radiation therapy, and pre/post-operative nomogram scores via univariate and multivariate competing risk regression analyses.

**Results:** 3,974 patients met selection criteria with median follow-up of 46 months (IQR 22-88). Median age was 60 years (IQR 56-65). A majority of men identified as white (87%), with 25% having a positive family history of prostate cancer. The majority were Gleason score 6 (58%) and stage T1c (79%) on biopsy; pathologic characteristics were Gleason 7, 3+4 (51%) with 58% having perineural invasion, 22% extracapsular extension, 4% seminal vesical invasion, and 21% positive surgical margins. On univariate analyses, higher pre- and post-operative nomogram survival scores were significant for decreased PCSM, with post-operative scores being most significant (HR: 0.01, p <0.0001). Among NCCN-defined adverse features for PCSM, only seminal vesical invasion (HR: 24.6, p <0.0001) was significant.

**Conclusion:** In this study, post-operative nomogram scores had the strongest correlation to PCSM. Among pathologic characteristics, presence of seminal vesical invasion demonstrated an association with PCSM. Independent of nomogram scores, seminal vesical invasion may be an important determinant in shared decision-making.
Poster #51
EFFECT OF MRI FUSION BIOPSY ON PATHOLOGIC UPGRADE AND DOWNGRADE RATES FOR RADICAL PROSTATECTOMY
Antoin Douglawi, MD1, Adam Calaway, MD2, Clinton Bahler, MD2, Thomas Gardner, MD2, Temel Tirkes, MD2, Clint Cary, MD2, Michael Koch, MD2 and Timothy Masterson, MD2
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Presented By: Antoin Douglawi, MD

Introduction: Magnetic resonance imaging (MRI) fusion technology is increasingly being used to risk stratify prostate cancer patients for active surveillance and treatment. We aim to assess how well this technology predicts pathologic grade upon radical prostatectomy and its effect on upgrade rates compared to Transrectal Ultrasound-Guided (TRUS) biopsy alone.

Methods: Patients who underwent MRI fusion biopsy followed by radical prostatectomy between 08/2013 and 10/2017 were identified. Gleason score, grade group, and upgrade/downgrade rates were analyzed for TRUS, fusion, combined biopsy, and surgical specimens.

Results: 129 patients were analyzed. Median age and PSA were 63.5 years and 8.6 ng/mL. Gleason grade groups based on final pathology were Grade 1 (4.7%), 2 (66.7%), 3 (15.5%), 4 (1.6%), and 5 (11.6%). Upgrade rates were significantly higher for template (44.2%) and targeted biopsy alone (50.4%) compared to combined biopsy (22.5%, p<0.001). MRI-targeted biopsy alone had similar upgrade rates to TRUS template alone (50.4% and 44.2% respectively, p=0.32).

Conclusion: Combining TRUS template and MRI-targeted biopsy significantly improved the accuracy of predicting pathologic grade at radical prostatectomy and decreased upgrade rates compared to template or MRI-targeted biopsy alone. Notably, MRI-targeted biopsy alone had comparable upgrade rates to TRUS template alone which challenges the feasibility of relying solely on this modality without template biopsies.

Poster #52
PSA SCREENING IN MEN WITH FAMILY HISTORY OF PROSTATE AND BREAST CANCER: AN NHIS ANALYSIS
Matthew Kasson, BS1, Connor Hoge, BS1, Dhruti Patel, MD2 and Abhinav Sidana, MD2
1University of Cincinnati College of Medicine; 2UC Health Department of Urology
Presented By: Matthew Kasson, BS

Introduction: Breast cancer genes BRCA1 and BRCA2 have been implicated in hereditary prostate cancer. This preliminary study was conducted to determine PSA screening trends in these populations using the National Health Interview Survey (NHIS) 2015.

Methods: Men aged 40-74, without personal history of PCa, and having a first degree relative with breast or PCa were considered our exposure variable. Age adjusted prevalence of PSA testing and frequencies were compared. All analysis was conducted using Stata 13 (Statcorp, TX).

Results: 25.1 million adult males (45.2%, unadjusted) in age group 40-74 reported ever been tested for PSA. Prevalence of PSA testing was found to be highest in the 50-59 age group (20.2%, p<0.001). More men with FHx of PCa underwent PSA testing as compared to men with FHx of BCa (67% vs 47%, p<0.001, figure 1), and were tested more frequently
over a 5-year span (3.05 vs. 2.47 tests). Men with a FHx of PCa were likelier to have received >3 PSA screens in the past 5 years as compared to men with a FHx of BCa (38.4% vs. 25.9%, p=0.021).

**Conclusion:** Men with FHx of BCa received PSA screening less often than men with FHx of PCa, despite evidence supporting familial breast cancer as a significant risk factor.

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**Poster #53**

**THE ASSOCIATION OF PROSTATE BIOPSY CHARACTERISTICS ON ADVERSE PATHOLOGY AT RADICAL PROSTATECTOMY IN THE MRI ERA**

Adam Cole, MD, Arvin George, MD and Todd Morgan, MD
University of Michigan
Presented By: Adam I. Cole, MD

MRI is increasingly being used and coupled with MR/US fusion biopsy. However, with the use of this approach, standard biopsy parameters such as percent of positive cores (PPC) and percentage of Gleason pattern 4 (G4%) may not have the same meaning compared to a 12 core non-targeted biopsy. We sought to evaluate the prognostic significance of these parameters. The cohort consisted of 121 consecutive patients who underwent MRI-fusion biopsy prior to RP. G4% and PPC were calculated in multiple ways: 1) using the cores from the ROI (ROI), 2) from the systematic 12-core portion (standard), and 3) from the entire specimen (total). These were then correlated with the primary outcome, adverse RP pathology. A total of 46/121 (38.0%) had adverse pathology at RP. For the subset of adverse pathology compared to patients with G4-standard > 20% (25%) and G4-total > 20% (25%) (Figure). Conversely, patients with PPC-standard > 50% had higher rates of adverse pathology (50%) compared to patients with PPC-ROI > 50% (20.2%) and PPC-total > 50% (19.1%). Variables dependent on the number of sampled cores will likely be altered with the use of MRI-fusion biopsy. The data from the region of interest appears to be most useful when considering the percentage of Gleason grade 4 in the biopsy specimen. Conversely, it is the percentage of cores positive in the systematic cores that is most closely associated with adverse surgical pathology.

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**Poster #54**

**ASSOCIATION OF URINARY PCA3 AND TMPRSS2:ERG RISK GROUPS WITH DETECTION OF PROSTATE CANCER AT REPEAT BIOPSY IN MEN WITH AN INITIAL NEGATIVE PROSTATE BIOSPY**

Matthew Lee, MD, Javed Siddiqui, BS, Ganesh Palapattu, MD, John Wei, MD, Arul Chinnaiyan, MD, Scott Tomlins, MD and Simpa Salami, MD
University of Michigan
Presented By: Matthew Lee, MD

The decision to perform a repeat prostate biopsy in men with an initial negative biopsy continues to be a clinical challenge. Herein, we evaluate the role of combining urinary detection of TMPRSS2:ERG (T2:ERG) and PCA3 in detecting high grade prostate cancer (PCa) in men undergoing repeat prostate biopsy. We performed a retrospective review of 142 men with post digital rectal exam urine collected prior to a negative study prostate
biopsy. Clinical grade Transcription Mediated Amplification (TMA) was used to quantify T2:ERG and PCA3 scores. The scores were then combined to create a clinically practical algorithm (risk groups 1 – 5; Figure 1a) for predicting high grade PCa. In total, 49 patients underwent follow up prostate biopsy, of which 26.5% and 20.4% were diagnosed with any PCa and high-grade PCa respectively (Figure 1b). Initial pre-biopsy PSA was the only significant variable associated with cancer detection on follow-up biopsy (median PSA = 5.3 vs. 3.8 ng/mL; p=0.044). As shown in Figure 1b, low risk groups (1 – 3) was associated with low risk of detecting high grade PCa (<10%; p>0.05). Urinary T2:ERG and PCA3 scores may be useful in selecting patients for repeat prostate biopsy. Further studies are needed to determine the optimal score cut off point for repeat prostate biopsy.

Poster #55
THE IMPACT OF TIME FROM PROSTATE BIOPSY ON RATES OF PROSTATE HEMATOMA ARTIFACT ON POST-BIOPSY PROSTATE MRI
Vidit Sharma, MD1, Alessandro Morlacchi, MD2, Matteo Soligo, MD2, Adam T. Froemming, MD2, Robert H. McLaren, MD2, Lance A. Mynderse, MD2 and R. Jeffrey Karnes, MD2
1Mayo Clinic; 2Department of Urology, Mayo Clinic
Presented By: Vidit Sharma, MD

Introduction: Prostate MRI is commonly obtained after a prostate biopsy. However, the effect of time from biopsy on prostate hematoma artifact (PHA) on MRI is understudied.

Methods: Prostate MRIs (2002–2013) obtained after prostate biopsy were reviewed to identify PHA. Time from biopsy was modeled in univariable and multivariable logistic regressions. Youden’s J statistic determined the number of days after biopsy associated with the most discriminative threshold for PHA on MRI.

Results: Among 396 staging prostate MRIs, median time from biopsy to MRI was 61 days and 27%(N=107) had PHA on MRI. Each month between prostate biopsy and MRI was associated lower PHA rates using descriptive statistics (Figure) and univariable logistic regression (odds ratio 0.90, p<0.01). Time from prostate biopsy remained inversely associated with PHA on multivariable logistic regression (adjusting for number of biopsy cores, age, cT stage, 3 vs 1.5 Tesla, and PSA). A threshold of 51 days after prostate biopsy maximized the Youden index and was the most discriminative cutoff with respect to PHA rates: PHA rates <51 days of biopsy 37% vs 19.5% >51 days, p<0.01.

Conclusion: PHA incidence at post-biopsy MRI decreases over the course of several months after biopsy. Waiting 51 days after prostate biopsy was the most discriminatory cutoff for hematoma incidence.
Annual Business Meeting Agenda

I. Call to Order: Gary J. Faerber, MD

II. Minutes of the 2017 Annual Business Meeting: Jeffrey A. Triest, MD

III. Secretary Report: Jeffrey A. Triest, MD

IV. Treasurer Report: Mark D. Stovsky, MD, MBA, FACS

V. Historian Report: Edward E. Cherullo, MD

VI. Committee Reports
   a. Audit and Budget Committee: James C. Ulchaker, MD, FACS
   b. Board of Directors Report: Jeffrey A. Triest, MD
   c. 2018 Local Arrangements Committee: Geoffrey N. Box, MD
   d. Program Committee: Jeffrey A. Triest, MD
   e. Editorial and Awards Committee: Aaron J. Milbank, MD
   f. Health Policy Committee: James M. Dupree IV, MD, MPH
   g. Long Range Planning Committee: Jeffrey A. Triest, MD
   h. Young Urologists Committee: Anthony J. Polcari, MD
   i. Bylaws Committee: Aaron J. Milbank, MD
   j. Education Committee: Bradley F. Schwartz, DO, FACS

VII. Representative to the AUA Board of Directors: Chandru P. Sundaram, MD, FACS

VIII. Future Meeting Report: Jeffrey A. Triest, MD

IX. Membership Committee Report and Election of New Members:
   James C. Ulchaker, MD, FACS

X. Unfinished Business

XI. New Business

XII. Nominating Committee Report and Elections: James C. Ulchaker, MD, FACS

XIII. Introduction of Incoming President

XIV. Adjournment
Membership Candidates and Transfers

* Application Not Complete

CANDIDATES FOR MEMBERSHIP

Active
* BENSON, MD Jonas
* CHESROW, MD Alexis
* DAVILI, MD Zurab
* JOHNSON, MD, BSc Benjamin
* OLSON PADILLA, MD Wendy
* PAGORIA, MD Dustin

POTRETZKE, MD Aaron
* SANDHU, MD Gurdarshan
SMITH, MD Robert
SOBOL, MD Jennifer
SRECKOVIC, MD George
VOURGANTI, MD Srinivas
YANG, MD Glen

Affiliate
BAUMANN Bethany

Associate
ALLEN, MD Noah
CHARTRAND, DO Ryan
CHU, MD, MSCE David
EDEN, MD Catherine
LOCKWOOD, MD Gina
LOEB, MD Aram
MAURICE, MD Matthew
MCADAMS, MD Sean

PREECE, MD Janae
RIEDER, MD Jocelyn
ROTH, MD Elizabeth
SIEGERT, DO James
TADROS, MD, MCR Nicholas
THOMA, DO Steven
VIERS, MD Boyd
WETTERLIN, MD Jessica

Research Scientist
SINTSOVA, PhD Anna

TOTAL APPLICANTS 31

INTERNAL TRANSFERS

To Active Membership
PSUTKA, MD, MSc Sarah
JOHNSON, MD, MS Matthew
LEO, MD Mark

MURPHY, MD Jeremiah
SHAH, MD Anish

To Senior Membership
BATTEN, MD William
BEGUN, MD Frank
BIANCHI, MD Gregory
BURSTEIN, MD Jay
FISHER, MD Dirk
GODIWALLA, MD Shirley

HAMILTON, MD Craig
KATZ, MD David
LITSCHER, MD Lawrence
STOGDILL, MD Brian
YODLOWSKI, MD Lawrence

TOTAL INTERNAL TRANSFERS 16
## Membership Summary Report

### Active
- Active Member: 1,018
- Active Member - Transfer Internal: 1
- Active Member - Transfer into Section: 4
  
  **Total Active Count: 1,023**

### Affiliate
- Affiliate Member: 1
  
  **Total Affiliate Count: 1**

### Associate
- Associate Member: 110
  
  **Total Associate Count: 110**

### Honorary
- Honorary: 1
  
  **Total Honorary Count: 1**

### Senior
- Senior Member: 550
- Senior Member - Transfer Internal: 11
  
  **Total Senior Count: 561**

**TOTAL MEMBERSHIP COUNT: 1,696**
Proposed Bylaws Changes

ARTICLE II
OFFICERS

Section 11—Vacancies

Should a vacancy occur in any elected office of the Section, more than sixty (60) days before a scheduled election, then the Executive Committee shall promptly nominate a replacement from among the membership or the existing Board of Directors, taking into account geographic considerations and relevant factors of experience and necessary qualifications for the vacant position. The vacancy shall be filled at a special meeting of the Section Board of Directors, requiring a vote of two-thirds of the entire Board, excluding the individuals whose names have been placed in nomination.

ARTICLE III
BOARD OF DIRECTORS

Section 1 – Members of Board

The Board of Directors shall consist of the President, President-Elect, Immediate Past President, Secretary, Treasurer, Historian and one elected member from each of the following geographic units: (1) Illinois; (2) Indiana; (3) Iowa; (4) Michigan; (5) Minnesota, North Dakota, and South Dakota; (6) Ohio; and (7) Wisconsin. The Representatives to the Board of Directors of the AUA, the Secretary-Elect, the Treasurer-Elect, the Chair of the Women in Urology Committee, the Chair of the Health Policy Council, and the Chair and the Vice-Chair of the Young Leadership Committee shall be non-voting members of the Board of Directors.

Section 2 – Term

The term of office of the geographic unit members shall be three (3) years and no retiring member of the Board of Directors shall be eligible for re-election to the Board as a representative of a geographic unit. Geographic unit members are required to practice in the state in which they are representing. If the representative moves outside of the state of representation during his or her term, a vacancy is automatically created and a replacement representative will be filled in accordance with these Bylaws.

ARTICLE IV
COMMITTEES

Section 16 - Women in Urology Committee

The Committee shall consist of a Chair and Vice Chair, and one member and one alternate from the following geographic units: Illinois, Indiana, Iowa, Michigan, Minnesota, North Dakota, South Dakota, Ohio, and Wisconsin with two year staggered terms to ensure no more than one member rotates off a geographic unit annually. Appointments to the geographic units are to be made by the Committee in consultation with the outgoing Women in Urology Committee member and/or the NCS Board of Directors representative of the outgoing geographic unit. The Committee itself appoints its own Chair and Vice Chair, each for a term of two years, renewable once, with the Vice chair ascending to the position of Chair at the end of the terms with the Women in Urology Committee approval. The Women in Urology Committee’s primary responsibility is to advise the Board of Directors on issues of particular concern to female urologists and addresses membership issues for female urologists. The Women in Urology Chair shall serve ex-officio, without vote, on the NCS Board of Directors for the duration of her term. The Chair presents at the Section
Board of Directors’ meetings and is responsible for planning the Women in Urology segment on the annual meeting program when applicable.

ARTICLE VIII

VACANCIES

Should a vacancy occur in any elected position of the Section, more than sixty (60) days before a scheduled election, then the Executive Committee shall promptly nominate a replacement from among the membership or the existing Board of Directors, taking into account geographic considerations and relevant factors of experience and necessary qualifications for the vacant position. The vacancy shall be filled at a special meeting of the Section Board of Directors, requiring a vote of two-thirds of the entire Board, excluding the individuals whose names have been placed in nomination.
North Central Section of the AUA Bylaws
(Amended 11/2017)

ARTICLE I
MEMBERSHIP

Section 1 – Boundaries
An applicant for membership in the North Central Section of the American Urologic Association, Inc. (the “Section”) must be a resident of, or practice in, Illinois, Indiana, Iowa, Michigan, Minnesota, North Dakota, Ohio, South Dakota or Wisconsin. Individuals who initially join the Section and then at a future date relocate to another section of the American Urological Association, Inc. (“AUA”) may retain membership in the Section.

Section 2 – Member Categories
The Section membership shall include: Active Members, Associate Members, Affiliate Members, Senior Members, Honorary Members, Corresponding Members and Candidate Members, Research Scientist Members, International Members, Allied Members, Advanced Practice Provider Members, International Members-in-Training, Resident/Fellow Members and Medical/Graduate Student Members.

Section 3 – Dues, Initiation Fees, and Assessments
The fiscal year of the Section shall date from January first to December thirty-first. All members except for Senior and Honorary Members shall be assessed application fees and dues in an amount determined by the Board of Directors. Special assessments may be ordered by the Board of Directors but must be approved by a majority of the members present and voting at the Annual Business Meeting. Any member who after appropriate notification does not pay membership dues shall cease to receive Section publications and notices.

Section 4 – Voting Status and Rights
Only Active and Senior Members of the Section who are members in good standing of the AUA and AUA Education and Research, Inc. (AUA E/R) shall be eligible to vote at the Annual Meeting. Active and Senior Members who are elected to Honorary Membership shall retain their voting status. Only voting members are eligible to hold office. All members shall be entitled to receive the latest available copy of the Articles of Incorporation, the Bylaws and the roster of membership of the Section.

Section 5 – Election/Approval of Membership
All members shall be elected at the Annual Business Meeting and must be members of the AUA and AUA E/R or have made application for membership to the AUA and AUA E/R. New members shall receive a Certificate of Membership from the Secretary and the AUA will be notified of their Section membership.

Section 6 – Active Members
Requirements for Active Members are as follows:

1) Possession of an unlimited license to practice medicine and surgery in the state, province or country of the applicant’s residence.
2) Membership in good standing in the American Urological Association, Inc. and practice within its geographical boundaries.
3) Possession of an MD or DO degree (or United States Medical Licensure equivalent), and completion of an ACGME accredited urology residency or equivalent by the Royal College of Surgeons (“RCS”) in Canada or the Quebec Board of Urology or the certifying Board of Urology in the country where practicing within the geographic boundaries of the AUA.
4) Limitation of practice to the specialty of Urology.
5) Certification by the American Board of Urology (“ABU”), the Royal College of Surgeons in Canada or the Quebec Board of Urology or the certifying Board of Urology in the country where practicing within the geographic boundaries of the AUA.
6) Recommendation for membership by two (2) voting members of the Section, except
Section 7 – Senior Members
Members are eligible for Senior Membership in the Section if they have been Active Members for 20 years in either the Section or the AUA and are retired or are permanently disabled.

Section 8 – Associate Members
Requirements for Associate Membership are as follows:

a. Requirements are the same as Active Membership except for board certification.

b. Candidate Members Eligible for Fast Track Associate Status. Associate Membership will be offered to all Candidate Members who have passed the qualifying examination (Part I) of the ABU.

c. Non-Members Eligible for Associate Status. Associate Membership is available to non-member urologists who are practicing within the geographic boundaries of a chartered AUA Section, but are not certified by the ABU.

If an Active Member fails to become recertified as required by the ABU (or other certifying board), the Section will transfer the individual to Associate Member status.

If an Active Member becomes decertified by the ABU, or other certifying board, the member shall be automatically dropped for non-compliance with the Section Bylaws, pursuant to Expulsion and Reinstatement policies.

d. Transfer to Active Membership. Associate Members who have passed the ABU certifying exam (Part II) will be transferred to Active Membership in the Section.

Section 9 – Affiliate Members
Affiliate membership is available to Non-urologist MDs or Doctors of Osteopathy who are significantly contributing to the field of urology through clinical practice. They shall be nominated by two (2) Active or Senior Members who shall furnish the Section Board of Directors with the curricula vitae and other pertinent information.

Section 10 – Honorary Members
Scientists who have achieved outstanding prominence in a field of medicine related to Urology, Past Presidents of the Section and other distinguished urologists are eligible for Honorary Membership. Candidates must be nominated by the Immediate Past President upon recommendation of at least three (3) Active or Senior Members. They must be approved by the Board of Directors and a majority of the members present and voting at the Annual Business Meeting. Honorary Members who have been Active, Associate, or Senior Members shall retain all of their previous rights and privileges but other Honorary Members do not have voting privileges nor eligibility to Section offices and committee assignments. All Honorary Members are exempt from initiation fees, annual dues, and special assessments.

Section 11 - Research Scientist Members
Research Scientist Membership is available for independent investigators with PhDs or equivalent degrees, DVMs, non-practicing MDs and related professionals who have demonstrated achievements in the field of urology through research or who have made substantial contributions to urologic research in an administrative capacity.

Section 12 - International Members
International Membership is available to urologists who practice in countries beyond the geographic boundaries of the AUA. The applicant shall be a member of the local or national urological organization in his country. If a national organization does not exist within the applicant's country, a waiver of this requirement may be considered by the Executive Committee. The applicant's practice must be limited entirely to the specialty of urology. The applicant must be a graduate of an acceptable medical school who has received a Doctor of
Medicine or equivalent degree.

**Section 13 - Allied Members**
Allied Membership is available to non-physician professionals, including nurses (e.g., RN, LPN, LVN), medical technicians, and medical assistants, specializing or concentrating in urology for at least one year.

**Section 14 - Advanced Practice Provider Members**
Advanced Practice Provider Membership is available to physician assistants, nurse practitioners or advanced practice nurses specializing or concentrating in urology for at least one year.

**Section 15 - International Residents-In-Training Members**
International Residents-in-Training Membership is established to extend AUA education and professional advantages to Urological Residents-in-Training who reside outside the geographic boundaries of the section. These members must be enrolled in a residency program approved by the European Board of Urology (EBU), Residency Review Committee for Urology or the appropriate credentialing body in a country other than the United States. Eligibility for this membership status shall be for a period of ten (10) years from the member’s date of completion of medical school.

**Section 16 - Resident/Fellow Members**
Resident/Fellow Membership extends section educational and professional advantages to urological residents or fellows and research postdoctoral fellows in training Resident/Fellow Members must be practicing and studying within the geographic boundaries of the section. Resident/Fellow membership is available to:
1) Residents enrolled in an ACGME-accredited or AOA-approved urology residency training program.
2) Post-doctoral research fellows with a MD, PhD or equivalent degree actively engaged in biomedical research under a qualified mentor.
3) Clinical Fellows enrolled in an accredited fellowship or post residency training program.

**Section 16.1 ACGME**
Medical Doctors (MD) or Doctors of Osteopathy (DO) enrolled in a urology residency program approved by the Residency Review Committee and ACGME are eligible for Resident/Fellow Membership; and after completing training and passing part 1 of the ABU qualifying examination are eligible for Associate Member status (Fast Track), Section 8.1. Those who successfully pass all parts of the ABU certifying examination are eligible for Active Member status, Section 6.

**Section 16.2 AOA**
Doctors of Osteopathy enrolled in an AOA-approved urology residency training program are eligible for Resident/Fellow Member status. DOs completing their urology training and passing the American Osteopathic Board of Surgery certifying examination are eligible for Associate Member status, Section 8.2.

**Section 17 - Medical/Graduate Student Members**
Medical/Graduate Student Membership is established to provide education about urology as a surgical specialty and as a career. Medical/Graduate Student Membership is available to:
1) Individuals enrolled full-time in a medical school for the purpose of obtaining a Medical Doctor degree, Doctors of Osteopathy degree, or equivalent degree, or
2) Individuals enrolled full-time in an accredited graduate school program for the purpose of obtaining a PhD or equivalent degree and actively engaged in research under a qualified mentor.

**Section 18 – Application For Membership**
Application for membership in this Section must be made on forms approved by the Board of Directors and provided by the Secretary. Qualifications for membership in each of the indicated categories shall be as stated in this Article I.
Section 19 – Publication of Names
The names of applicants for Active membership which have been approved by the Section Board of Directors shall be available to the membership prior to the Annual Business Meeting.

Section 20 – Notification of Election
Every newly elected member of the Section shall be officially notified of his or her election by the Secretary. The AUA shall also be notified of the new member’s election.

Section 21 – Transfer of Membership
An Active, Senior, or Associate Member in good standing of the AUA and of another Section of the AUA who moves his or her residence or practice into the territory of the Section, and who meets all membership qualifications, is automatically eligible for membership in the Section upon presentation of credentials to the Board of Directors of the Section. These credentials shall include his or her previous section records and a letter from that section’s Secretary indicating the applicant’s membership status.

Section 22 – Resignation, Expulsion and Reinstatement
a) Resignation. Any member who has complied with all the requirements of these Bylaws during the life of his or her membership may resign by written notification to the Secretary who shall officially acknowledge the receipt of the notice. The Secretary shall notify the Secretary of the AUA of such resignation.

b) Expulsion. Any member expelled by, or refused membership in, the AUA or AUA E/R shall immediately have his or her Section membership terminated. In addition, a member may be expelled by the Board of Directors of the Section upon conviction of a serious crime, or upon revocation, suspension or surrender of his or her license to practice medicine for reasons of improper or unethical conduct, upon withdrawal of certification by the ABU, or on other grounds stated in these Bylaws. The expulsion of a Section member shall be promptly reported to the AUA Secretary, with a statement of reasons for such expulsion.

c) Reinstatement. The reinstatement of suspended members to good standing in the Section shall be determined by the Board of Directors of the Section, which may recommend the reinstatement of expelled members who have been previously reinstated by the AUA; but this action must be ratified by a three-fourths vote of the members of the Section present and voting at a regular meeting.

Section 23 – Method of Election
Applications for all categories of membership must reach the Secretary at least seven (7) days before the Annual Business Meeting. The names of the applicants for all categories of membership will be published in the Annual Business Meeting program book or circulated at the Annual Business Meeting. Each applicant for membership who has met the requirements contained in these Bylaws shall become a member if he or she receives a majority vote of the members present and voting at the Annual Business Meeting. The names of all new members elected in the past year shall be published in the program of the Annual Meeting. The Secretary shall furnish all new members a written notification of membership, a copy of the Bylaws, and a roster of membership of the Section. Active and Honorary Members shall be furnished a Certificate of Membership.

ARTICLE II
OFFICERS

Section 1 – Officers and Executive Committee
The Officers shall be the President, the President-Elect, the Immediate Past President, the Secretary, the Secretary-Elect, the Treasurer, the Treasurer-Elect and the Historian. Each Officer shall serve without financial remuneration from the termination of the Annual Meeting at which he or she is elected until the termination of the Annual Meeting at which his or her successor has been chosen or until his or her successor has otherwise been chosen. No member shall serve more than one term in any office, provided a member can serve up to three one-year terms as Historian and a member can serve in more than one office, though not
concurrently. Each Officer must be an Active or Senior Member in good standing, a resident of or practicing within the boundaries of the Section, elected by a majority vote at the Annual Business Meeting. The officers shall comprise “the Executive Committee”. The Executive Committee is empowered and may, on occasion, make policy and/or other decisions, but remain primarily advisory to the Board and Long Range Planning Committee to present issues to the Board for decisions on matters of the Section.

Section 2 – President
The term of office shall be one (1) year. The President shall be the Chief Executive Officer of the Section and shall serve as Chair of the Board of Directors and at the Scientific and Business Sessions of the Section. The President shall appoint Active or Senior Members to vacancies on all standing committees and the Chairs of the committee, as provided in these Bylaws. The President shall appoint special committees authorized by the Board of Directors or membership. All committee appointments shall be made within sixty (60) days after the Annual Meeting and reported to the Secretary for inclusion in the next Newsletter. The President may call Special Meetings of the Board of Directors. The President shall direct the attention of the Board of Directors to all matters pertaining to the interpretation of the Bylaws and to all matters of discipline of members. The President shall be a member of the Program Committee for the Annual Meeting, a member of the Finance Committee and an ex-officio member of all Standing Committees. The President shall nominate a Section member in good standing to serve on the Editorial Board of the Journal of Urology when a vacancy occurs. The President shall appoint a Parliamentarian to all meetings of the Board of Directors and Business Sessions of the Section.

Section 3 – The President-Elect
The term of office shall be one (1) year and the President-Elect shall automatically succeed the retiring President at the conclusion of the Annual Meeting at which the current President’s term of office expires. The President-Elect shall perform any duties assigned by the President and serve in his or her absence. The President-Elect shall appoint a Chair of the Local Arrangements Committee for the Annual Meeting at which he or she will preside, within sixty (60) days after assuming the office of President-Elect.

Section 4 – The Immediate past President
The term of office shall be one (1) year or until his or her successor assumes the office.

Section 5 – The Secretary
The term of office shall be three (3) years or until his or her successor assumes the office. The Secretary shall: (a) employ, with the approval of the Board of Directors, such secretarial assistance as is necessary under the direction of the Executive Director; (b) keep accurate records of all the activities of the Section; (c) give prompt attention to all correspondence; (d) train the Secretary-Elect during the Secretary’s last year in office; (e) keep an accurate list of (1) members, (2) applicants for membership, (3) applicants recommended for membership by the Board of Directors, (4) applicants rejected and dates of rejection, (5) members suspended or expelled and dates of suspension or expulsion, (6) members reinstated and the date of same, and (7) Active or Associate members transferred to Senior, Inactive, or Honorary membership; (f) provide application blanks and receive applications for all categories of membership and shall send them to the Board of Directors for consideration; (g) give written notification to all newly elected members and furnish them with a copy of the Bylaws, one (1) roster and a certificate of membership, in the case of Active and Honorary members; (h) publish and send Newsletters; (i) send notice of the time and place of the Annual Meeting by Newsletter to all members at least six (6) months prior to the meeting; (j) arrange for meetings of the Board of Directors and send notices of all regular and special meetings to all members of the Board of Directors at least fifteen (15) days prior to the meeting; (k) keep the minutes and all records of such meetings; (l) have charge of the arrangements for the Annual Meeting in cooperation with the Chair of the Local Arrangements Committee and in consultation with the President; (m) shall receive titles of abstracts and papers to be read at the Annual Meeting and present them to the Program Committee; (n) keep accurate minutes of the Annual Business Meeting and send one (1) copy to every member of the Board of Directors; (o) obtain the names of all committee members for the coming year from the President within sixty (60) days
Section 6 – Secretary-Elect
The Secretary-Elect shall be elected at the Annual Business Meeting one (1) year before the
termination of the current Secretary's term of office. The term of office shall be one (1) year and
the Secretary-Elect shall automatically become the new Secretary at the conclusion of the
Annual Meeting at which the current Secretary's term expires. The Secretary-Elect shall
become familiar with the duties of the Secretary during the Secretary's final year in office. The
Secretary-Elect shall attend all meetings of the Board of Directors and the Finance Committee,
and make site visits but shall not be eligible to vote.

Section 7 – Treasurer
The term of office shall be three (3) years or until a successor assumes the office. The
Treasurer shall: (a) keep an accurate record of all assets of the Section and keep them in the
name of the Section; (b) be bonded for approximately the total amount of the assets of the
Section, bond being held by the President; (c) disburse the monies of the Section only by the
authority of the Board of Directors; (d) keep a journal, ledger, and alphabetical list of all
members indicating the state of their accounts with the Section; (e) be responsible for the
collection of all dues and assessments, both current and delinquent; (f) report delinquent
members promptly to the Secretary and to the Board of Directors; (g) have an annual audit of
the Section's financial status prepared by a certified public accountant and present a report of
this audit to the Board of Directors and to the members of the Section at the Annual Business
Meeting; (h) recommend to the Board of Directors the need for any special assessments; (i) be
responsible for setting the budgets, subject to approval of the Board of Directors, for the
Annual Meeting and working with the Local Arrangements Committee in monitoring expenses;
(j) report annually to the Board of Directors on the assets held by the Section, the existence of
which must be verified by the certified public accountant and the Audit and Budget Control
Committee; (k) take such other action as directed by the Board of Directors, and (l) train the
Treasurer-Elect during the Treasurer's last year in office.

Section 8 – Treasurer-Elect
The Treasurer-Elect shall be elected at the Annual Business Meeting one (1) year before the
termination of the current Treasurer's term of office. The term of office shall be one (1) year
and the Treasurer-Elect shall automatically become the new Treasurer at the conclusion of the
Annual Meeting at which the current Treasurer's term of office expires. The Treasurer-Elect
shall become familiar with the duties of the Treasurer during the Treasurer's final year in office.

Section 9 – Historian
The term of office shall be one (1) year and is renewable for two additional terms. The
Historian shall: (a) prepare an accurate history of the Section; (b) keep records of the Section
pertinent to its history; (c) present an annual report to the Board of Directors and to the Section
at its Annual Business Meeting; (d) prepare for publication any historical issues relative to the
Section and present it to the Board of Directors; e) prepare a necrology report and present it to
the Board of Directors and members of the Section at the time of the Annual Business
meeting. Present a brief eulogy of any member who has made outstanding contributions to
Urology and a brief eulogy of any Section past president who has died in the preceding year at
the Annual Business meeting or plenary session of the annual scientific meeting as determined
by the Section Secretary. f) Present an encomium of Section past presidents, or any member
who has made outstanding contributions to Urology, at the time of their retirement, to members
of the Section during a time designated by the Secretary at the Annual Business meeting or
during the plenary sessions of the annual scientific meeting. Funds required for the foregoing purposes shall be subject to the approval of the Board of Directors.

**Section 10 – Executive Director**
The Executive Director shall be the Chief Administrative Officer of the Section and shall report directly to the Board of Directors of which he or she shall be an ex officio, non-voting member. The Executive Director need not be a physician nor a member of this Section. The Executive Director shall have the full and exclusive authority to hire and fire staff and to prescribe compensation within the framework of the approved budget. The Executive Director shall have the authority and ultimate responsibility to carry out all policies and programs of the Section within the framework of the budget and subject to the direction of the officers and the Board of Directors and the Section’s committees.

**Section 11 – Vacancies**
Should a vacancy occur in any elected office of the Section, more than sixty (60) days before a scheduled election, then the Executive Committee shall promptly nominate a replacement from among the membership or the existing Board of Directors, taking into account geographic considerations and relevant factors of experience and necessary qualifications for the vacant position. The vacancy shall be filled at a special meeting of the Section Board of Directors, requiring a vote of two-thirds of the entire Board, excluding the individuals whose names have been placed in nomination.

**ARTICLE III**
**BOARD OF DIRECTORS**

**Section 1 – Members of Board**
The Board of Directors shall consist of the President, President-Elect, Immediate Past President, Secretary, Treasurer, Historian and one elected member from each of the following geographic units: (1) Illinois; (2) Indiana; (3) Iowa; (4) Michigan; (5) Minnesota, North Dakota, and South Dakota; (6) Ohio; and (7) Wisconsin. The Representatives to the Board of Directors of the AUA, the Secretary-Elect, the Treasurer-Elect and the Chair and the Vice-Chair of the Young Leadership Committee shall be non-voting members of the Board of Directors.

**Section 2 – Term**
The term of office of the geographic unit members shall be three (3) years and no retiring member of the Board of Directors shall be eligible for re-election to the Board as a representative of a geographic unit.

**Section 3 – Authority and Duties**
The Board of Directors shall constitute the governing Board of the Section and shall be responsible for the administration and management of the Section. The Board of Directors shall receive the reports of the standing and special committees of the Section and shall oversee all functions relating to financial management, member services, Annual Meeting, industry relations, ethics, and official publication. The Board of Directors shall employ the Executive Director whose duties, responsibilities and authority shall be as specified in Article II, Section 10 of these Bylaws. The Board of Directors shall report all actions to the membership at the Annual Business Meeting. The Board of Directors shall select the time and place of the Annual Meeting.

**Section 4 – Meetings**
The Board shall hold a winter meeting and a meeting concurrently with the Annual Meeting of the Section and shall hold other interim meetings at such times and places as may be established by the President or any seven (7) voting members of the Board.

**Section 5 – Notice**
Notice of each meeting of the Board of Directors shall be sent out by the Secretary to each member of the Board of Directors to be received at least fifteen (15) days before the date of the meeting. The matters to be discussed and voted upon at any duly called meeting of the Board of Directors shall not be limited to those set forth in the notice of such meeting.
Section 6 – Quorum
Seven (7) Directors shall constitute a quorum for transaction of business by the Board of Directors.

ARTICLE IV
COMMITTEES

Section 1 – Appointment
Active and Senior Members only are eligible for appointment to Committees of the Section. All Committees are to be appointed by the new President within sixty (60) days following the Annual Meeting. The President shall have the power also to appoint special committees for a specific purpose subject to approval by the Board of Directors. All members must be given prompt written notification by the Secretary. A roster of all Section Committees shall be published in the first Newsletter following the Annual Meeting.

Section 2 – Nominating Committee
a) The committee shall be composed of the two Immediate Past Presidents in attendance at the Annual Meeting, one member of the Board of Directors elected by the Board of Directors and four (4) or, if the Past-Past President is a non-voting member of the committee (as provided below), five (5), members selected by the geographic units other than the geographic units represented by the three (3) aforementioned other members of the Committee. The Chair shall be the most recent Past President on the committee and the Vice-Chair shall be the Past-Past President on the committee. In the event the two Immediate Past Presidents serving on the committee are from the same geographic unit, the Past-Past President shall be a non-voting member of the committee, and a total of five members shall be selected by the geographic units, as provided above, so that each geographic unit has representation on the committee.

b) Each geographic unit not represented on the committee by the Past Presidents or the member of the Board of Directors shall choose one representative to serve on the committee who has demonstrated leadership or active participation in the Section and each geographic unit and the Board of Directors shall choose one alternate representative to serve in the event its representative cannot serve or attend meetings. Each such representative shall attend all meetings of the Committee, provided if the representative cannot attend, the alternate shall attend and serve in his or her stead. In the event that neither the delegate or alternate delegate from the geographical unit is able to attend the Nominating Committee meeting, the State Representative of the Section's Board of Directors may serve on the Nominating Committee in their stead.

c) It shall be the duty of this Committee to present to the members of the Section at the Annual Business Meeting a list of nominees for the following Section offices:
   1) President-Elect
   2) Secretary (every third year)
   3) Treasurer (every third year)
   4) Secretary-Elect (every third year)
   5) Treasurer-Elect (every third year)
   6) Historian (annually)
   7) Two or more members of the Board of Directors

d) The Nominating Committee shall also nominate members of the Section in good standing to serve as Representatives and Alternate Representatives on the AUA Board of Directors, the AUA Nominating Committee and other AUA committees for terms specified in the AUA Bylaws.

e) Selection of AUA President-Elect: Selection of the AUA president will be accomplished by electronic balloting of the entire Membership. Membership will be contacted electronically to submit nominees for the AUA President-Elect in November prior to the annual meeting when it's the section's turn for rotation of the AUA President Elect. The potential nominees must provide a statement of intent that will be posted on the section’s website. The Chairman of the Nominating
Committee, Secretary, and Executive Director will review the candidates and confirm eligibility for the position. Specifically, that the candidates meet the AUA requirements and have served on the Board of Directors or as an Officer of the North Central Section.

Election Procedures:
1. Prior to the annual meeting where the position is open, all eligible voting members will be allowed to vote via a secure independent web based voting system. Only one vote per voting member will be counted and the Office of the Executive Director will verify only one vote per voting member. The deadline for voting will be January 31.
2. The election results will be verified by a committee consisting of the Secretary of the NCSAUA, Chairperson of the Nominating Committee and the Executive Director.
3. The winner must gather 50% of the vote plus one to be declared the victor
4. If there is no outright victor then the top two vote getters will face off in another electronic election, via a secure independent web based voting system to be completed by February 28th. Only one vote per voting member will be counted for the face-off election, and the Office of the Executive Director will verify only one vote per voting member.
5. The votes will be verified by the Secretary, Chairperson of the Nominating Committee, and the Executive Director. The victor will be notified at the Annual Business Meeting.

f) The report of the Nominating Committee shall be presented at the Annual Business meeting, and a majority of votes shall be necessary to ratify that report. No nominations for Officers, Directors, or AUA Representatives shall be accepted from the floor of the Business Meeting.

g) Should the report of the Nominating Committee be rejected, in whole or in part, by a majority of the membership voting at the Business Meeting, then the Committee shall promptly seek another acceptable candidate for each challenged position in accordance with the provisions of Article IV, Sections 2 (c) and (d) of these Bylaws. A subsequent candidate approved by the Nominating Committee shall be submitted through the mail, within 30 days thereafter, for approval by majority vote of all eligible Section members responding to that vote.

h) The following shall be the Section representatives on AUA Committees:
   1) Bylaws Committee. Chair of the Section Bylaws Committee.
   2) Membership Committee. Secretary of the Section.
   3) Health Policy Committee. Two members of the NCS Health Policy Committee.

i) The representatives to the AUA AudioVisual Committee shall be appointed by the AUA President in consultation with the Section for a one-year term.

j) While serving as a member of this Committee, no member shall be eligible for nomination to any elective office of the Section or the AUA nor for election as a representative to the AUA provided, however, incumbents in any office shall continue for their stated term of office.

Section 3 – Membership Committee
The Committee shall consist of the Board of Directors. The Chair shall be the Immediate Past President. It shall consider applications for all categories of membership which have been filed with the Secretary. When necessary, it will make a thorough investigation of the ethical, moral and professional standards of an applicant. The Committee shall meet annually or as often as circumstances warrant.

Section 4 – Finance Committee
The Finance Committee shall consist of the President, President-Elect, Immediate Past President, Secretary and Treasurer. The Secretary-Elect and Treasurer-Elect shall be non-voting members. The Treasurer shall be the Chair. The Finance Committee shall study and evaluate all financial affairs of the Section and make recommendations to the Board of Directors, set up a budget for the various activities and committees each year, and, on the
basis of the projected budget, make recommendations to the Board of Directors regarding dues for the ensuing year. The Committee shall meet annually or as often as circumstances warrant.

Section 5 – Local Arrangements Committee
The President-Elect shall appoint the Chair of the Local Arrangements Committee for the meeting at which the President-Elect will preside within sixty (60) days after his election as President-Elect. The Chair shall be from the State within the Section which is the host for such meeting. The Chair shall have the power to appoint all Local Chairs and Committee Members. The Treasurer of the Section shall serve as the Treasurer for the meeting and shall be responsible for all of the finances of the meeting. All expenditures must be authorized in advance by the Treasurer or the Chair in accordance with the budget for the Annual Meeting. The Committee shall prepare a budget for the Annual Meeting and present it to the Board of Directors for its approval. The Committee shall make all necessary arrangements for the Annual Meeting after consultation with the President and the Secretary and report such arrangements to the Board of Directors. The Committee shall prepare a program description for the Annual Meeting Program.

Additional members of the Committee shall be the Secretary and the immediate past Chairmen of the Local Arrangements Committee.

Section 6 – Program Committee
The Committee shall consist of the President, the President-Elect, the Chair of the Local Arrangements Committee, Chair of the Education Committee, a Resident Representative and the Secretary, who shall be Chair of the Committee, and the Secretary-Elect, if any. The Resident Representative will be appointed by the Long Range Planning Committee annually.

The Committee shall arrange the scientific program for the Annual Meeting and select the abstracts best suited for the program. It shall be the prerogative of the Committee to invite any guest speakers from outside the Section whom the Committee determines would contribute to the program.

Section 7 – Audit Committee
The Committee shall consist of three (3) Representatives of the Board, with 3-year staggered terms to ensure no more than one member rotates off the committee annually. The Chair will be the most senior member. The incoming members will serve one year in a training capacity before joining the committee as a voting member. Appointments are to be made by the President. The Audit Committee’s primary function is to assist the Board in the fulfilling its oversight responsibilities with respect to (1) the audit of the organization’s financial statement and records and (2) the system of internal controls that the organization has established. The Audit Committee shall interview and select the audit company upon request. The Audit Committee reports to the Board of Directors. The Chair of the Audit Committee presents the Audit Report to the Membership at the Business Meeting.

Section 8 – Editorial and Awards Committee
The Committee shall consist of five (5) members and the term of office shall be five (5) years. One new member shall be appointed annually by the President and the most senior member shall be the Chair. No member of the Committee shall be eligible to receive an award granted by the Committee. The Committee may award one or more Traveling Fellowships annually, but if more than one award is to be made, approval by the Board of Directors is required. It shall make the Traveling Fellowship award to Residents or Urologists residing in the Section. Urologists who have been in practice more than five (5) years are not eligible for the award. The recipients need not be members of the Section. The Committee will judge and make awards for the named awards (Thirlby and Traveling Fellowship) and any special prizes accepted for competition by the Board of Directors. It shall instruct the Secretary to send a certificate or formal letter to each recipient stating that he or she has received this award from the Section. It shall request the recipients to give a report of their travel at the next Annual Meeting or submit a written report for publication in the Newsletter. It shall make other awards as directed by the Board of Directors.
Section 9 – Bylaws Committee
The Committee shall consist of three (3) Active or Senior Members and the Secretary. One member, other than the Secretary, shall be designated as Chair by the President. The term of office shall be three (3) years. Members shall be eligible for two (2) terms. The Chair of the Committee shall be a member of the Bylaws Committee of the AUA.

The Committee will adhere to the Section’s goal of complying with the Mission and Vision and Purposes of the AUA, as stated currently in Article I, Sections 1 and 2 of the AUA Bylaws, and propose Bylaws which are in accord, or not in conflict with, those of the AUA. The Chair will keep an accurate file of all correspondence to and from the members of the Committee and from the Secretary of proposed amendments by members of the Section. The Committee shall meet and review the Bylaws annually and recommend to the Board of Directors any changes that seem desirable. All proposed amendments to the Bylaws shall be submitted to the Board of Directors for consideration prior to being published in the Newsletter sixty (60) days before the Annual Meeting.

Section 10 – Technical Exhibits Committee
Section 11 - Education Committee
a) The Education Committee will evaluate educational opportunities, approaches and philosophies as they relate to the Section. Specifically, the Committee will address the content and approach of the Annual Meeting, ongoing educational issues of section members, and any concerns the members may have as they relate to urologic education within the Section. They will be advisory to the Board of Directors.
b) This Committee will meet annually, at the Annual Meeting.
c) The Committee will be comprised of a chair (selected by Board), one “at large” Board member (selected by the Board), the NCS Secretary, and the NCS Secretary-Elect, Chair of the Young Urologist Committee, a resident representative, two section members selected by the Committee Chair (to serve at the discretion of the Committee Chair). The term of the chair will be 3 years, renewable once. At the discretion of the Chairman, one member of the committee will report to the Board of Directors at the Interim Board Meeting.

Section 12 – Health Policy Committee
The Committee shall consist of two representatives from each state in the Section – and where feasible, one of those representatives should live or practice in the state capital or its vicinity. The Chair of the Committee shall be appointed by the Board for a term of two years, and may be reappointed for one additional two-year term. The Chair shall be expected to attend the annual and interim meetings of the Board. The AUA Health Policy Committee Representatives shall be members of the Health Policy Committee.

Section 13 – Young Urologists Committee
The Committee shall consist of a Chair and Vice Chair, and two members less than 10 years out of residency, preferably one from private practice and one from academic practice, from the following geographic units: Illinois; Indiana; Iowa; Michigan; Minnesota, North Dakota, and South Dakota; Ohio; and Wisconsin with two year staggered terms to ensure no more than one member rotates off a geographic unit annually. Appointments to the geographic units are to be made by the President in consultation with the outgoing Young Urologists Committee member and/or the NCS Board of Directors representative of the outgoing geographic unit. The Committee itself appoints its own Chair and Vice Chair, each for a term of two years with the Vice chair ascending to the position of Chair at the end of the terms with the Young Urologist Committee approval. The Young Urologists Committee primary responsibility is to advise the Board of Directors on issues of particular concern to young urologists and addresses membership issues for young urologists. The Young Urologist Committee Chair and Vice Chair shall serve ex-officio, without vote, on the NCS Board of Directors for the duration of their terms. The Chair presents at Section Board of Directors’ meetings and is responsible for planning the young urologist segment on the annual meeting program when applicable.
Vice Chair of the Young Urologists Committee also serves as the NCS representative on the AUA Young Urologist Committee.

**Section 14 – Long-Range Planning Committee**
The Committee shall consist of the President, the President-Elect, the Treasurer, the immediate Past President, the Representative to the AUA, the Chair of the Young Leadership Committee, the Chair of the Education Committee, the Secretary-Elect and the Treasurer-Elect. The Secretary shall serve as the Chair of the Committee. It shall assess the Section's activities and membership needs and make recommendations to the Board of Directors regarding policy and programs.

**Section 15 – Past Presidents Committee**
The Committee shall consist of the President, the President-Elect, and all of the previous Past Presidents of the NCS at the annual meeting. The President shall serve as the Chair of the Committee. It shall meet at the annual meeting and provide an update of the NCS programs. The committee should exchange historical information that may impact on current issues and offer suggestions to the Board for improvement to current program or new programming. The President who will be the Past President at the next interim meeting will report back to the Board.

**ARTICLE V  MEETINGS**
The Annual and Special Meetings of the members shall be held at such time and place as designated by the President and the Board of Directors, subject to the provisions of these Bylaws. The President or five (5) members of the Board of Directors can call special meetings. Official notice of the Annual Meeting shall be included in a Newsletter which must reach the members at least six (6) months before the time of the meeting. Notice of Special meetings must be sent to the members at least twenty-one (21) days before such a meeting. The order of business at the Scientific Meeting shall be determined by the Secretary after consultation with the Program Committee. The members registered and eligible to vote who are present at the Annual Business Meeting and at any Special Meetings shall constitute a quorum for such meeting, and, unless otherwise specifically required by these Bylaws or applicable law, the vote of a majority of such members shall be required to approve any action at such meeting. The order of business at the Annual Meeting shall be set by the Board of Directors.

**ARTICLE VI  AMENDMENTS**
These Bylaws may be amended by the two-thirds (2/3) vote of the members present and voting at the Annual Business Meeting. Proposed amendments must be submitted in writing to the Secretary and referred by the Secretary to the Bylaws Committee which shall consider all proposed amendments and present their recommendations to the Board of Directors. Any proposed amendment shall be printed with the Notice of the Annual Meeting at which the action is to be taken and shall be sent to the members at least thirty (30) days before such Annual Meeting.

**ARTICLE VII  RULES ON PARLIAMENTARY PROCEDURE**
Sturgis Standard Code of Parliamentary Procedure, current edition, shall govern the proceedings of the Section, unless provided otherwise in the Articles of Incorporation or in these Bylaws.
In Memoriam

The North Central Section honors those members who have passed away this year. We will always be thankful for their commitment to the Section and miss them dearly.

George J. Bulkley, MD
Dallas, TX

William L. Engel, MD
Minneapolis, MN

Thomas A. Love, MD
Lake Elmo, MN

Carl Van Appledorn, MD
Ann Arbor, MI

Daniel L. Vodovotz, MD
Tampa, FL

Peter B. Wakefield, MD
Cincinnati, OH
Award Recipients

* Indicates Deceased Member

Traveling Fellowship Recipients

2017  Kevin Ginsburg, MD; Royal Oak, MI
2016  Matthias Hofer, MD, PhD; Chicago, IL
2015  Brian J. Linder, MD; Rochester, MN
2014  Brian J. Minnillo, MD; Cleveland, OH
2013  Florian R. Schroeck, MD, MS; Ann Arbor, MI
2012  Bruce Jacobs, MD, MPH; Ann Arbor, MI
2011  Sandip Prasad, MD, MPhil; Charleston, SC
2010  Cory M. Hugen, MD; Chicago, IL
2009  Michael C. Large, MD; Chicago, IL
2008  Tullika Garg, MD; New York, NY
2007  R. Houston Thompson, MD; Byron, MN
2007  Brian L. Gallagher, MD; West Des Moines, IA
2007  Brian R. Lane, MD; Grand Rapids, MI
2006  Brian L. Gallagher, MD; West Des Moines, IA
2006  R. Houston Thompson, MD; Byron, MN
2005  Ronney Abaza, MD; Columbus, OH
2005  Herkanwal S. Khaira, MD; San Francisco, CA
2004  Herkanwal S. Khaira, MD; San Francisco, CA
2004  David Allan Anderson, MD; Springfield, MO
2003  David C. Miller, MD, MPH; Ann Arbor, MI
2003  David S. Sharp, MD; Columbus, OH
2002  Richard C. Sarle, MD; Dearborn, MI
2001  Mihir M. Desai, MD; Highland Heights, OH
2001  Fernando J. Bianco Jr., MD; Coral Gables, FL
2000  Stephanie J. Kielb, MD; Chicago, IL
2000  Lee E. Ponsky, MD; Moreland Hls, OH
1999  Bijan Shekarriz, MD; Virginia Beach, VA
1998  Sanjay Ramakumar, MD; Tucson, AZ
1997  Steven G. Roberts, MD; Aptos, CA
1996  Jeffrey S. Palmer, MD, FACS, FAAP; Beachwood, OH
1995  Bradley P. Kropp, MD; Oklahoma City, OK
1994  Gregory D. Haselhuhn, MD; Toledo, OH
1993  Joel B. Nelson, MD; Pittsburgh, PA
1992  Earl Y. Cheng, MD; Chicago, IL
1991  Eric J. Dybal, MD; Elk Grove Village, IL
1990  Eugene D. Kwon, MD; Rochester, MN
1989  William A. See, MD; Milwaukee, WI
1988  Kevin T. McVary, MD; Chicago, IL
1987  Hugh A. Kennedy II, MD; Hartford, CT
1986  Julie R. Spencer, MD; Chicago, IL
1985  John E. Garnett, MD; Chicago, IL
1984  Raleigh G. Humphries, MD; Greensboro, NC
1983  Michael E. Kuglitsch, MD; Columbus, WI
1982  Max Maizels, MD; Chicago, IL
1982  Steven H. Selman, MD; Toledo, OH
1981  Philip T. Hoekstra, MD; Grand Rapids, MI
1980  Jeffrey P. Bolduan, MD; Goshen, IN
1979  William E. Kolbusz, MD; Oak Brook, IL
1978  C. Peter Fisher, MD; Ypsilanti, MI
1977  Randall G. Rowland, MD, PhD; Lexington, KY
1975  Reza S. Malek, MD; Rochester, MN
1975  John W. Timmons Jr., MD; Gainesville, FL
1974  Bageshwari P. Sirba, MD; Allen Park, MI
1974  Kalish R. Kedia, MD; Middleburg Heights, OH
1973  Mark S. Soloway, MD; Miami, FL
1973  * Martin I. Resnick, MD; Cleveland, OH
1972  Daniel S. Merrill, MD; Minneapolis, MN
1972  Mark S. Soloway, MD; Miami, FL
1971  * Martin I. Resnick, MD; Cleveland, OH
1971  Nasser Javadpour, MD; Minneapolis, MN
1970  Kenneth A. Kropp, MD; Toledo, OH
1969  * Carl V. Dreyer, MD; Toledo, OH
1968  Carl R. McKinley, MD; Minneapolis, MN
1967  * John P. Donohue, MD; Melbourne Beach, FL
1966  Jack W. Jaffe, MD; Shaker Heights, OH
1965  * Daniel B. Gute, MD; Wellesley, MA
1964  A. Colin Markland, MD; Charleston, SC
1963  Stanley R. Levine, MD; Highwood, IL
1962  Robert Adrain Rehm, MD; Hilliard, OH
1961  * Charles A. Linke, MD; Rochester, NY
1960  Herbert Sohn, MD, JD; Chicago, IL

Thirlby Award Recipients

2017  N/A
2016  Chirag N. Dave, MD; Royal Oak, MI
2015  Mahmood A. Hai, MD, FICS; Westland, MI
2014  Avinash Chennamsetty, MD; Birmingham, MI
2013  Joel Abbott, DO; Madison Hts, MI
2012  Richard A. Memo, MD; Youngstown, OH
2011  Christopher Knoedler, MD; Maplewood, MN
2011  Robert Gaertner, MD; Woodbury, MN
2010  Herbert W. Riemenschneider, MD; Columbus, OH
2009  Ronald S. Suh, MD; Brownsburg, IN
2008  Eduardo Kleer, MD; Ypsilanti, MI
2007  David S. Turk, MD; Medina, OH
2006  Serge P. Marinkovic, MD; Decature, IL
2006  Surendra M. Kumar, MD; Westland, MI
2005  Serge P. Marinkovic, MD; Decature, IL
2004  Serge P. Marinkovic, MD; Decature, IL
2003  Richard A. Memo, MD; Youngstown, OH
2001  Thomas J. Maatman, DO; Grand Rapids, MI
2000  Steven W. Siegel, MD; St. Paul, MN
1999  Thomas J. Maatman, DO; Grand Rapids, MI
1998  Michael G. Oefelein, MD, FACS; Tustin, CA
1997  Thomas J. Maatman, DO; Grand Rapids, MI
1996  Bruce E. Woodworth, MD; Knoxville, TN
1995  Arthur W. Devine Jr., MD; Cedar Rapids, IA
1994  Richard A. Memo, MD; Youngstown, OH
1993  Nader Sadoughi, MD; Dana Point, CA
1992  Thomas J. Maatman, DO; Grand Rapids, MI
1991  Jerrold J. Widran, MD; Palm Desert, CA
1990  Ahmad Hamidinia, MD; Cincinnati, OH
1989  Thomas J. Maatman, DO; Grand Rapids, MI
1988  Stephen W. Leslie, MD; Omaha, NE
1987  William C. Mobley, MD; Davenport, IA
1986  Jeffery Wacksman, MD; Bonita Springs, FL
1985  * William S. Jasper Sr., MD; Meidna, OH
1984  * Gerald W. Koos, MD; Duluth, MN
1983  Riad N. Farah, MD; Detroit, MI
1982  Carl R. McKinley, MD; Minneapolis, MN
1981  Jerrold J. Widran, MD; Palm Desert, CA
1980  Paul R. Hartig, MD; Edina, MN
1979  *William S. Jasper Sr., MD; Middletown, OH
1978  Jack L. Summers, MD; Sun City Center, FL
1977  James J. Meyer, MD; Chanhassen, MN
1976  Everette J. Duthoy, MD; Naples, FL
1975  *Charles J. Cooney, MD; Fort Wayne, IN
1974  Stanley J. Antolak Jr., MD; Edina, MN
1972  Lorris M. Bowers, MD; Brimfield, IL
1970  *Emile Maltry Jr., MD; Fargo, ND
1969  Joseph A. Santiago, MD; Milwaukee, WI
1968  *Thomas C. Hall, MD; Traverse City, MI
1966  Sidney P. Hurwitz, MD; Milwaukee, WI
1965  *Bruce E. Linderholm, MD; Minneapolis, MN
1964  *Bernard J. Begley, MD; San Diego, CA
1963  *Julian B. Galvin, MD; Pepper Pike, OH

John D. Silbar Award Recipients
2017  Adam Calaway, MD; Indianapolis, IN
2016  Laura A. Bertrand, MD; Iowa City, IA
2015  Matthew A. Uhlman, MD, MBA; Iowa City, IA
2014  Adam Kadlec, MD; Elmhurst, IL
2013  Clinton D. Bahler, MD; Indianapolis, IN
2012  Henry M. Rosevear, MD; Iowa City, IA
2011  Crystal Dover, MD; Madison, WI
2010  Christina B. Ching, MD; Cleveland, OH
2009  Brian L. Gallagher, MD; West Des Moines, IA
2008  David C. Arend, MD; Sioux Falls, SD
2007  Lynn L. Woo, MD; S. Euclid, OH
2007  Saleem S. Zafar, MD; Toledo, OH
2006  Curtis Crylen, MD; Greeley, CO
2005  Steven R. Mindrup, MD; Marion, IA
2004  John C. Thomas, MD; Nashville, TN
2003  Dimitri D. Kuznetsov, MD; Port Townsend, WA
2002  W. Patrick Springhart, MD; Shreveport, LA
2001  Melody A. Denson, MD; Austin, TX
2000  Courtney M.P. Hollowell, MD; Chicago, IL
1999  Steven Elliott Kahan, MD; Portsmouth, NH
1999  Steven E. Kahan, MD, JD; Portsmouth, NH
1998  Daniel S. Elliott, MD; Rochester, MN
1997  Sheila K. Gemar, MD; Willmar, MN
1996  Cheryl T. Lee, MD; Ann Arbor, MI
1995  Jerald A. Hochstetler, MD; Goshen, IN
1994  Mark J. Waples, MD; Milwaukee, WI

Bizarre and Interesting Case Award Recipients
2017  Michael F. Atwell; Peoria, IL
2016  Samer W. Kirmiz; Grand Rapids, MI
2016  Aron Liaw, MD; San Francisco, CA
2015  Benjamin Carpenter, MD; Indianapolis, IN
2014  Matthew R. Fulton, MD; Royal Oak, MI
2013  Megan Bing, MD; Iowa City, IA
2012  Anish Shah, MD; Cincinnati, OH
2011  David Wenzler, MD; Royal Oak, MI
2010  Zachary Q. Posey, MD; Ferndale, MI
2009  Anthony J. Polcari, MD; Chicago, IL
2008  Christina B. Ching, MD; Cleveland, OH
Basic Science Poster Award Recipients

2017  Daniel Smith, MD; Minneapolis, MN
2017  Brian Van Le, MD, MA; Madison, WI
2016  John Roger Bell, MD; Madison, WI
2016  Naveen Kachroo, MD, PhD; Detroit, MI
2016  Thomas Tieu, MD; Springfield, IL
2016  Paholo G. Barbaglio Romo, MD, MPH; Ann Arbor, MI
2015  Khaled Shahrour, MD; Toledo, OH
2015  Jessica H. Hannick, MD; Chicago, IL
2015  Kristina L. Penniston, PhD, RD; Madison, WI
2015  Kenneth G. Nepple, MD; Iowa City, IA
2014  Grace B. Delos Santos, MD; Chicago, IL
2014  Kristin A. Greco, MD; Maywood, IL
2014  Ronney Abaza, MD, FACS; Dublin, OH
2014  Raman Unnikrishnan, MD; Cleveland, OH
2013  Kristin A. Greco, MD; Maywood, IL
2013  Ishai S. Ross, MD; Detroit, MI
2012  Devon Snow-Lisy, MD; Cleveland, OH
2012  Megan Schober, MD, PhD; Farmington Hills, MI
2012  Kristina L. Penniston, PhD, RD; Madison, WI
2011  Mitra De Cogain, MD; Rochester, MN
2011  Nathan A. Bockholt, MD; Coralville, IA
2011  Dae-Yun Kim, MD, PhD; Chicago, IL
2011  George R. Schade, MD; Ann Arbor, MI
2010  Eric A. Klein, MD; Cleveland, OH
2010  Robert E. Jackson, MD; Ypsilanti, MI
2010  Chad Reichard, BS; Chicago, IL
2010  Anthony J. Polcari, MD; Chicago, IL
2010  Kristina L. Penniston, PhD, RD; Madison, WI
2010  Srinivas Vourganti, MD; Cleveland, OH
2008  Helen Kuo, MD; Indianapolis, IN
2006  Brian L. Gallagher, MD; West Des Moines, IA
2005  W. Scott Webster, MD; Dallas, TX
2004  Ahmad H. Bani Hani, MD; Chadds Ford, PA
2003  David C. Miller, MD, MPH; Ann Arbor, MI
2002  Saleem S. Zafar, MD; Toledo, OH
2001  Louis S. Liou, MD, PhD; Cambridge, MA
2000  * Jong M. Choe, MD; Mount Vernon, OH

Clinical Science Poster Award Recipients

2017  Raevti Bole, MD, MA; Rochester, MD
2017  John Francis, MD; Cleveland, OH
2017  Victor Chen; Cleveland, OH
2017  Nikhil Gupta, MD; Columbus, OH
2017  Tariq A. Khemeees, MD; Columbus, OH
2017  Matthew D. Grimes, MD; Madison, WI
2017  Mohamed Hendawi, MD; Columbus, OH
2016 Luke L. Wang, BS; Detroit, MI
2016 Michael S. Borofsky, MD; Minneapolis, MN
2016 Kevin B. Ginsburg, MD; Royal Oak, MI
2016 Andrew Todd, MD; Columbus, OH
2016 Eric Kirshenbaum, MD; Chicago, IL
2016 Matthew J. Ziegelmann, MD; Rochester, MN
2015 Robert A. Gaertner, MD; Woodbury, MN
2015 Julia Fiuk, MD; Springfield, IL
2015 Melissa A. St. Aubin, MD; Milwaukee, WI
2015 Derek J. Lomas, MD; Rochester, MN
2015 Ahmad M. El-Arabi, BS; Milwaukee, WI
2015 Samay Jain, MD; Toledo, OH
2014 Timothy Durso, BS; Maywood, IL
2014 Sarah P. Psutka, MD; Rochester, MN
2014 Brian A. VanderBrink, MD; Cincinnati, OH
2013 Thomas A. Gardner, MD; Indianapolis, IN
2013 Kenneth M. Peters, MD; Royal Oak, MI
2013 Florian R. Schroek, MD, MS; Ann Arbor, MI
2013 Miriam Hadj-Moussa, MD; Ann Arbor, MI
2013 Daniel Miller, MD, MPH; Ann Arbor, MI
2013 Charles R. Powell II, MD; Indianapolis, IN
2012 Boyd R. Viers, MD; Rochester, MN
2012 Matthew Maurice, MD; Cleveland, OH
2012 Peter Stuhldreher, BS, MD; Cleveland, OH
2012 Joseph Zabell, MD; New Brighton, MN
2012 Conrad Tobert; Grand Rapids, MI
2011 Jason Hedges, MD, PhD; Portland, OR
2011 Simon Kim, MD, MPH; Rochester, MN
2011 Amit Patel, MD; Westmont, IL
2011 Sandip Prasad, MD, MPhil; Charleston, SC
2011 Frank J. Penna, MD; Birmingham, MI
2011 Christopher Mitchell, MD; Rochester, MN
2010 Jonathan Ellison, MD; Ann Arbor, MI
2010 Suzette E. Sutherland, MD; Plymouth, MN
2010 Clint K. Cary, MD; Indianapolis, IN
2010 K. Scott Coffield, MD; Temple, TX
2010 Eric Umbreit, MD; Rochester, MN
2010 Jeffery C. Wheat, MD; Ann Arbor, MI
2008 Joshua J. Meeks, MD, PhD; Chicago, IL
2008 Khanh Pham, MD; Milwaukee, WI
2008 Christopher J. Weight, MD; Rochester, MN
2008 Mark D. Stovsky, MD, MBA, FACS; Beachwood, OH
2006 Curtis Crylen, MD; Greeley, CO
2005 David S. Morris, MD; Hendersonville, TN
2004 James A. Kontak, MD; Cleveland, OH
2003 Peter Langenstroer, MD; Milwaukee, WI
2002 David A. Taub, MD, MBA; Toledo, OH
2001 Timothy L. Mulholland, MD; Mason City, IA
2000 Bradley C. Leibovich, MD; Rochester, MN

Resident Bowl Winners
2017 Derek Lomas, MD, PharmD; Rochester, MN
2017 Min Jun, DO; Ferndale, MI
2017 Kevin Ginsburg, MD; Royal Oak, MI
2017 Abhinav Khanna, MD; Cleveland, OH
2016 Katherine J. Cotter, MD; Minneapolis, MN
2016 Joseph Ford, MD; Walled Lake, MI
2016 Daniel S. Murtagh, MD; Toledo, OH
Joseph Rodriguez, MD; Chicago, IL
Luke R. Frederick, MD; Springfield, IL
Ian D. McLaren, MD; Ann Arbor, MI
Hanhan Li, MD; Detroit, MI
Luke Edwards, MD; Madison Heights, MI
Adam C. Calaway, MD; Indianapolis, IN
Adam S. Howe, MD; Columbus, OH
Scott C. Johnson, MD; Milwaukee, WI
Jessica R. Meyers, MD; Detroit, MI
Joseph J. Pariser, MD; Chicago, IL
Andrew C. Strine, MD; Indianapolis, IN
Gregory McLennan, MD; Royal Oak, MI
Casey A. Dauw, MD; Ann Arbor, MI
Abhishek Patel, MD; Columbus, OH
Casey Dauw, MD; Ann Arbor, MI
Matthew Fulton, MD; Royal Oak, MI
Matthew Johnson, MD, MS; Columbus, OH
Devon Snow-Lisy, MD; Cleveland, OH
Robert M. Kohut Jr., MD; Cleveland, OH
M. Adam Childs, MD; Rochester, MN
Aria Razmaria, MD; Chicago, IL
Ken Haberman, MD; Minneapolis, MN
Kiranpreet Khurana, MD; Cleveland, OH
Kyle Kiriluk, MD; Chicago, IL
Don T. Bui, MD; Troy, MI
Ty T. Higuchi, MD, PhD; Rochester, MN
Tarek Pacha, DO; Sterling Hts, MI
Paul R. Tonkin, MD; Milwaukee, WI
Edward Capoccia, MD; Chicago, IL
David Y. Yang, MD; Rochester, MN
Firas G. Petros, MD; Columbus, OH
Elizabeth V. Dray, MD; Maywood, IL
Thomas P. Frye, DO; Springfield, IL
Robert M. Kohut Jr.; MD; Cleveland, OH
Ken Haberman, MD; Minneapolis, MN
Jesse Sammon, DO; Detroit, MI
Christopher Mitchell; MD, Rochester, MN
Ronney Abaza, MD; Columbus, OH
Andrew Sun, MD; Cleveland, OH
Duncan R. Morhardt, MD, PhD; Ann Arbor, MI
Lindsey A. Herrell, MD, MS; Ann Arbor, MI
Chandy Ellimoottil, MD, MS; Chicago, IL
NCS Residency Programs

The North Central Section of the AUA, Inc. greatly appreciates the contributions made by the residents to the success of the annual meeting. This year 92 residents, representing 21 of the section’s 26 residency programs, will participate in the annual meeting.

**Case Western Reserve University (4)**
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Melody Chen, MD
Albert H. Kim, MD, PhD
Kirtishri Mishra, MD

**Cleveland Clinic Foundation (8)**
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Paurush Babbar, MD
Alice L. Crane, MD, PhD
Abhinav Khanna, MD, MPH
Michael Guy Rydberg, MD
Andrew Y. Sun, MD
Daniel Z. Sun, MD
Anna M. Zampini, MD, MBA

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Akshay Sood, MD
Philip Wong, MD
Grace Yaguchi, MD

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Ethan L. Ferguson, MD
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Naveen Krishnan
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Tanner Miest, MD, PhD
Vidit Sharma, MD
Mary Elizabeth Westerman, MD
Kevin Wymer, MD

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