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NOTE ADDED IN PROOF

Dear AUA Members and Readers,

At the time the AUA Board of Directors made the difficult decision to change AUA2021 from a hybrid meeting to a fully virtual one, AUANews was in its final issue proof format and ready to go to the printer. Instead of pulling all meeting-related content from this issue, I decided in my role as Editor-in-Chief to proceed with the publication of preview articles written by our original intended speakers. On behalf of the Board, I acknowledge their contributions to this meeting, the AUA, and the advancement of urology. I hope that you will all attend this virtual event and benefit from the premiere urological meeting in the world. Please check www.AUA2021.org often for important meeting updates. Thank you for your support and stay safe and well.

Sincerely,
Dr. John Denstedt, Editor-in-Chief, AUANews
INDICATIONS
ERLEADA® (apalutamide) is an androgen receptor inhibitor indicated for the treatment of patients with:
• Metastatic castration-sensitive prostate cancer (mCSPC)
• Non-metastatic castration-resistant prostate cancer (nmCRPC)

IMPORTANT SAFETY INFORMATION
WARNINGS AND PRECAUTIONS
Cerebrovascular and Ischemic Cardiovascular Events —
In a randomized study (SPARTAN) of patients with nmCRPC, ischemic cardiovascular events occurred in 4% of patients treated with ERLEADA® and 3% of patients treated with placebo. In a randomized study (TITAN) in patients with mCSPC, ischemic cardiovascular events occurred in 4% of patients treated with ERLEADA® and 2% of patients treated with placebo. Across the SPARTAN and TITAN studies, 5 patients (0.5%) treated with ERLEADA® and 2 patients (0.2%) treated with placebo died from an ischemic cardiovascular event. Patients with history of unstable angina, myocardial infarction, congestive heart failure, stroke, or transient ischemic attack within 6 months of randomization were excluded from the SPARTAN and TITAN studies. In the SPARTAN study, cerebrovascular events occurred in 4.7% of patients treated with ERLEADA® and 0.8% of patients treated with placebo. In the TITAN study, cerebrovascular events occurred in 7.9% of patients treated with ERLEADA® and 2.1% of patients treated with placebo. Across the SPARTAN and TITAN studies, 3 patients (0.2%) treated with ERLEADA®, and 2 patients (0.2%) treated with placebo died from a cerebrovascular event.

Cerebrovascular and ischemic cardiovascular events, including events leading to death, occurred in patients receiving ERLEADA®. Monitor for signs and symptoms of ischemic heart disease and cerebrovascular disorders. Optimize management of cardiovascular risk factors, such as hypertension, diabetes, or dyslipidemia. Consider discontinuation of ERLEADA® for Grade 3 and 4 events.

Fractures — In a randomized study (SPARTAN) of patients with nmCRPC, fractures occurred in 12% of patients treated with ERLEADA® and in 7% of patients treated with placebo. In a randomized study (TITAN) of patients with mCSPC, fractures occurred in 16% of patients treated with ERLEADA® compared with 9% of patients treated with placebo. Evaluate patients for fracture risk. Monitor and manage patients at risk for fractures according to established treatment guidelines and consider use of bone-targeted agents.

Falls — In a randomized study (SPARTAN), falls occurred in 16% of patients treated with ERLEADA® compared with 9% of patients treated with placebo. Falls were not associated with loss of consciousness or seizure. Falls occurred in patients receiving ERLEADA® with increased frequency in the elderly. Evaluate patients for fall risk.

Seizure — In two randomized studies (SPARTAN and TITAN), 5 patients (0.4%) treated with ERLEADA® and 1 patient treated with placebo (0.1%) experienced a seizure. Permanently discontinue ERLEADA® in patients who develop a seizure during treatment. It is unknown whether anti-epileptic medications will prevent seizures with ERLEADA®. Advise patients of the risk of developing a seizure while receiving ERLEADA® and of engaging in any activity where sudden loss of consciousness could cause harm to themselves or others.

Embryo-Fetal Toxicity — The safety and efficacy of ERLEADA® have not been established in females. Based on its mechanism of action, ERLEADA® can cause fetal harm and loss of pregnancy when administered to a pregnant female. Advise males with female partners of reproductive potential to use effective contraception when administered to a pregnant female. Advise males with female partners of reproductive potential to use effective contraception.

ADVERSE REACTIONS
The most common adverse reactions (≥10%) that occurred more frequently in the ERLEADA®-treated patients (≥2% vs placebo) from the randomized placebo-controlled clinical trials (TITAN and SPARTAN) were fatigue, arthralgia, rash, decreased appetite, fall, weight decreased, hypertension, hot flush, diarrhea, and fracture.

Laboratory Abnormalities — All Grades (Grade 3-4)
• Hematology — In the TITAN study: white blood cell decreased ERLEADA® 27% (0.4%), placebo 19% (0.6%). In the SPARTAN study: anemia ERLEADA® 70% (0.4%), placebo 64% (0.5%); leukopenia ERLEADA® 47% (0.3%), placebo 29% (0.0%); lymphopenia ERLEADA® 41% (2%), placebo 21% (2%)
• Chemistry — In the TITAN study: hypertriglyceridemia ERLEADA® 17% (3%), placebo 12% (2%). In the SPARTAN study: hypercholesterolemia ERLEADA® 76% (0.1%), placebo 46% (0%); hyperglycemia ERLEADA® 70% (2%), placebo 59% (1%); hyperparathyroidism ERLEADA® 67% (2%), placebo 45% (0.8%); hyperkalemia ERLEADA® 32% (2%), placebo 22% (0.5%)
Rash — In 2 randomized studies (SPARTAN and TITAN), rash was most commonly described as macular or maculopapular. Adverse reactions of rash were 26% with ERLEADA® vs 8% with placebo. Grade 3 rash (defined as covering >30% body surface area [BSA]) were reported with ERLEADA® treatment (6%) vs placebo (0.5%). The onset of rash occurred at a median of 83 days. Rash resolved in 78% of patients within a median of 78 days from onset of rash. Rash was commonly managed with oral antihistamines, topical corticosteroids, and 19% of patients received systemic corticosteroids. Dose reduction or dose interruption occurred in 14% and 28% of patients, respectively. Of the patients who had dose interruption, 59% experienced recurrence of rash upon reintroduction of ERLEADA®.

Hypothyroidism — In 2 randomized studies (SPARTAN and TITAN), hypothyroidism was reported for 8% of patients treated with ERLEADA® and 2% of patients treated with placebo based on assessments of thyroid-stimulating hormone (TSH) every 4 months. Elevated TSH occurred in 25% of patients treated with ERLEADA® and 7% of patients treated with placebo. The median onset was at the first scheduled assessment. There were no Grade 3 or 4 adverse reactions. Thyroid replacement therapy, when clinically indicated, should be initiated or dose-adjusted.

Effect of ERLEADA® on Other Drugs —
CYP3A4, CYP2C9, CYP2C19, and UGT Substrates — ERLEADA® is a strong inducer of CYP3A4 and CYP2C19, and a weak inducer of CYP2C9 in humans. Concomitant use of ERLEADA® with medications that are primarily metabolized by CYP3A4, CYP2C9, or CYP2C9 can result in lower exposure to these medications. Substitution for these medications is recommended when possible or evaluate for loss-of-activity if medication is continued. Concomitant administration of ERLEADA® with medications that are substrates of UDP-glucuronosyltransferase (UGT) can result in decreased exposure. Use caution if substrates of UGT must be co-administered with ERLEADA® and evaluate for loss of activity. P-gp, BCRP, or OATP1B1 Substrates — Apalutamide is a weak inducer of P-glycoprotein (P-gp), breast cancer resistance protein (BCRP), and organic anion transporting polypeptide 1B1 (OATP1B1) clinically. Concomitant use of ERLEADA® with medications that are substrates of P-gp, BCRP, or OATP1B1 can result in lower exposure of these medications. Use caution if substrates of P-gp, BCRP, or OATP1B1 must be co-administered with ERLEADA® and evaluate for loss of activity if medication is continued.

ADT = androgen deprivation therapy; AR = androgen receptor; CT = computed tomography; GnRH = gonadotropin-releasing hormone; HR = hazard ratio; mCSPC = metastatic castration-sensitive prostate cancer; mFS = metastasis-free survival; nmCRPC = non-metastatic castration-resistant prostate cancer; PSA = prostate-specific antigen; pFS = progression-free survival; rPFS = radiographic progression-free survival; SPARTAN = Selective Prostate Androgen Receptor Targeting with Apalutamide; TITAN = Targeted Investigational Treatment Analysis of Novel Androgen Transcripts.

ERLEADA® (apalutamide) tablets

ADVERSE REACTIONS

Metastatic Castration-Sensitive Prostate Cancer (mCSPC)

TITAN, a randomized (1:1), double-blind, placebo-controlled, multi-center clinical trial, which had mCSPC in this study, patients received either ERLEADA at a dose of 240 mg daily or placebo. At the time of the median duration of exposure was 12 months (range: 0.2 to 111 months) in patients who received ERLEADA and 18 months (range: 0.5 to 111 months) in patients who received placebo. Ten patients (2%) who were treated with ERLEADA died from adverse reactions. The reasons for death were ischemic cardiovascular events (4%), cerebrovascular accident (3%), sudden cardiac death (1%), respiratory failure (1%), and respiratory arrest as (n=1), sudden cardiac death (n=1), respiratory failure (n=1), cerebrovascular accident (n=1), and large intracranial hemorrhage (n=1). ERLEADA was discontinued due to adverse reactions in 8% of patients, most commonly from rash (2%). Adverse reactions leading to dose interruption or reduction of ERLEADA occurred in 23% of treated patients; the most frequent (>1%) were rash, fatigue, and hypertension. Serious adverse reactions occurred in 20% of ERLEADA-treated patients and 20% in patients receiving placebo.

Table 1 shows adverse reactions occurring in ≥10% on the ERLEADA arm that occurred with a ≥2% increase in frequency compared to placebo. Table 2 shows laboratory abnormalities that occurred in ≥10% of patients, and more frequently (>5%) in the ERLEADA arm compared to placebo.

Table 1: Adverse Reactions in TITAN (mCSPC)

<table>
<thead>
<tr>
<th>System/Organ Class</th>
<th>Adverse Reaction</th>
<th>ERLEADA (N=803)</th>
<th>Placebo (N=527)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>Rash</td>
<td>28</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Hyperpigmentation</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Nervous System</td>
<td>Dizziness</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 2: Laboratory Abnormalities Occurring in ≥15% of ERLEADA-Treated Patients and at a Higher Incidence than Placebo (Between Arm Difference >5% All Grades) in TITAN (mCSPC)

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
<th>ERLEADA (N=803)</th>
<th>Placebo (N=527)</th>
<th>Between Arm Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anemia</td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>Leukopenia</td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>Lymphopenia</td>
<td>41</td>
<td>2</td>
<td>39</td>
</tr>
<tr>
<td>Hypercalcemia</td>
<td>76</td>
<td>46</td>
<td>28</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>67</td>
<td>49</td>
<td>18</td>
</tr>
<tr>
<td>Hypophosphatemia</td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>Total Bilirubin</td>
<td>67</td>
<td>49</td>
<td>18</td>
</tr>
</tbody>
</table>

Breastfeeding

The safety and efficacy of ERLEADA have not been established in females. Based on its mechanism of action, ERLEADA can cause fetal harm and loss of pregnancy when administered to a pregnant female. Breastfeeding is not recommended for patients treated with ERLEADA. Advise females to avoid breast feeding during treatment. It is unknown whether anti-epileptic medications will prevent seizures with ERLEADA. Advise patients of the risk of developing a seizure during treatment and for 3 months after the last dose of ERLEADA (see Use in Specific Populations).

ADVERSE REACTIONS

The following are described in more detail in the sections below:

Cerebrovascular and Ischemic Cardiovascular Events

Table 3: Adverse Reactions in SPARTAN (nmCRPC) (continued)

<table>
<thead>
<tr>
<th>System/Organ Class</th>
<th>Adverse Reaction</th>
<th>ERLEADA (N=880)</th>
<th>Placebo (N=386)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nervous System</td>
<td>Dizziness</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4: Laboratory Abnormalities Occurring in ≥15% of ERLEADA-Treated Patients and at a Higher Incidence than Placebo (Between Arm Difference >5% All Grades) in SPARTAN (nmCRPC)

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
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</tr>
<tr>
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<td>41</td>
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<td>Hypophosphatemia</td>
<td>70</td>
<td>0</td>
<td>70</td>
</tr>
<tr>
<td>Total Bilirubin</td>
<td>67</td>
<td>49</td>
<td>18</td>
</tr>
</tbody>
</table>

Cerebrovascular and ischemic cardiovascular events, including serious and fatal events, have been reported with anti-epileptic medications, such as hypertension, diabetes, or dyslipidemia. Consider discontinuation of ERLEADA for Grade 3 and 4 reactions.

IN THE SPANISH study, cerebrovascular events occurred in 4.7% of patients treated with ERLEADA and 2.1% of patients treated with placebo (p=0.022). Across the SPARTAN and TITAN studies, 5 patients (0.5%) treated with ERLEADA, and 2 patients (0.2%) treated with placebo died from an ischemic cardiovascular event.

In a randomized study (SPARTAN) of patients with mCSPC, ischemic cardiovascular events occurred in 4% of patients treated with ERLEADA and 2% of patients treated with placebo. Patients with history of unstable angina, myocardial infarction, congestive heart failure, stroke, or transient ischemic attack within 6 months of randomization were excluded from the SPARTAN and TITAN studies.

In two randomized studies (SPARTAN and TITAN), five patients (0.4%) developed a seizure while receiving ERLEADA and of engaging in self-harm or violence towards self or others.

In the SPARTAN study, cerebrovascular events occurred in 4.7% of patients treated with ERLEADA and 2.1% of patients treated with placebo (p=0.022). Across the SPARTAN and TITAN studies, 5 patients (0.5%) treated with ERLEADA, and 2 patients (0.2%) treated with placebo died from a cerebrovascular event. Patients with a history of unstable angina, myocardial infarction, congestive heart failure, stroke, or transient ischemic attack within 6 months of randomization were excluded from the SPARTAN and TITAN studies.

Falls

Falls occurred in patients receiving ERLEADA with increased frequency (see Use in Specific Populations). Evaluate patients for fall risk.

In a randomized study (SPARTAN), falls occurred in 16% of patients treated with ERLEADA and 9% of patients treated with placebo. Falls were not associated with loss of consciousness or seizure.

Seizure

Seizure occurred in patients receiving ERLEADA. Perthe Common Terminology Criteria (CTCAE), the highest severity for these events is Grade 3. Includes rash, rash maculo-papular, rash generalized, urticaria, rash puritic, rash maculopapular, lesions on palms of hands or soles of feet, facial rash, pubic hair, pustulosis acneformis, acne fulminans, toxic epidermal necrolysis, drug eruption, skin exfoliation, genital rash, rash erythematous, stomatitis, drug eruption, drug eruption, follicular rash, blister, papule, papulopapular, skin erosion, dermatitis, and rash vesicular.

Additional adverse reactions of interest occurring in 2%, but less than 10% of patients treated with ERLEADA included diabetes (6% versus 3% on placebo), dysgeusia (3% versus 1% on placebo), and hypertension (4% versus 1% placebo).

In the TITAN study, cerebrovascular events (n=7), myocardial infarction (n=3), cerebrovascular accident (n=2), and ischemic cardiovascular events (n=1) occurred in patients with mCSPC, ischemic cardiovascular events occurred in 4% of patients treated with ERLEADA and 2% of patients treated with placebo. Patients with a history of unstable angina, myocardial infarction, congestive heart failure, stroke, or transient ischemic attack within 6 months of randomization were excluded from the SPARTAN and TITAN studies.

In a randomized study (SPARTAN) of patients with metastatic castration-sensitive prostate cancer, fractures occurred in 9% of patients treated with ERLEADA and in 6% of patients treated with placebo. Grade 3-4 fractures occurred in 3% of patients treated with ERLEADA and in 1% of patients treated with placebo. The median time to onset of fracture was 314 days (range: 28 to 953 days) for patients treated with ERLEADA. Routine bone density assessment and treatment of osteoporosis with bone-targeted agents were not performed in the SPARTAN study.

In a randomized study (SPARTAN), falls occurred in 16% of patients treated with ERLEADA and 9% of patients treated with placebo. Falls were not associated with loss of consciousness or seizure.

Embryo-Fetal Toxicity

The safety and efficacy of ERLEADA have not been established in females. Based on its mechanism of action, ERLEADA can cause fetal harm and loss of pregnancy when administered to a pregnant female. See Clinical Pharmacology (12.11). Advise males with female partners of reproductive potential to use effective contraceptive methods during and 3 months after the last dose of ERLEADA (see Use in Specific Populations).

Additional clinically significant adverse reactions occurring in ≥2% or more of patients treated with ERLEADA included hypothyroidism (8% versus 2% on placebo), pruritus (6% versus 2% on placebo), and heart failure (2% versus 1% on placebo).

In the combined data of two randomized, placebo-controlled clinical studies, SPARTAN and TITAN, rash, which associated with ERLEADA was most commonly described as maculopapular. Adverse reactions of rash were reported in 26% of patients treated with ERLEADA versus 8% of patients treated with placebo. Grade 3 rashes (defined as ≥30% body surface area involvement) were reported with ERLEADA treatment (6%) versus placebo (0.5%). The onset of rash occurred at a median of 83 days of ERLEADA treatment. Rash occurred in 14% of patients who received ERLEADA, with 9% of patients experiencing a new onset of rash. Rash was commonly managed with oral antihistamines, topical corticosteroids, and 10% of patients treated with oral antihistamines and topical corticosteroids. Rash dose reduction or dose interruption occurred in 14% and 28% of patients, respectively. Of the patients who had dose interruption, 39% experienced recurrence of rash upon reintroduction of ERLEADA.

In the combined data of two randomized, placebo-controlled clinical studies, SPARTAN and TITAN, hypertension was reported for 8% of patients treated with ERLEADA and 2% of patients treated with placebo based on assessments of thyroid-stimulating hormone (TSH) every 4 months. Elevated TSH occurred in 25% of patients treated with ERLEADA and 7% of patients treated with placebo. The median onset was at the first scheduled assessment. There were No Grade 3 or 4 adverse reactions. Thyroid replacement therapy was initiated in 5% of patients with ERLEADA. Thyroid replacement therapy, when clinically indicated, should be initiated or dose-adjusted (see Drug Interactions).
Surgical Rehearsals and Telementoring

Timothy C. Brand, MD, FACS
Baptist Health Care

As the prevalence of robotic assisted surgery has grown exponentially over the last 2 decades, there has been an opportunity to improve surgical quality utilizing surgical rehearsal and telementoring. The robotic platform lends itself very well to simulation and telementoring. This was not lost with the early developers of the da Vinci. Even as the da Vinci was in its earliest stages of development, virtual reality simulation development was occurring simultaneously. We explored the utility of surgical warm-up and found that surgeon performances on the da Vinci platform could be improved with a brief warm-up on a virtual reality simulator.

There are multiple validated curricula for simulation in robotic assisted surgery, but the Fundamentals of Robotic Surgery curriculum has undergone more rigorous testing than most. Even as the robotic surgical platform was in development for applications in military medicine, telepresence for mentoring was one of the key development requirements. The concept was that a surgical specialist at a fixed facility could advise the surgeon working in a remote and austere environment. Because of the videoscopic view with the robotic approach, this platform lends itself very well to telementoring. Further work has been done to expand the telementoring technology beyond 2-dimensional telestration using 3D "ghost" tools with 3D Instruments and 3D Hands. A recent white paper published by the American Urological Association explores opportunities in telesurgery. Some of the challenges associated with telementoring include financing, medicolegal considerations and cybersecurity.

Patient-specific simulation opportunities have been considered to be the "Holy Grail" of surgical simulation. One of the greatest advancements to that end has been using 3D printing to generate models for simulation events. Additionally, 3D reconstruction of imaging can be used at the surgeon console before and during a robotic surgical case using the Iris service from Intuitive. This augmented reality platform uses imaging to enhance presurgical planning. There have been too many times in our profession and in others where technological development and adoption of enhanced surgical techniques has outpaced the development of the educational and training opportunities that may improve safety and quality. We, as surgeons and educators, in collaboration with...
AUA TAKE 5

THE TOP 5 AUA HAPPENINGS THIS MONTH!

1. Have a colleague who isn’t a member of the AUA? New members can enjoy complimentary access to FULL membership benefits through the end of 2021 with payment of 2022 membership dues! Plus, YOU can qualify for prizes, rewards and recognition when you refer a colleague.

AUAnet.org/AUAGetMember

2. Stay updated on the latest research news. Subscribe to AUA Investigator, a digital newsletter that features the latest news and information impacting the urological research community.

AUAnet.org/Investigator

3. Explore the new digital version of AUANews! Read every article and search by topic and other key words, all from the comfort of your digital device! Also, look out for enhanced online AUANews content coming soon!

AUAnet.org/AUANews

4. Don’t lose access to the most valuable benefits package in urology. Renew your 2022 AUA membership today and stay connected to the world’s premier urologic association!

AUAnet.org/Renew

5. The Urology Care Foundation is accepting nominations for the 2022 Humanitarian Recognition Award designed to honor an individual who has made outstanding contributions to humanitarian efforts in improving urology patient care in underserved populations either within or outside of the U.S. Deadline for nominations: October 31, 2020.

UrologyHealth.org/Humanitarian
our industry partners and government funding agencies, must help ensure that adequate time and resources are devoted towards the development of training and simulation platforms that may accompany the adoption of these new technological developments.

Cystinuria is a defect in amino acid transport. Amino acids are typically filtered by the glomerulus and almost completely reabsorbed in the proximal tubule. In cystinuria, there is a defect in transport and reabsorption of dibasic amino acids including cystine, ornithine, lysine and arginine. However, it is the insolubility of cystine at physiological urinary pH that leads to calculus formation.

Cystinuria is rare with worldwide incidence of 1 in 7,000. This rate varies by region, as high as 1 in 2,000 in the UK and as low as 1 in 100,000 in Sweden. It occurs at 1 in 10,000 in the U.S. Cystinuria results in 1% of total stone formers and in 10% of pediatric formers. Patients have a 17% risk of chronic kidney disease with <5% advancing to end-stage renal disease. There is also an increased risk of developing hypertension in 29%–51% of patients.

Cystine is insoluble at acidic pH levels. Its solubility is 250 mg/L (pH of 7.0) and 500 mg/L (pH of 7.5). Cystinuria is an autosomal recessive disease linked to 2 genes, divided into 3 subgroups depending on the involved gene. Type A is a mutation in the SLC3A1 gene on chromosome 2. This gene encodes the heavy subunit of the renal amino acid transporter, LAT1, which is responsible for localizing the transporter to the plasma membrane. All Type A patients have increased urinary cystine and 94% form stones. Heterozygotes have normal levels of cystine excretion. Type B is a mutation in the SLC7A9 gene on chromosome 19 which encodes the light subunit of the renal amino acid transporter b0, +AT, comprising the catalytic transporting component. Homozygotes have similar penetrance to type A, while heterozygotes often have elevated cystine levels but rarely develop stones. Type AB cystinuria is rare with mutations in both genes. Type AB patients will have elevated cystine levels but rarely develop stones, with a frequency of 1.2%–4%.

There should be a high index of suspicion in patients who present with stones within the first 2 decades of life (80% of cases). An early morning urine analysis identifying hexagonal crystals occurs in 25% of cases and is pathognomonic. Definitive diagnosis is made with stone analysis and 24-hour urine collection. Historically, the cyanide-nitroprusside colorimetric test was used, displaying a purple color with cystine levels greater than 75 mg/L. However, it is rarely used for screening with a sensitivity of 72% and specificity of 95%.

The cornerstones of cystinuria therapy include hydration and urinary alkalization to lower concentration and increase solubility of cystine. Patients should be advised to increase fluid intake to produce greater than 3 L of urine per day, including adequate intake before bedtime. Urine neutral and alkalizing beverages, like mineral water, are recommended. A low sodium diet of less than 2 gm/day is recommended which decreases cystine excretion. Special attention should be paid to foods that are high in methionine, the source of urinary cystine. Patients should not reduce methionine to less than 1,200–1,400 mg/day. It is recommended to reduce animal protein to 1 gm/kg/day in adults, but not in children who are still growing.

While dietary modifications may alkalize urine, alkali agents are likely needed to adequately raise urinary pH. The first line therapy is potassium citrate, dosed at 60–80 mEq/day divided into 3–4 doses, titrating to a pH of 7–7.5. If the patient cannot tolerate potassium citrate, other alkali agents may be used like sodium bicarbonate; however, this may increase cystine excretion as well.

Chelating agents are third line options. Thiols compounds combine with cystine to form a more soluble disulfide complex. D-Penicillamine is a first-generation agent that...
A STEPWISE APPROACH TO TREATMENT OF CYSTINURIA
Continued from page 7

combines with cystine, forming a complex that is 50 times more soluble. However, it is poorly tolerated with up to 88% of patients experiencing significant side effects with a 70% discontinuation rate. These side effects include nausea, diarrhea, fever, nephrotic syndrome, myalgias, pancytopenia, zinc and copper deficiencies, and vitamin B6 deficiency with chronic use. Patients should have close monitoring of renal function, blood counts, liver function, and mineral levels.2

Alpha-mercaptospropionylglycine (A-MPG) is a second-generation agent that has a higher dissolution capacity than D-penicillamine with a similar yet better tolerated side effect profile. Of patients 20%–50% experience significant side-effects, and the discontinuation rate is half that of D-penicillamine.2,3,5 A-MPG dosing is 400–1,200 mg/day divided in 2–3 doses. A new enteric-coated formulation allows for a reduction in pills that can be taken without food.6 For pediatric patients, dosing is 20–40 mg/kg/day given in 2 doses.7 Routine follow-up is similar to that of D-penicillamine, and discontinuation of medication is necessary for worsening renal function.3,4,6

Since being Food and Drug Administration approved in 1988, A-MPG has been the mainstay for treatment of cystinuria. There are several clinical trials aimed at improving treatment options. Bucillamine is a third-generation thiol-binding agent approved in Asia for rheumatoid arthritis that has a lower side effect profile. Tolvaptan is a vasopressin antagonist, increases urine output to decrease urinary cystine concentrations. Alpha-lipoic acid is a supplement that increases cystine solubility in a Type A SLC3A1 knockout mouse model. The cystine inhibitor bis (N-methyltyperazide) has shown effectiveness in inhibiting stone formation in another SLC3A1 knockout study.7 While improvements in treatment have been slow since 1988, there is promise in these studies.

When counseling patients, quality of life should be continually assessed. Cystinurics have lower quality of life scores than the general population. However, these scores improve across all parameters when being treated with A-MPG.6 This not only highlights the importance of treatment, but also the long-term struggles these patients will face. It is imperative that providers remain cognizant of the challenges this population faces.

The management of cystinuria is challenging for both provider and patient. However, with increased hydration, alkali therapy, as well as thioles for those failing initial treatments, patients can reduce stone recurrence. Close followup with routine labs and 24-hour urine collections is necessary to optimally titrate these medications. With several clinical trials on the horizon, these patients should remain hopeful for increased treatment options to reduce future stone events.

JOURNAL BRIEFS: Urology Practice®

Sequencing of Renal Mass Biopsy and Percutaneous Ablation

Brian Shuch, MD
University of California Los Angeles
Annemarie Uhlig, MD
University Medical Center Goettingen


During the last few decades, technical advances in radiologic imaging and growing use of cross-sectional imaging have led to more frequent incidental detection of small renal masses, which in turn has led to stage migration. Now over half of the renal cancer diagnoses are made at stage cT1a and are therefore amenable to various treatment options.

Renal mass biopsy has traditionally been omitted from the management strategy for most urologists but has increased in recent years to now account for up to 15% of small renal masses.1 One area in which renal mass biopsy has continued to have a role is in the context of thermal ablation, which now is used as the primary management option in about 10% of cases.2 Most clinical guidelines support a renal mass biopsy in patients undergoing thermal ablation in order to determine histology to guide surveillance. However, most guidelines so far do not discuss the timing of the biopsy, whether it should be performed prior to an ablation with an office discussion, or in the same session as the lesion treatment during the thermal ablation itself.

A “one-size-fits all” approach may not be possible due to patient preference regarding treatment, challenges and costs associated with several procedures, and the frequent need to stop required medications with interventions. A staged renal mass biopsy approach could spare some patients unnecessary treatment, as treatment of a benign tumor may often be unnecessary. However, some patients wish to pursue treatment regardless of histology due to the uncertainty of surveillance and desire to avoid lifelong imaging. Despite improvement in histologic subtyping and the widespread availability of useful immunohistochemical stains, the unwillingness of many pathologists to call some indolent lesions benign further limits the role of pre-treatment biopsy guiding management based on histology in a subset of patients.

Understanding the safety of staged vs concomitant renal mass biopsy can inform clinicians on the optimal approach to individual patient care. While a second anesthetic could impact patient health and safety and post-biopsy bleeding can delay thermal ablation, there are some technical challenges with concomitant ablation that can influence safety as well. Bleeding prior to probe placement may obscure lesions, and occasionally a more limited biopsy is necessary due to navigating multiple pre-placed probes. Thus, it is not surprising that the rate of successful histologic diagnoses is reduced.3

In our analysis of the National Cancer Database,4 we set out to review utilization, trends and safety with staged vs concomitant renal mass biopsy with thermal ablation. While 46% of ablated tumors had a staged biopsy during the study period, there has been a noticeable shift in the field toward fewer concomitant biopsies in recent years.

Continued on page 9
Interestingly, age and comorbidity did not appear to significantly impact the biopsy approach, but what was associated was histology, size, laterality, insurance status and facility location (see table). The geographic practice patterns greatly differed, with staged renal biopsy approaches ranging from 37.5% to 70.7% depending on the location (see figure). While nearly half of the thermal ablations were performed in an outpatient setting, an increased number of concomitant biopsies required an inpatient stay (58.9% vs 41.1% for staged biopsy), which remained significant (OR=1.42, p <0.001) despite controlling for possible confounding factors. Unplanned readmissions were also more frequent with concomitant biopsy (2.5% vs 2.1%), which also remained a significant predictor in multivariable analyses (OR=1.55, p=0.022).

Helping clarify the uncertainty in this area, the most recent AUA 2021 guidelines published a new statement regarding biopsy and ablation. The panel reinforced the importance of obtaining tissue to guide surveillance. However, with this addition, the panel made more formal recommendations on timing and suggested the staged approach is preferred. With the level of evidence based only on “expert opinion,” the panel suggested that decisions on timing be made on an individualized basis. With very limited data in this area, our work may help inform health care providers to identify the optimal practice for their respective patients. However, further work should aim to assess overall cost and complications with both treatment strategies.

### Table. Multivariable logistic regression for predictors of concomitant renal mass biopsy

<table>
<thead>
<tr>
<th>T Levels</th>
<th>Multivariable OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Histology:</strong></td>
<td></td>
</tr>
<tr>
<td>Nonclear cell</td>
<td>1 (reference)</td>
</tr>
<tr>
<td>Clear cell</td>
<td>1.40 (1.26–1.56, p &lt;0.001)</td>
</tr>
<tr>
<td><strong>Cancer grade:</strong></td>
<td></td>
</tr>
<tr>
<td>High grade</td>
<td>1 (reference)</td>
</tr>
<tr>
<td>Low grade</td>
<td>0.98 (0.75–1.27, p=0.859)</td>
</tr>
<tr>
<td>Unknown</td>
<td>0.73 (0.56–0.94, p=0.017)</td>
</tr>
<tr>
<td><strong>Laterality:</strong></td>
<td></td>
</tr>
<tr>
<td>Left</td>
<td>1 (reference)</td>
</tr>
<tr>
<td>Right</td>
<td>1.14 (1.03–1.27, p=0.01)</td>
</tr>
<tr>
<td><strong>Mean tumor size (SD):</strong></td>
<td>0.99 (0.98–0.99, p &lt;0.001)</td>
</tr>
<tr>
<td><strong>Insurance:</strong></td>
<td></td>
</tr>
<tr>
<td>No private insurance</td>
<td>1 (reference)</td>
</tr>
<tr>
<td>Private insurance</td>
<td>1.14 (1.02–1.28, p=0.023)</td>
</tr>
<tr>
<td><strong>Facility location:</strong></td>
<td></td>
</tr>
<tr>
<td>East North Central</td>
<td>2.25 (1.79–2.83, p &lt;0.001)</td>
</tr>
<tr>
<td>East South Central</td>
<td>1.54 (1.03–2.32, p=0.037)</td>
</tr>
<tr>
<td>Facility location suppressed for age 0–39 years</td>
<td>2.53 (2.08–3.09, p &lt;0.001)</td>
</tr>
<tr>
<td>Mountain</td>
<td>2.19 (1.66–2.91, p &lt;0.001)</td>
</tr>
<tr>
<td>New England</td>
<td>0.66 (0.51–0.86, p=0.002)</td>
</tr>
<tr>
<td>Pacific</td>
<td>2.27 (1.86–2.77, p &lt;0.001)</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>2.58 (2.21–3.02, p &lt;0.001)</td>
</tr>
<tr>
<td>West North Central</td>
<td>1.54 (1.25–1.91, p &lt;0.001)</td>
</tr>
<tr>
<td>West South Central</td>
<td>2.75 (2.23–3.39, p &lt;0.001)</td>
</tr>
</tbody>
</table>

Global p values (Wald test): tumor grade p <0.001; facility location p <0.001.

**Effect of Diagnostic Biopsy Practice Location on Prostate Cancer Active Surveillance Reclassification: Canary PASS Cohort**

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Beth Israel Deaconess Medical Center  
Andrew A. Wagner, MD  
Beth Israel Deaconess Medical Center

During prostate cancer (PCa) active surveillance (AS), after the diagnostic (Dx) biopsy (Bx), a confirmatory biopsy (Bx1) is recommended within 1 to 2 years according to the AUA/ASTRO/SUO 2017 guidelines. Some investigators have suggested that when urologists encounter patients who are referred with biopsies performed outside their institutions, they consider immediate repeat biopsy. Other retrospective and single institutional studies have suggested that having a biopsy performed in the community predicted both volume and grade-related reclassification. We analyzed the Canary Prostate Cancer Active Surveillance (PASS) cohort to determine if patients who had DxBx at an off-site practice were at higher risk for reclassification than those having the DxBx at a PASS site.

Participants were prospectively enrolled at 10 academic institutions. We included patients with Gleason score 6 at DxBx, <34% positive biopsy cores and a Bx1 at a PASS site <2 years after diagnosis. We dichotomized our population based on DxBx location (on-PASS site vs off-PASS site) and used multivariable logistic regression to evaluate association with reclassification at Bx1 after controlling for possible confounders. We also compared rates of definitive PCA treatment by DxBx location.

Out of 1,648 participants in PASS, 906 met the eligibility criteria. Of 519 men who had off-site DxBx 102 (19.7%) had grade/volume reclassification, compared to 72 (18.6%) of 399 patients who had on-site DxBx. After controlling for potential confounders, location of DxBx was not associated with grade/volume reclassification (OR 0.68 [95% CI 0.28-1.48], p=0.251). Uropathological rereview occurred in approximately half (52%) of patients with an off-site DxBx and was not associated with grade reclassification. Participants with an off-site DxBx were more likely to elect definitive treatment than participants with an on-site DxBx (17% [range 14%-20%] vs 14% [10%-17%]) within 1 year after Bx1; p <0.01). In our prospective evaluation of active surveillance patients across 10 academic institutions, the clinical setting where the biopsy was performed was not associated with a difference in grade/volume reclassification on confirmatory biopsy. Moreover, if only grade reclassification was considered, location was still not associated with reclassification at confirmatory biopsy. To our knowledge, ours is the first multicenter study evaluating the reclassification rate as a function of biopsy location.

The PASS study, due to its multi-institutional design, involves many diagnosing urologists, making it generalizable to patients presenting with PCa to diverse practice settings. Therefore, treating physicians can feel comfortable continuing with a standard surveillance protocol regardless of where the initial biopsy was performed, avoiding unnecessary procedures, possible complications and extra costs.

The fact that we found no significant difference in reclassification rate according to the DxBx location likely suggests increased standardization of prostate biopsy techniques and pathology practice across sites, so differences are not as profound as previously reported. The AUA recommends 12-core systematic sampling for maximal detection of significant cancer and to decrease detection of nonsignificant cancer.

Other possible factors for increased consistency in biopsy grading include recent updates of grading include recent updates of the current paradigm of care, and thus our results remain important in the current paradigm of AS protocols. About half of our pathology reports were reread by genitourinary pathology teams at the respective PASS sites, which did not affect the overall reclassification rate, further suggesting that in our contemporary cohort, the outside pathology results did not influence reclassification rates. Although pathology guidelines may minimize this bias, only a central pathology review would completely eliminate this effect, and central pathology review of biopsies is an ongoing effort within the Canary program.

In conclusion, this evaluation of a large multicenter AS cohort suggests that diagnostic biopsy practice location was not associated with significant differences in grade/volume reclassification.

### Table. Logistic regression of grade/volume reclassification at Bx1 according to DxBx site, multivariable model

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>Lower 0.95</th>
<th>Upper 0.95</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DxBx off-site (reference: on-site for both)</td>
<td>1.25</td>
<td>0.87</td>
<td>1.8</td>
<td>0.239</td>
</tr>
<tr>
<td>% Dx pos cores, 10% increase</td>
<td>1.84</td>
<td>1.46</td>
<td>2.34</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Time between DxBx and Bx1 (yrs)</td>
<td>2.22</td>
<td>1.42</td>
<td>3.47</td>
<td>0.001</td>
</tr>
<tr>
<td>Body mass index</td>
<td>1.06</td>
<td>1.02</td>
<td>1.1</td>
<td>0.005</td>
</tr>
<tr>
<td>Prostate size</td>
<td>0.24</td>
<td>0.15</td>
<td>0.38</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prostate specific antigen at Bx1</td>
<td>1.82</td>
<td>1.23</td>
<td>2.76</td>
<td>0.004</td>
</tr>
<tr>
<td>Prostate specific antigen at DxBx</td>
<td>1.39</td>
<td>0.85</td>
<td>2.25</td>
<td>0.184</td>
</tr>
<tr>
<td>Age at DxBx</td>
<td>1.03</td>
<td>1.0</td>
<td>1.05</td>
<td>0.070</td>
</tr>
</tbody>
</table>

Continued on page 11
on confirmatory biopsy at academic institutions and should not impact confirmatory biopsy schedules.*


**Table.** Adverse events following prosthesis implantation

<table>
<thead>
<tr>
<th></th>
<th>Combined PP-AUS (%)</th>
<th>PP or AUS Alone (%)</th>
<th>p Value</th>
<th>PP Alone (%)</th>
<th>p Value</th>
<th>AUS Alone (%)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-Day emergency room</td>
<td>2.0</td>
<td>2.6</td>
<td>0.564</td>
<td>2.4</td>
<td>0.702</td>
<td>3.7</td>
<td>0.170</td>
</tr>
<tr>
<td>30-Day readmission</td>
<td>5.7</td>
<td>3.8</td>
<td>0.110</td>
<td>3.4</td>
<td>0.045</td>
<td>5.7</td>
<td>0.991</td>
</tr>
<tr>
<td>90-Day emergency room</td>
<td>4.9</td>
<td>4.1</td>
<td>0.539</td>
<td>3.7</td>
<td>0.336</td>
<td>6.1</td>
<td>0.438</td>
</tr>
<tr>
<td>90-Day readmission</td>
<td>13.9</td>
<td>7.2</td>
<td>0.000</td>
<td>6.5</td>
<td>0.000</td>
<td>11.1</td>
<td>0.179</td>
</tr>
<tr>
<td>90-Day device complications</td>
<td>6.1</td>
<td>3.4</td>
<td>0.021</td>
<td>3.1</td>
<td>0.006</td>
<td>5.3</td>
<td>0.569</td>
</tr>
<tr>
<td>Minor complications*</td>
<td>8.89</td>
<td>2.35</td>
<td>0.000</td>
<td>0.93</td>
<td>0.000</td>
<td>9.6</td>
<td>0.732</td>
</tr>
<tr>
<td>Major complications†</td>
<td>0.41</td>
<td>0.6</td>
<td>0.751</td>
<td>0.5</td>
<td>0.832</td>
<td>0.84</td>
<td>0.464</td>
</tr>
</tbody>
</table>

*Minor complications included urinary tract infection, wound complications, deep vein thrombosis and pneumonia.
†Major complications included sepsis, myocardial infarction, pulmonary embolus and stroke.

**Synchronous Artificial Urinary Sphincter and Penile Prosthesis Implantation: Short-Term Database Outcomes**

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Use of a penile prosthesis (PP) and artificial urinary sphincter (AUS) for treatment of post-prostatectomy erectile dysfunction (ED) and stress urinary incontinence (SUI) has been well demonstrated. However, there are conflicting reports in the limited literature regarding whether these procedures should be combined in 1 surgical setting or staged.1-2 We sought to evaluate the safety of performing these procedures in the same operative setting.8

Our study was a retrospective analysis using the Healthcare Cost and Utilization Project (HCUP) State Inpatient Database (SID) and State Ambulatory Surgery Database (SASD) for the states of California (2007-2011) and Florida (2009-2014). ICD-9-CM diagnosis and CPT codes were used to identify adult males who underwent both PP and AUS implantation. Of these, 245 underwent synchronous PP-AUS procedures were also associated with significantly higher rates of device complications within 90 days 6.1% vs 3.4%, p=0.021, and specifically had higher rates of minor complications 8.89% vs 2.35%, p <0.001) than those undergoing solitary PP or AUS placement. There was no difference between combined procedures and solitary procedures with regard to 30-day or 90-day ER visits. There was also no significant difference seen with regard to major complications.

Continued from page 10
An Objective Scoring Tool to Evaluate Surgical Dissection: Dissection Assessment for Robotic Technique

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Andrew J. Hung, MD
University of Southern California Institute of Urology


With increasing use of robotic surgery, there is a need to ensure that trainees are safely and efficiently learning the associated technical skills. Indeed, there is much room for improvement on this front: a recent report revealed that 61% of graduating urology residents do not feel confident performing a robotic radical prostatectomy.1 Competency assessment has been explored as a means to objectively and reproducibly evaluate surgical ability in the operating room. Such evaluation has implications that extend beyond the training of new surgeons, including a potential role as a credentialing mechanism.

Numerous tools have been developed to evaluate surgical competency, with urology at the forefront of development and implementation of these tools.2 Early robotics assessment tools focused on the evaluation of global skills, including surgical autonomy and the ability to operate the robotics controls.3 Newer tools have increased granularity to focus on specific procedures and even steps within a procedure.4,5 While these tools provide comprehensive feedback, they are narrow in scope. On the other hand, broadly applicable tools such as Global Evaluative Assessment of Robotic Skills, or GEARS, are not designed to provide comprehensive feedback on detailed surgical technique. In this study, we blended common features from previously established evaluation tools in order to create a detailed assessment of a fundamental surgical skill that is common to many procedures: tissue dissection. Dissection Assessment for Robotic Technique (DART) is designed to be both comprehensive and widely applicable.6

We began with the Delphi method to validate both structure and content of DART (see figure). After thorough vetting by a multispecialty panel of 14 expert robotic surgeons, a single element of the tool remained contentious; agreement could not be reached on use of a 3-point vs a 5-point scale. Those in favor of a 3-point scale argued that the tool would be more reproducible and standardized in practical use, while those in favor of the more traditional 5-point Likert scale believed that the increased options provided better opportunity to differentiate levels of skill. As consensus could not be reached, we elected to continue our evaluation with both scales.

Next, a group of 10 raters used DART to evaluate a total of 46 surgical videos split evenly between the pelvic lymph node and seminal vesicle dissection steps of robot-assisted radical prostatectomy. These videos were scored using 3-point and 5-point DART scales by both surgeon and nonsurgeon raters over the course of 3 rounds. We showed that the 3-point scale has greater interrater variability as compared with the 5-point scale and that these scales differentiate expert and novice surgeons equally as well. Due to the improved reliability and our analysis suggesting indistinguishable ability to differentiate levels of experience, we recommend use of the 3-point scale for future study.

In creation of this tool, our goal was to methodically demonstrate a robust and transparent validation process. We detailed interrater variability data over three rounds of video scoring with DART, which revealed a slight learning curve. After a 10-video “training round”, raters improved their agreement to a plateaued level. Additionally, we showed that no prior surgical training is required to use DART. Indeed, our nonsurgically trained raters showed better agreement as compared with their surgically trained counterparts.

DART, like other evaluation tools, is resource-intensive in that it requires time-consuming manual scoring of surgical video. As a means to circumvent the resource hurdles of technical skills assessment, crowdsourced evaluation has been trialed and shown to be comparable to scores provided by expert raters.7 However, widespread application of assessment tools in an educational or clinical setting may require automation. Machine learning applications in image processing have already shown promise toward automating skills assessment.8 Here, we rigorously evaluated DART to ensure a robust tool prior to engaging in computer vision experiments aimed toward automation.

DART is an objective and reproducible tool to evaluate tissue dissection, a foundational skillset applied across surgical procedures. We showed that this tool can be employed in a variety of surgical contexts and can effectively differentiate surgeon experience. Future work will seek to automate this tool.

References:
Axial Diameter is Superior to Volumetric Measurement in Predicting Ureteral Stone Passage

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Parth M. Patel, MD
Loyola University Medical Center

Patel PM, Kandabarow AM, Chen VC et al: Axial diameter is superior to volumetric measurement in predicting ureteral stone passage. Urol Pract 2021; 8: 571.

Stone size and location are considered among the strongest predictors of spontaneous stone passage, and these are typically determined by noncontrast computerized tomography imaging. While assessment of stone burden in this fashion is expeditious, this method does not take into account the variable and irregular geometric shapes of calculi, and inter-rater variability in the measurement of stone size remains problematic.1–3 This has led to interest in volumetric measurements using computerized tomography imaging as a more accurate and reproducible method of determining stone burden.4–6

Unfortunately, 3D modeling can be expensive, time-consuming, and cumbersome, thus signifying the importance of research evaluating the clinical impact of these models. Our group has been working to understand whether and how volumetric measurement can be used clinically, and has previously demonstrated its underlying role in predicting outcomes after percutaneous nephrolithotomy.7 The purpose of our study is to further investigate the utility of volumetric measurement in predicting the passage of symptomatic ureteral stones when compared to standard linear measurement.8

We used the iPlan® CMF Planning Software (Brainlab Technology, Munich, Germany) to reconstruct 3-dimensional (3D) stone models using axial slices of the stone. In brief, this time-intensive process requires that the user select each slice of interest within the entire computerized tomography stack and then draw a curvilinear line highlighting the entirety of the visible stone in each slice; once this is performed on all available slices, the software organizes it all into a 3D rendering (see figure). A total of 70 patients were included in the volumetric analysis, 37 (53%) of whom passed their stones.

We demonstrated that 2-dimensional linear measurement in the axial dimension was positively and significantly correlated with 3D stone volume, as has been previously reported.2 We found that if the stone’s axial size and location in the ureter are known, additional knowledge of stone volume does not improve the ability to predict stone passage. The converse, however, is not true, i.e., starting with the stone volume and location in the ureter does not make the stone’s axial diameter obsolete.

There were several limitations to this study. First, despite the availability of a large cohort of patients, only a representative sample could be analyzed with the volumetric software. Second, retrospective analysis means the information gathered from the volumetric software was not available to the provider during counseling. Prospective validation of our findings is required. Lastly, while multiple volumetric tools now exist, only 1 tool was explored in this study and it was used only in ureteral stones.

We believe that there is minimal, if any, utility for 3D measurement in the setting of symptomatic ureterolithiasis, as axial diameter offers a stronger predictive model of stone passage. Clinically, this suggests that providers continue to rely simply on a stone’s axial diameter when counseling patients with symptomatic ureteral stones regarding their probability of spontaneous passage.

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Prostate cancer is the most commonly diagnosed solid organ malignancy for men in the United States and remains the second leading cause of cancer deaths for this population. Clinical advancement through the advent of combination therapies has resulted in a renaissance in the entire landscape for clinicians caring for men with advanced prostate cancer (APC). While offering significant survival benefits, such therapeutic development also renders clinical decision making and the treatment environment itself increasingly complicated.

It is with such considerations in place that the American Urological Association collaborated with Pfizer Oncology to create the Steps to Success toolkit, the result of a process improvement project to study APC patient management and identify key practices to improve patient care coordination. The AUA and Pfizer Oncology jointly developed and fielded a survey of health care providers to assess current practice patterns in various care settings. Survey queries touched on areas including demographics, patient monitoring, practice management, and quality and data/analytics. The survey results provided valuable insight into current APC practice dynamics. While a number of best practices were recognized, areas of need were also identified and may serve as important focal points for future quality improvement efforts. Results of this survey can be found in figures 1 and 2.

Following analysis of survey results, best practices were explored through one-on-one interviews with survey participants. It is through this further qualitative research that the AUA identified 3 practice sites of varying size and patient demographics to serve as subjects of in-depth case studies presenting common elements that allowed each site to build their programs to successfully care for patients with APC:

- Arkansas Urology, Little Rock, Arkansas
- OU Health Stephenson Cancer Center, Oklahoma City, Oklahoma
- Tennessee Urology, Knoxville, Tennessee

The AUA and Pfizer Oncology would like to sincerely thank Michael S. Cookson, MD, MMHC; E. Scot Davis; Kelly L. Stratton, MD; and Sylvia Waters, RN for their participation in the case study series and the valuable discussion that aided in the development of this toolkit.

Figure 1.
While each of the sites participating in the case study series had unique aspects to their programs, they also shared common elements that allowed them to make significant and meaningful progress with APC patient care. Quality improvement is a continual process, and each of the programs highlighted in the case study series noted ongoing work on this front and recognized the importance of process review and implementation of change based on patient needs. Based on the experiences of the highlighted programs, several best practices emerged:

1. Start with leadership and a commitment to delivering high-quality, evidence-based care.
2. Establish a multidisciplinary care team and define roles and responsibilities of team members.
3. Identify and collect information on key measures of care and solicit patient feedback.
4. Incorporate supportive care as necessary to provide a holistic care model.
5. Provide education to patients and family members.
6. Use technology to support clinical work and patient care.

Implementation of the best practices identified in the case study series may look different for each APC clinic given constraints due to practice size, patient population and available resources; however, the examples provided may serve as beneficial starting points that can be tailored to the individual needs of each program. Many practices may find that they already possess important tools that can aid in quality improvement efforts. While there is no one-size-fits-all model for every program, the *Steps to Success* toolkit may serve as a valuable roadmap for others who are thinking about implementing an APC program or looking for guidance on how to improve the care of their patients.


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CASE REPORT

Misplaced Double-J® Stent into the Mediastinum: An Unusual Complication of Open Ureterolithotomy

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Manoj Kumar, MS, MCh
King George’s Medical University
Apul Goel, MS, MCh, DNB, MNAMS
King George’s Medical University

Double-J® stents (DJSs) are widely used in urology. However, they are not without complications like lower urinary tract symptoms, migration, fragmentation, encrustation, and “forgotten stent.”1,2 We encountered a rare situation where the DJS was improperly placed during open ureterolithotomy and extended into the mediastinum. We discuss the precautions to avoid misplacement.

An 85-year-old woman underwent right open ureterolithotomy for right upper ureteric calculus in another hospital. The calculus was removed uneventfully and a DJS was placed without fluoroscopy control. Patient had uneventful recovery. One month later when the DJS was planned for removal an X-ray of the kidney, ureters and bladder was performed. It showed mis-positioned DJS that extended into the chest. A computerized tomography (CT) scan of the chest and abdomen was performed to confirm the location of the DJS which showed right hydrourephrosis with the lower part of the DJS in the ureter and the upper part in the mediastinum (fig. 1). On retrograde pyelogram (RGP), the DJS was found completely outside the ureter (fig. 2). The DJS was removed by open surgical approach using subcostal flank incision (fig. 2).

A laparoscopic approach was not chosen due to surgeon preference and also because of potential risk of gas leakage into the mediastinum.3 Intraoperatively, the DJS was found in ureteral sheath outside the ureteral lumen. The mal-positioned stent was removed and replaced by a new DJS by performing a ureterotomy and ensuring correct placement. Her post-operative recovery was uneventful. The DJS was removed endoscopically after 2 weeks.

In endoscopic surgery, the stents are placed under endoscopic vision and fluoroscopic guidance and, therefore, the chances of dissection of the stent into ureteral sheath is rare.4 Ureteric stent placement during open or laparoscopic ureterolithotomy is challenging.5 Here, the stent has to be maneuvered both proximally and distally. Wrong placement can thus happen on both sides; mostly distally, as the proximal ureter is typically dilated.6 In this patient, the stent was wrongly placed while inserting both proximally and distally.

If the ureter at the site of ureterotomy is thick and edematous, the ureteral lumen may be difficult to identify, especially during open surgery that is often done without magnification (that is available with laparoscopy).3 The guidewire can, then, dissect into wrong tissue planes. This is what probably happened in this patient. Also, in open/laparoscopic procedures, DJSs are usually inserted without fluoroscopy assistance due to problems of maneuverability of the C-arm machine in the lateral position.

Various maneuvers have described for correct DJS placement after ureterolithotomy.6,9 The stent can be pre-placed under fluoroscopy.10 A method to confirm correct placement of the lower end of the DJS is to instill about 50 ml sterile methylene blue into the bladder through the Foley catheter and watch for efflux of blue urine through the side holes of the stent.11 Alternatively, the stent can be placed after stone removal by ureteroscopy7 or its position checked by flexible cystoscopy.3 DJS misplacement after open/laparoscopic ureterolithotomy is rare. Also, as DJS placement is considered a simple procedure it is often left to junior colleagues. However, it should be remembered that serious complications may happen due to incorrect placement. This patient had to undergo laparotomy for DJS removal. Proper precautions during stent placement can avoid such complications.7


Figure 1. CT scan showing upper part of DJS in mediastinum (1a), DJS passing behind liver (1b), right hydrourephrosis (1c), lower part of DJS in ureter (1d) and CT coronal view showing complete DJS (1e).

Figure 2. RGP showing DJS completely outside right ureter (2a–d) and intraoperative image (2e) showing DJS in ureteral sheath outside ureteral lumen (ureter looped by artery forcep).
MISPLACED DOUBLE-J® STENT INTO THE MEDIASTINUM

Continued from page 18


6. Marberger M: Ureterolithotomy. In: Glenn’s Urology Practice, ed perceptions, and the remaining cial aspects. Four questions evalu-

bers of the Societies for Pediatric Urology Perspective: results from a Survey of Members of the Societies for Pediatric Urology

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Neonatal Circumcision Trends from a Pediatric Urology Perspective: Results from a Survey of Members of the Societies for Pediatric Urology


Neonatal circumcision remains controversial, with rates varying over the years. Although more commonly performed by nonuro-

logical providers, pediatric urol-

ogists are often involved with pre-procedural or post-procedur-

al concerns. Currently there is no widely used educational tool and performance assessment for nonurological neonatal circumcission providers. Neonatal circumcision trends and perspectives were evaluated as determined by members of the Societies for Pediatric Urology (SPU) nationwide.

A 20-question survey was distributed electronically via Survey-

Monkey® to members of the SPU assessing circumcision practices, preclusions, technique and financial aspects. Four questions evaluated perceptions, and the remaining 16 formed the basis of the study.1 A total of 223 surveys (37.2%) were returned. The responders self-identified with one of 4 geographic regions, including 32.7% (73) from the South, 24.2% (54) from the Northeast, 23.3% (52) from the Midwest and 18.8% (42) from the West. Median test analysis revealed a greater number of responders from the South with 20 or more years of post-fellowship experience (46.6%) as compared to the Midwest, which had the largest number of responders with less than 5 years of post-fellowship experience (36.5%) and only 19.2% of responders denoting 20 or more years of experience (test statistic=11.126, df=3, p=0.01).2 Eighty percent of responders (177) perform neonatal circumcision. Of those who reported not performing neonatal circumcision, 38.6% (17) cite other practitioners in the practice performing, whereas 13.6% (6) noted office limitations and 9.1% (4) time constraints.3 A statistically significant difference exists between responders performing neonatal circumcision in the Northeast (87.0%) and the West (66.7%, p <0.05). Most individuals reported performing fewer than 5 neonatal circumcisions weekly (107, 79.5%). A total of 120 individuals (54.3%) see neonatal circumcisions for routine follow-up. Although overall an increase in circumcisions performed in the last 2-3 years was reported by 49.8%, prominent differences exist overall between geographic regions (chi-square=8.715, df=3, p=0.033). Fewer responders in the West reported neonatal circumcisions had increased (13, 33.33%) compared to the Northeast (32, 62.7%) and to the South (38, 53.3%; p <0.05).4 Most individuals surveyed use more than 1 circumcision method, with the Gomco® clamp being most common across all geographic regions. However, the Gomco clamp was found to be used by more respondents from the Midwest (40, 76%) than the West (23, 54.8%; p <0.05). The West has a greater prevalence of Plastibell® device use (15, 35%) than the Northeast (9, 16.7%; p <0.05). The largest proportion of responders using the Mogen clamp (Sklar®) were from the Northeast (12, 22.2%), significantly greater than responders from the South (3, 4.1%) and the West (1, 2.4%; p <0.05). Most of the responders indicated that circumcision technique did not vary due to penile size (168, 76%), age (122, 77.8%) or weight (180, 81.4%). Age limit for neonatal circumcision differed across regions (chi-square=34.712, df=21, p=0.30). Overall, 156 of the responders (70.6%) utilize an age limit that is 12 weeks or younger. Similarly, differences in weight limit for neonatal circumcisions were also found to be statistically significant by region (chi-square=31.443, df=18, p=0.026). Most commonly, weight was limited to less than 4.54 kg (56, 25.3%). Overall, a weight limit defined as 12 lbs (5.44 kg) or lighter was identified by 108 responders (48.9%). Of those individuals surveyed, most determined congenital buried penis to preclude neonatal circumcision (155, 70.8%), with 19.6% (43) reporting that this does not preclude neonatal circumcision. Medicaid coverage of neonatal circumcision was significantly different between regions (chi-square=22.214, df=6, p=0.001). Medicaid coverage for circumcision in labor and delivery as well as the neonatal unit was reported by 138 responders (82.1%). However, others reported Medicaid covered only neonatal unit circumcisions (20, 11.0%) or labor and delivery circumcisions (10, 6.0%). Most responders (90, 52%) reported charging greater than $300 for a noncovered neonatal circumcision.1 This study suggests that various statistically significant differences exist in circumcision practice across geographic regions, including patient demographic qualifiers and procedure technique. Presently, there is not a single, uniform education and training program for best neonatal circumcision practices implemented nationally. However, our study provides valuable information on age and weight criteria among pediatric urologists nationwide that can be used in the education of nonurology providers. Similarly, the widespread use of the Gomco device and Plasti-
bell, with limited use of the Mogen clamp, would support education of nonurology providers with use of Gomco and Plasti
bell. Furthermore, as most responders (70.8%) reported that congenital buried penis is a contraindication to circumcision, we believe that nonurological providers of neonatal circumcision should be trained to assess for congenital buried penis. As leaders in the field, it would be ideal for pediatric urologists to establish guidelines for evaluation of neonatal circumcision in infants, and to develop education
al tools and performance assessments for nonurological providers performing this procedure. Studies

ACIÓN

Continued on page 20
RADIOLOGY CORNER

Exsanguination during Nephroureteral Catheter Exchange

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A 62-year-old female presented with a medical history of cervical cancer complicated by radiation cystitis, status post-cystectomy and ileal conduit, further complicated by ureteral strictures bilaterally. The patient, who had been managed with long-term bilateral upside-down percutaneous nephrostomy tubes (PCNs), presented with 3 days of crampy left lower back pain with radiation to the left lower abdomen, no modifying factors and decreased urine output. Patient stated that this pain felt similar to when the PCN was blocked. Her previous PCNU replacement was 1 month earlier.

She was admitted to the hospital due to oliguria and acute renal failure; her blood urea nitrogen (BUN)/creatinine (Cr) ratio was 46/6.1. Interventional radiology (IR) was consulted and a standard upside-down PCN exchange was planned. During removal of the right-sided PCN over a wire, massive hemorrhage and passage of a clot occurred through the urostomy site. What would be your next step? (“Remember, at a cardiac arrest the first procedure is to take your own pulse”—Samuel Shem, The House of God).

The patient became tachycardic and hypotensive, fluid boluses were administered and concommitantly the PCN was immediately replaced. This is the second case of this presentation we have observed. The previous case occurred during a routine stent exchange in a patient with a history of pelvic radiation and ureteral strictures.

At this point, an angiogram was performed using right femoral access via a 7Fr sheath. The right upside nephrostomy was then removed, resulting in hemorrhage from the ileal conduit ostomy site.

NEONATAL CIRCUMCISION TRENDS FROM A PEDIATRIC UROLOGY PERSPECTIVE

have evaluated the impact of formalized training modules on physicians performing circumcisions, demonstrating a beneficial impact on clinical outcomes and improved circumcision care.2–4 Our results demonstrate that most of the responding pediatric urologists are comfortable performing circumcisions in male infants less than 12 weeks of age and less than 12 lbs (5.44 kg) in weight in the absence of a congenital buried penis. We believe this information is useful in the education of neonatal circumcision providers, and may warrant establishment of formalized criteria for best practice of neonatal circumcision.


UROLOGY CARE FOUNDATION
HUMANITARIAN AWARD

Call for Nominations

Do you know an extraordinary humanitarian who is serving patients affected by urologic conditions and diseases?

The Urology Care Foundation has launched a Humanitarian Award designed to honor someone who has made significant and outstanding contributions to humanitarian urologic efforts in improving patient care.

Deadline for nominations is October 31, 2021.

Learn more about our recognition award and meet the 2021 winner, Dr. Catherine deVries.

UrologyHealth.org/Humanitarian
Figure 1. Over-the-wire angiogram demonstrates significant extravasation (red arrow) from right common iliac artery (white arrow) into ileal conduit (pink arrow) on removal of right-sided PCNU (blue arrow). Left PCNU is still in place (black arrow).

Figure 2. Final angiogram shows stent in place (black arrow) with no extravasation into ileal conduit (red arrow).

again (fig. 1). An over-the-wire angiogram demonstrated active extravasation from the right common iliac artery into the right ureter. The diagnosis was erosion of the chronic indwelling nephrostomy into the right common iliac artery. A VBX balloon expandable covered stent (Gore® Medical) was deployed at the right common iliac artery, and the final angiogram demonstrated no active extravasation into the ileal conduit (fig. 2). The patient was transferred to the medical intensive care unit (MICU) in stable condition.

Patients who undergo cystectomy require a urinary diversion, which is often via an ileal conduit.1 As many as 15% of patients develop strictures at the ureteroenteric junction, resulting in obstruction to urinary outflow and hydronephrosis.2 In these cases, the kidney is typically decompressed antegrade via percutaneous nephrostomy placement, which may then be replaced by a retrograde percutaneous nephroureteral catheter (PCNU).3 PCNUs are associated with complications, most commonly occlusion, which result in frequent exchanges.

The etiology for iliac arterial injury can be multifactorial and diagnosed as well as treated during angiography. Uretero-iliac arterial fistula is a unique presentation of iliac arterial injury, although it can be treated in a similar manner to other etiologies with exclusion of the fistula via covered stent deployment.4 Endovascular iliac artery stent graft deployment has a high efficacy and primary patency for treating iliac injury, although long-term data have not been recorded in the setting of uretero-iliac arterial fistulas given the limited sample size.5

Teaching Points

Long-term PCNU may result in uretero-iliac arterial fistula, which may not be evident until the PCNU is removed or exchanged. If hemorrhage occurs during PCNU replacement, immediately replace the tube to tamponade bleeding and consult interventional radiology for an emergency angiogram with possible covered stent placement or embolization to prevent life threatening hemorrhage.


Initial treatment of overactive bladder (OAB) consists of behavioral modifications followed by pharmacological therapy including anticholinergics and beta-3 adrenergic agonists. While these 2 classes of medication have demonstrated similar efficacies, anticholinergics have been associated with a poorer tolerability due to side effects including dry mouth, constipation and cognitive impairment. Importantly, recent studies have highlighted the increased association of dementia with anticholinergic usage, particularly for less selective anticholinergics such as oxybutynin and tolterodine, and encouraged avoidance of anticholinergics especially in the elderly population. In 2012, mirabegron was the first U.S. Food and Drug Administration approved beta-3 adrenergic receptor agonist to be developed for treatment of OAB. Beta-3 agonists have demonstrated similar efficacy to antimuscarinics in managing OAB symptoms but are associated with few side effects and carry an excellent safety profile.

In our study, the Medicare Part D database from 2013 to 2017 was used to trend the number of prescriptions made for different OAB medications over time. Our hypothesis was that less selective anticholinergics such as oxybutynin would decrease in usage while mirabegron would increase given its lack of anticholinergic side effects. The CMS (Centers for Medicare and Medicaid Services) Medicare Provider Utilization and Payment Data: Part D Prescriber Public Use File Database was used to extract information regarding prescriptions made by providers that were paid under the Medicare Part D Prescription Drug Program from 2013 to 2017. This database contains National Provider Identifier, provider name, specialty, generic drug name, prescription claim count, prescription claim count for patients whose age is 65 or older and total drug cost. OAB medications were identified by their generic drug name and included oxybutynin, tolterodine, trospium, darifenacin, solifenacin, fesoterodine and mirabegron. For each type of provider, the total number of claims and total expenditure of each OAB medication was calculated and compared between each year.

From 2013 to 2017, the number of OAB medication-prescribing providers increased from 124,702 (8,476 urologists and 116,226 non-urologists) to 131,474 (8,705 urologists and 122,769 non-urologists). In 2013, a total of 7,688,033 claims made for OAB medications. Whereas oxybutynin comprised 51.7% of these claims (3,978,380; fig. 1), mirabegron was one of the least prescribed medication comprising only 1.8% of claims (140,401). In 2017, the number of OAB medication claims increased to 8,817,780. Oxybutynin remained the most prescribed OAB medication, comprising 53.9% of all claims (4,754,643). There was a linear increase of mirabegron claims each year, and by 2017 it was the second most prescribed OAB medication with 18.3% of claims (1,617,439). Solifenacin was the second most prescribed medication in 2013, but its usage decreased each year. Trospium, darifenacin and fesoterodine were consistently among the least prescribed OAB medications each year. These trends did not change across census regions or when accounting for patients ≥65 years old. In 2017, 50.8% of claims were for oxybutynin in patients who were ≥65 years old. Urologists alone displayed similar trends but used a lower proportion of oxybutynin. By 2017, urologists made 934,498 and 649,703 claims to rise. Interestingly, more selective anticholinergics were among the lesser used options. Possible reasons for this finding include routine prescribing of familiar medications and insurance companies requiring a trial of anticholinergics prior to authorization of mirabegron. As cognitive effects of anticholinergics can lead to hospitalization and higher health care costs, it is important to curb usage of less selective anticholinergics in

Continued on page 23
the elderly. Possible interventions to curb prescribing of nonselective antimuscarinics like oxybutynin include revision of insurance company policies limiting accessibility of beta-3 agonists and selective antimuscarinics and educational programming for primary care physicians and patients led by urologists, advocacy groups, or interdisciplinary taskforce groups regarding antimuscarinic side effects. Additionally, future studies should investigate trends in private insurance databases and the association of each antimuscarinic separately with cognitive side effects as newer, more selective agents may be safer options in elderly patients.  


**JOURNAL BRIEFS: Urology Practice®**

### Advanced Practice Provider-Led Active Surveillance Clinic for Men with Prostate Cancer

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With the workforce of urologists projected to decrease over the next 20 years, the addition of advanced practice providers (APPs), including nurse practitioners and physician assistants, is vital to meet urological care needs.1 As of 2019, 93% of academic urologists and 63% of private practice urologists were estimated to work alongside APPs.2 The majority of APPs practice within ambulatory urology clinic settings, but there has been a large increase in their performance of office procedures; based on Medicare claims, APPs perform up to 0.57% of all transrectal ultrasound (TRUS)-guided biopsies.3,4 Recognizing that APPs can acquire the skill set to manage urology patients and perform prostate biopsies, implementation of APP-led active surveillance (AS) clinics is a key priority for private practice groups and academic centers. However, it is important to establish that APP-led AS care meets appropriate quality standards in clinical practice.

In 2016, we established an AS clinic managed by APPs to extend our ability to deliver quality care to an increasing population of patients meeting AS criteria. After an initial comprehensive evaluation by the attending physician, patients with Grade Group 1 or 2 disease and no other high-risk features are offered enrollment into the APP AS program. They then follow an institutional AS protocol, which includes prostate specific antigen (PSA) testing and digital rectal examination (DRE) every 6 months, multiparametric magnetic resonance imaging (MRI) of the prostate every 18 months and a prostate biopsy every 3 years.2 Changes in PSA or prostate MRI findings can prompt biopsy earlier than scheduled within the protocol.

Our APPs undergo a structured training program taught by the leader of the program (BE). In addition to precepting clinical visits, learning to implement the institutional AS protocol and instruction on communication skills to discuss disease risk, procedural training is also required. A minimum of 10 supervised template TRUS-guided biopsies must be satisfactorily performed before the APP concludes his or her training. To acquire the skills to perform independent MRI-targeted prostate biopsies, additional direct supervision is needed, and this specific training is typically accomplished within 6 months. Once APP training is completed, APPs provide independent care for their patients, including standard systematic and MRI-targeted prostate biopsies. Cases are reviewed as needed with the physician supervising the program (BE).

In order to evaluate the quality standards of an APP-led clinic, we sought to compare adherence to scheduled appointments and rate of prostate biopsy complications between APPs and urologists.4 We hypothesized that if patients were uncomfortable with an APP visit or dissatisfied with their prior visit, they were less likely to adhere to appointments scheduled with an APP. Furthermore, we evaluated the safety of prostate biopsy by evaluating prostate biopsy complications. Our second aim was to determine whether biopsy complications while on AS differed based on the type of provider performing the biopsy (APP or urologist). We defined complications associated with prostate biopsy as any infectious complication (including any visit to the urgent care center or admission to the hospital that had an associated urine culture taken), bleeding, or urinary retention within 30 days of biopsy.

Our first analysis included 10,350 visits from 2,341 patients; of these visits, 8,537 were with an attending urologist and 1,813 were with an APP. There was a total of 721 canceled or no-show visits, 159 (8.8%) with an APP and 562 (6.6%) with an attending urologist. While these results were statistically significant, the effect was small; for every 41 patients seen by an APP rather than an attending urologist, 1 patient would cancel as a result. Our second analysis assessed biopsy complications, comprising 1,578 biopsies performed in 1,333 patients. Among those biopsies, there were 29 complications: 23 infections, 3 urinary retention complications and 3 bleeding complications. Only 1 patient treated by an APP had a complication.

As health care delivery evolves, there is increasing emphasis on a shared delivery model that efficiently uses all members of the health care team. Within urology, this includes integrating APPs with prostate biopsy as any infectious complication (including any visit to the urgent care center or admission to the hospital that had an associated urine culture taken), bleeding, or urinary retention within 30 days of biopsy.

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ADVANCED PRACTICE PROVIDER-LED ACTIVE SURVEILLANCE CLINIC FOR MEN WITH PROSTATE CANCER

Continued from page 23

into AS management, an important urological care need. While there was a small but statistically significant increase in no-show appointments for APP visits, this was estimated to be a difference of only approximately 1 patient every 2 clinic days. We found no evidence of increased complication rates in prostate biopsies performed by APPs. These data are especially important, given the substantial increase in APPs performing prostate biopsies in the last decade.¹ We have demonstrated acceptable real-world performance in 2 important areas to support adoption of APPs managing active surveillance. ²


JOURNAL BRIEFS: Urology Practice®

Urology Shared Medical Appointments

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Patient quotes about SMAs:

“I appreciate the team here at MSK. The shared medical appointment was helpful because we got answers to questions we didn’t know enough of to ask. I know I was not alone but now I feel part of a community.”

“A benefit was hearing from the doctor in more than just a minimum appointment period. Hearing him gave me confidence in him again and I felt I had a relationship with him.”

Imagine each patient having an hour with their urologist rather than just 15 minutes. This is now possible for certain urology visits though the use of an innovative clinic systems redesign called “Shared Medical Appointments” (SMAs), a concept first introduced by Dr. Edward B. Noffsinger at Kaiser Permanente, in which multiple patients are seen in a group format for their follow-up visits.¹ At our institution, Memorial Sloan Kettering Cancer Center (MSK), we have a large active surveillance clinic; more than 90% of our patients with low-risk prostate cancer choose active surveillance.

Ensuring in-depth discussions and high-quality patient care for our patients is a challenge if only a few minutes of the urologist’s time is allotted in a traditional individual medical appointment, including time for physical examination, renewing prescriptions, discussing the management plan, answering questions and addressing patients’ concerns.

To accommodate for the rapidly increasing patient volume and growing number of followup visits and to guarantee high-quality cancer care for our patients, we sat down in the health care team to discuss methods to address patients’ needs and ensure that they feel cared for in our active surveillance program. Against this background we initiated a quality improvement project, as recently published and described in detail in Urology Practice®, where we launched the concept of SMAs for active surveillance followup visits, led by a urologist (B.E.) and his health care team.² Our SMAs included patient education, a common clinical management discussion with documentation in real time, support from the health care team and social support from peers, as well as one-on-one physical examination. Caregivers were welcomed to attend these appointments as well. SMAs have been used for a long time in chronic disease management such as diabetes, but its use in urology has been limited to a few settings, for example, kidney stones, post-prostatectomy/cystectomy, overactive bladder, erectile dysfunction and elevated prostate specific antigen (PSA).³⁻⁴

We ran 4 SMAs during 2019 (3×6 patients and 1×8 patients). We did not break any bad news during the SMAs. Before inviting patients to a SMA, we screened the patients’ medical charts and pathology reports; anyone who had progressed to higher grade disease would instead be recommended individual appointments as usual. SMAs took place in a conference room conducive to group discussion: a bright room with a central table and with patients facing each other and the urologist. One-on-one physical exams (digital rectal examination) took place in separate exam rooms in the urology clinic. Each SMA lasted for about 71 minutes in total.

The feedback from patients was very positive. Most patients rated their satisfaction with the SMA as extremely high, and almost all said that they would attend another SMA in the future. These findings are in line with a prior study by Jones at al that found that 4 out of 5 patients attending a urology SMA rated their experience as excellent and opted for another SMA.³ Furthermore, all our SMA patients said that they would recommend this visit type to a friend or family member with prostate cancer. The group dynamic was open and pleasant; patients had no difficulties with sharing personal information and felt comfortable to ask sensitive questions about urinary and sexual function in the group setting. Hearing similar stories from other patients was felt to be educational, helped answer questions and validated patients’ own experiences. Patients also appreciated having more time with the urologist, which improved the sense of trust in their provider.

In summary, our promising initial experience supports a role for SMA for active surveillance follow-up visits. Our report suggests that this model of care can ensure patient satisfaction and improve the contact time for individual patients (eg 1 hour vs 15 minutes) while being time-efficient and reducing resource utilization for the health care providers (eg 8 visits/hour instead of 8 visits/2 hours) and using the standard billing processes. Pending additional larger-scale reports and experiences, in the future SMAs could be expanded to a wide variety of settings in urological care and survivorship and may include telemedicine SMAs. ⁵

Safety and efficacy of Natesto in men with “age-related hypogonadism” for conditions associated with a deficiency or absence of gonadal function have not been established.

Natesto is indicated for replacement therapy in adult males with hypogonadotropic hypogonadism (congenital or acquired), or hypogonadism due to a deficiency or absence of the hypothalamic-pituitary-gonadal (HPG) axis.

- **Cardiovascular Risk:** Long-term clinical safety trials have not been conducted to assess the cardiovascular outcomes of testosterone replacement therapy in men. Some studies, however, suggest that testosterone replacement may increase low-density lipoprotein cholesterol and decrease high-density lipoprotein cholesterol concentrations, with an associated increase in atherogenic lipoprotein ratios.

- **Venous Thromboembolism:** Increases in hematocrit reflective of increases in serum testosterone concentrations and gonadotropins (follicle-stimulating hormone [FSH], luteinizing hormone [LH]) have been reported in male patients with androgen replacement therapy or anabolic-androgenic steroid use. Testosterone transfers into human milk, Natesto is not indicated for use in women.

- **Hypogonadotropic Hypogonadism:** Congenital or acquired, gonadotropin-releasing hormone deficiency or pituitary hypogonadism, may be caused by anomalies in the normal hypothalamic-pituitary gonadal axis or following surgical or radiotherapy intervention.

- **Hypothalamic-pituitary-gonadal (HPG) axis:** The HPG axis is a complex system that regulates the production of testosterone and other hormones. The hypothalamus secretes gonadotropin-releasing hormone, which stimulates the pituitary gland to release FSH and LH. These hormones then stimulate the testes to produce testosterone.

- **Testosterone Replacement Therapy (TRT):** Testosterone replacement therapy is used to treat men with hypogonadism (low testosterone levels). TRT is typically used to relieve symptoms of low testosterone, such as fatigue, decreased muscle mass, and decreased sex drive.

- **Testosterone Concentrations:** Serum total testosterone concentrations have not been established in pediatric patients less than 18 years of age. Testosterone is teratogenic and may cause fetal harm. Exposure of a fetus to androgens may result in varying degrees of virilization. If a pregnant woman is exposed to Natesto, she should be apprised of the potential hazard to fetus or nursing infant to androgens may result in varying degrees of virilization. Testosterone transfers into human milk.

- **Natesto Treatment During the 90-day Extension Period:** In the extension period, the most common adverse reactions (incidence ≥3%) in all subjects (n=306) who received Natesto at any dose during the 90-day extension period, were as follows: rash (6.8%), nose (5.8%), epistaxis (5.8%), and nausea (5.8%). In men receiving Natesto for worsening signs and symptoms of lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH), the most common adverse reactions included in the extension period were: LUTS (15.0%), parosmia (5.8%), nasal discomfort (5.8%), epistaxis (5.8%).

- **Male-pattern baldness:** Androgen withdrawal can also cause male-pattern baldness, a condition marked by the progressive thinning of hair on the top and sides of the head. The balding process is often more noticeable in areas that are more susceptible to androgenic influence, such as the crown and temples.

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- **Testosterone Replacement Therapy (TRT):** Testosterone replacement therapy is used to treat men with hypogonadism (low testosterone levels). TRT is typically used to relieve symptoms of low testosterone, such as fatigue, decreased muscle mass, and decreased sex drive.

- **Testosterone Concentrations:** Serum total testosterone concentrations have not been established in pediatric patients less than 18 years of age. Testosterone is teratogenic and may cause fetal harm. Exposure of a fetus to androgens may result in varying degrees of virilization. Testosterone transfers into human milk, Natesto is not indicated for use in women.

- **Natesto Treatment During the 90-day Extension Period:** In the extension period, the most common adverse reactions (incidence ≥3%) in all subjects (n=306) who received Natesto at any dose during the 90-day extension period, were as follows: rash (6.8%), nose (5.8%), epistaxis (5.8%), and nausea (5.8%). In men receiving Natesto for worsening signs and symptoms of lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH), the most common adverse reactions included in the extension period were: LUTS (15.0%), parosmia (5.8%), nasal discomfort (5.8%), epistaxis (5.8%).

- **Male-pattern baldness:** Androgen withdrawal can also cause male-pattern baldness, a condition marked by the progressive thinning of hair on the top and sides of the head. The balding process is often more noticeable in areas that are more susceptible to androgenic influence, such as the crown and temples.

- **Hypogonadotropic hypogonadism:** Congenital or acquired, gonadotropin-releasing hormone deficiency or pituitary hypogonadism, may be caused by anomalies in the normal hypothalamic-pituitary gonadal axis or following surgical or radiotherapy intervention.

- **Hypothalamic-pituitary-gonadal (HPG) axis:** The HPG axis is a complex system that regulates the production of testosterone and other hormones. The hypothalamus secretes gonadotropin-releasing hormone, which stimulates the pituitary gland to release FSH and LH. These hormones then stimulate the testes to produce testosterone.

- **Testosterone Replacement Therapy (TRT):** Testosterone replacement therapy is used to treat men with hypogonadism (low testosterone levels). TRT is typically used to relieve symptoms of low testosterone, such as fatigue, decreased muscle mass, and decreased sex drive.

- **Testosterone Concentrations:** Serum total testosterone concentrations have not been established in pediatric patients less than 18 years of age. Testosterone is teratogenic and may cause fetal harm. Exposure of a fetus to androgens may result in varying degrees of virilization. Testosterone transfers into human milk, Natesto is not indicated for use in women.
NATESTO® (testosterone)
Brief Summary of Full Prescribing Information
INDICATIONS AND USAGE
Natesto nasal gel is an androgen indicated for replacement therapy in males for conditions associated with a deficiency or absence of endogenous testosterone:
• Primary hypogonadism (congenital or acquired)*
• Hypogonadotropic hypogonadism (congenital or acquired)*
Limitations of use:
• Safety and efficacy of Natesto in men with “age-related hypogonadism” (also referred to as “late-onset hypogonadism”) have not been established.
• Safety and efficacy of Natesto in males less than 18 years old have not been established.
★The full description of these conditions can be found in the Full Prescribing Information.

CONTRAINDICATIONS
Natesto is contraindicated in men with carcinoma of the breast or known or suspected prostate cancer. Natesto is also contraindicated in pregnant or breast-feeding women. Testosterone may cause fetal harm.

WARNINGS AND PRECAUTIONS
• Nasal Adverse Reactions and Limited Long-Term Information on Nasal Safety: Nasal adverse reactions, including nasopharyngitis, rhinorrhea, epistaxis, nasal discomfort, and nasal scabbing, were reported in the clinical trial experience with Natesto. Patients should report any nasal symptoms or signs to their health care professional.
• Use in Patients with Chronic Nasal Conditions and Alterations in Nasal Anatomy: Due to lack of clinical data on safety or efficacy, Natesto is not recommended for use in patients with chronic nasal conditions or alterations in nasal anatomy.
• Worsening of Benign Prostatic Hyperplasia and Potential Risk of Prostate Cancer: Patients with BPH treated with androgens are at an increased risk for worsening of signs and symptoms of BPH. Monitor patients with BPH for worsening signs and symptoms. Patients treated with androgens may be at increased risk for prostate cancer. Evaluate patients for prostate cancer prior to initiating treatment.
• Polycythemia: Increases in hematocrit, reflective of increases in red blood cell mass, may require discontinuation of Natesto. Check hematocrit prior to initiating testosterone treatment. An increase in red blood cell mass may increase the risk of thromboembolic events.
• Venous Thromboembolism: Venous thromboembolism (VTE), including deep vein thrombosis (DVT) and pulmonary embolism (PE), have been reported in patients using testosterone products. Evaluate patients with signs or symptoms consistent with DVT or PE.
• Cardiovascular Risk: Some postmarketing studies have reported an increased risk of myocardial infarction and stroke associated with use of testosterone replacement therapy in men.
• Abuse of Testosterone and Monitoring of Serum Testosterone Concentrations: Testosterone has been subject to abuse, typically at doses higher than recommended for the approved indication and in combination with other anabolic androgenic steroids. Anabolic androgenic steroid abuse can lead to serious cardiovascular and psychiatric adverse reactions.
• Use in Women and Children: Women and children should not use Natesto.
• Potential for Adverse Effects on Spermatogenesis: Exogenous administration of androgens may lead to azoospermia.
• Hepatic Adverse Effects: Prolonged use of high doses of methyltestosterone has been associated with serious hepatic adverse effects. Peliosis hepatis can be a life-threatening or fatal complication. Patients should be instructed to report any signs or symptoms of hepatic dysfunction. If these occur, promptly discontinue Natesto while the cause is evaluated.
• Edema: Edema, with or without congestive heart failure, may be a serious complication in patients with pre-existing cardiac, renal, or hepatic disease.
• Gynecomastia: Gynecomastia may develop and may persist in patients being treated with androgens, including Natesto, for hypogonadism.
• Sleep Apnea: The treatment of hypogonadal men with testosterone may potentiate sleep apnea in some patients, especially those with risk factors such as obesity and chronic lung disease.
• Lipids: Changes in the serum lipid profile may occur. Monitor the lipid profile periodically, particularly after starting testosterone therapy.
• Hypercalcemia: Androgens, including Natesto, should be used with caution in cancer patients at risk of hypercalcemia (and associated hypercalciuria). Regular monitoring of serum calcium concentrations is recommended in these patients.
• Decreased Thyroxine-binding Globulin: Androgens, including Natesto, may decrease concentrations of thyroxine-binding globulins, resulting in decreased total T4 serum concentrations and increased resin uptake of T3 and T4. Free thyroid hormone concentrations remain unchanged, however, and there is no clinical evidence of thyroid dysfunction.

ADVERSE REACTIONS
Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice. The most common adverse reactions (incidence ≥3%) are: PSA increased, Worsening of Benign Prostatic Hyperplasia and Potential Risk of Prostate Cancer, Venous thromboembolism (VTE), including deep vein thrombosis (DVT) and pulmonary embolism (PE), have been reported in patients using testosterone products. Evaluate patients with signs or symptoms consistent with DVT or PE.

DRUG INTERACTIONS
• Changes in insulin sensitivity or glycemic control may be seen with androgens and, therefore, may necessitate a decrease in anti-diabetic medication in diabetic patients.
• Changes in anticoagulant activity may be seen with androgens. More frequent monitoring of International Normalized Ratio (INR) and prothrombin time is recommended in patients taking warfarin.
• Use of testosterone with corticosteroids may result in increased fluid retention. Use with caution, particularly in patients with cardiac, renal, or hepatic disease.

USE IN SPECIFIC POPULATIONS
There are insufficient long-term safety data in geriatric patients using Natesto to assess the potential risks of cardiovascular disease and prostate cancer.

Please note that this information is not comprehensive. Visit Natestohcp.com or call 1-833-698-3786 to obtain the FDA-approved product labeling.
To report SUSPECTED ADVERSE REACTIONS, contact Acerus Pharmaceuticals Corporation at 1-833-698-3786 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Marketed by: Acerus Pharmaceuticals Corporation
Manufactured by: Haupt Pharma Amareg GmbH, Donaustauer Str. 378, Regensburg, Bavaria D-93055, Germany
Approved: 10/2016
NAT-US-0091 June 2021
American Board of Urology: In Pursuit of Diversity

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Executive Director, American Board of Urology


To seek equity in the practice of medicine demands that diversity is reflected within the composition of the board members that lead our specialties. Why? Diverse management teams have been documented to foster innovation, understanding and empathy, increase effective communication and significantly improve governance in ways that are lacking within a homogeneous environment.1,2 These benefits far exceed the window dressing of a diverse membership used to enhance the public reputation and serve as a buffer against external pressures.1,2 In this regard, the American Board of Urology (ABU) desires to point out that the practice of diversity and inclusion has been a cornerstone of our values for years; however, we acknowledge that although progress has been made, there is more to be done. The article in the September issue of Urology Practice® briefly outlines the current processes we employ and those we intend to pursue.3

The ABU consists of 3 major committees: the Trustees of the Board, and the Written and Oral Exam Committees. Yearly, before selecting new members to these committees, a gap analysis is performed to evaluate for discrepancies between the committee structure and the constituents we serve. The selection of new committee members is based on both the individual’s merit and an attempt to match or supersede the diversity ratios described within the most current National Census conducted by the American Urological Association.4 The diversity ratios we evaluate include gender, race, ethnicity, geography and subspecialty areas.

This year’s evaluation revealed our committee structure consisted of 85% (98/115) male and 15% (17/115) women: National Census 90% and 10%, respectively. Regarding race and ethnicity, White non-Hispanic: 74% (85/115) compared...
to 81% [National Census]; Hispanic: 1% (1/115) compared to 4%; Asian: 22% (25/115) compared to 12%; Black/African American: 3% (4/115) compared to 2%. Regarding evaluating the physician’s region of practice, we assess the percentage of U.S. urologists practicing within an AUA section and attempt to have the ABU committee structure be equivalent to or within 1–4 percentage points. It is also noteworthy that we carefully evaluate the percentage of individuals representing a subspecialty within the ABU committee structure. However, we have deliberately increased numbers of individuals who practice Female Pelvic Medicine and Reconstructive Surgery (FPMRS) and Pediatric Urology above the national percentiles due to the expertise required to construct test items for subspecialty examinations.

The ABU recognizes that the evaluation of ratios with attempts to match our committee structure to our constituency is an excellent initial step to establish diversity. However, the establishment of ratios has not substantially changed societal behavior or attitudes and may have significant negative unintended consequences.5–9 The actual establishment of diversity and inclusion practices is about much more than a numbers game. Rather, the path we desire to pursue to establish diversity must eventually modify the mindset of individuals, societies and ultimately national cultures.5–9 To reach our eventual long-term goal, we must include educational efforts that inform our diplomates and committee members regarding the benefits of diversity. In this regard, the ABU is pursuing multiple specific aims: 1) Development of an implicit bias educational course that all ABU staff and committee members will participate in either at its inception or at the time of hiring or initial ABU committee appointment. 2) We desire to evaluate our examinations to see if any bias exists due to an individual’s primary language, race, ethnicity or gender. To accomplish this goal, it will be necessary for the ABU to voluntarily request that individuals record this information at the time of the examination. Historically, we have not captured these data due to concerns that candidates may have been apprehensive that information could negatively impact their certification process. Unfortunately, our failure to record this information significantly impairs our ability to evaluate potential implicit bias. Lack of knowledge also prevents our ability to correct any disparities that could exist. 3) We plan to formally establish an ABU subcommittee on Diversity, Equity and Inclusion that will monitor and mentor diversity within the ABU committee structure. The ABU would like to acknowledge that establishing and maintaining diversity within any governing board is an imperative that needs to be valued, incessantly evaluated and, when necessary, amended to reflect the values and principles of the public we serve and the diplomates we govern.

AUA2021: CROSSFIRE DEBATE

Prophylactic Suburethral Sling at Time of Prolapse Surgery in the Era of Mesh: A Crossfire Debate

Eric S. Rovner, MD
Medical University of South Carolina

Should patients undergoing vaginal prolapse surgery have a concomitant midurethral sling (MUS)? Some strongly advocate that all such patients should, others support a staged approach, while some suggest a selected approach. Which is correct?

Patients presenting for pelvic organ prolapse (POP) repair will have one of 5 scenarios with respect to stress urinary incontinence (SUI) (see table). It is clear that some individuals undergoing surgical repair of POP will develop de novo SUI postoperatively. However, there are others with preoperative SUI who will have resolution of SUI following POP repair alone without concomitant anti-incontinence surgery. Nevertheless, concomitant SUI surgery is often performed at the time of POP repair in order to reduce or prevent de novo or “occult” SUI occurrence. Those with bothersome de novo SUI following POP repair will potentially be subjected to another surgery for repair of SUI which could have been treated contemporaneously at the time of POP repair. Due to this potential burden, several multicenter trials have examined the efficacy and safety of a concomitant surgical approach including some funded by the National Institutes of Health.10–12 However, the potential benefits of doing such “prophylactic” surgery in all patients undergoing POP repair must be balanced against the additional expense and operative time as well as the potential for adverse outcomes from these surgeries (failure, bleeding, pain, bladder outlet obstruction etc) especially if MUS is being considered as the SUI treatment. Importantly, many patients will not develop SUI after POP surgery, thus doing an anti-incontinence procedure on all patients with POP will subject many patients who were not destined to develop SUI to an unneeded, superfluous and potentially dangerous procedure at the time of POP repair. Additionally, considerable ongoing controversy exists surrounding the use of transvaginal mesh in the form of MUS for the treat-
PROPHYLACTIC SUBURETHRAL SLING AT TIME OF PROLAPSE SURGERY IN THE ERA OF MESH

Continued from page 28

ment of SUI. The risk of complications from the use of MUS in all settings remains a consideration. In fact, one recent study suggests a trend towards fewer slings at the time of POP repair since the U.S. Food and Drug Administration notification on mesh in 2011. Ideally, if we could predict preoperatively who will develop SUI following POP surgery, many individuals could be spared an unnecessary sling. Simple prolapse reduction with a pessary combined with a period of observation for the development of symptomatic SUI or POP reduction at the time of urodynamics (UDS) have been suggested as methods of identifying and selecting some patients for SUI surgery at the time of POP repair. However, this may over- or underestimate the actual incidence and/or introduce unnecessary costs such that some authors argue for doing slings in all such patients. Predictive models have also been developed for selecting patients for concomitant SUI surgery. Nevertheless, such preoperative predictors are not universally reliable, and thus some authors support a staged approach advocating for a SUI surgery only in those with de novo SUI following POP repair. At present, the choice of placing a MUS at time of POP repair in patients without SUI is complicated, without an overwhelmingly “correct” answer, especially in the era of the ongoing mesh controversy. Many variables can be considered in this shared decision making process between patient and surgeon and these will be strongly debated during the Crossfire session at the AUA Annual Meeting on Monday, September 13 (7:30 a.m.–8:00 a.m.).

AUA2021: CROSSFIRE DEBATE

Peyronie’s Disease: Xiaflex® vs Surgery—Is There One Best Approach?

Laurence A. Levine, MD
Rush University Medical Center
{

Peyronie’s Disease (PD) has emerged over the last several decades as a serious disorder that is regularly seen by all urologists, especially sexual medicine experts. It is that much more complex because we still do not understand the underlying pathophysiology. Simply put, it is a wound healing disorder which leaves behind an inelastic scar that fails to remodel over time. This results in physically and psychologically devastating consequences. Unfortunately, there is no known, reliable nonsurgical treatment option. Xiaflex® is the only Food and Drug Administration approved nonsurgical option with a good deal of published reports on its efficacy and safety, but Xiaflex is far from a cure and rarely corrects the deformity. In fact, many men who undergo this treatment appear to experience little benefit. On the other hand, surgery remains the gold standard for treatment as it can reliably correct the deformity and can provide a functionally straight and functional penis with respect to rigidity. Surgical options include plication and grafting for men who have good preoperative erections. For those men who do not have reliable rigidity, they will need placement of a prosthesis with straightening maneuvers. As good as surgery is, there are risks and many men with PD prefer not to have surgery. Therefore, finding the best nonsurgical option is incumbent upon science.

We still don’t know who the optimum candidates for Xiaflex are. It appears to me to be best for those who have a more acute rather than extended area of curvature, those who do not have extensive plaque calcification, particularly in the area of maximum curvature, and who have curvature less than 60°, as virtually all studies have shown average curvature reduction in the 17° to 25° range, which may be enough for some men but clearly not enough for those with severe curvature. In those men who have failed Xiaflex, there are several articles indicating that successful surgical reconstruction can be accomplished albeit with added difficulty due to ablation of the plane between Buck’s fascia and the tunica albuginea. Xiaflex clearly has a place in modern medicine, and possibly with further research we will find a better mode for administration, which may include changing the dose, volume injected and distribution of the drug.

Our panel of debaters including Wayne Hellstrom (Tulane University), Lawrence Hakim (Cleveland Clinic Florida), Allen Morey (University of Texas-Southwestern) and Serge Carrière (McGill University) are recognized experts in this field with loads of experience treating men with PD. They will provide a lively discussion on the pros and cons of these treatment options, which will be both educational and entertaining for the attendees. Urologists should be familiar with these treatment options, their limitations and risks. A competent urologist should be able to discuss the most appropriate treatment for the patient presenting with PD through shared decision making.

Prostate Biopsy Dilemma: TRUS versus Transperineal

Art Rastinehad, DO., FACOS
Northwell Health System

Peter Chiu, MBChB, PhD, FRCSEd
The Chinese University of Hong Kong

Hashim U. Ahmed, FRCS, PhD, BM, BCH, MA
Imperial College London

Arvin George, MD
University of Michigan

Thomas Polascik, MD
Duke University

The AUA Crossfire debate on Friday, September 10 will feature the timely topic, “The Prostate Biopsy Dilemma: TRUS [transrectal ultrasound] versus Transperineal Biopsy.” Four experts will debate the pros and cons of each approach, featuring Dr. Peter Chiu and Dr. Hashim Ahmed representing the transperineal side while Drs. Arvin George and Thomas Polascik will present arguments for TRUS biopsy. The debate will be moderated by Dr. Art Rastinehad.

This is a contemporary and germane topic that affects the clinical practice of almost every urologist worldwide. “For many years, TRUS prostate biopsy has been our reliable workhorse,” states Thomas Polascik, “and has performed very well across multiple settings. However, there has been growing concern for infection and quinolone resistance that has led to a paradigm shift that now favors the transperineal biopsy, at least from the vantage of a reduction of infectious complications.”

Fluoroquinolones have performed exceptionally well in the 1990s and early 2000s with minimal side effects, providing good prophylactic coverage for prostate biopsy. In fact, their use has been adopted by the AUA best practices guidelines for prostate biopsy. However, there has been an increasing number of clinical papers and reports internationally that describe the rise of fluoroquinolone resistance with an overall infection or sepsis rate of approximately 3%. Post-biopsy prostateitis symptoms and urinary tract infection following biopsy can be seen in up to 15% to 20%, depending on the definition used. To surmount the concern to prevent biopsy-induced infections in otherwise healthy patients, we have seen measures such as using various antibiotics delivered either intramuscularly or intravenously, enhanced antibiotic prophylactic utilizing more than 1 type of antibiotic or targeting antibiotic prophylaxis based on rectal swab culture results. “However, none of these enhanced antibiotic techniques have performed exceptionally well and for that reason there’s been a groundswell to convert the conventional TRUS biopsy to the transperineal approach. Indeed, for the first time, the [European Association of Urology] prostate cancer guidelines recommend [the transperineal] route as the first choice for prostate biopsy this year,” states Dr. Peter Chiu.

Dr. Hashim Ahmed will argue that the prostate cancer detection rate by the transperineal approach is very good and that many of these procedures don’t even require antibiotics when performed in a clean fashion. The infection rate for the transperineal approach has been
When a magnetic resonance imaging (MRI)-guided biopsy (MRGB) returns negative or with only a Grade Group (GG) 1 finding, the search for a clinically-significant prostate cancer (csPCa) may not be over. Has a cancer been missed? Further steps for the patient may include repeat targeted biopsy, entry into active surveillance (in the case of GG1 tumor), repeat MRI with or without repeat biopsy at some point in the future or reassurance and observation. Next steps are dependent on the original MRI findings, prostate specific antigen (PSA) density, operator confidence in biopsy accuracy and clinical suspicion aside from the MRI.

Regarding the MRI findings, 2 possibilities exist: either a target is present or it isn’t. If no lesion is present on MRI, biopsy may be avoided altogether if clinical suspicion remains low and other risk factors are absent (racial or genetic predisposition). If prostate palpation indicates a lesion (induration, nodule, asymmetry), biopsy should be performed regardless of MRI findings. Of special importance is PSA density, which ranks second only to MRI findings in prediction of csPCa. In a prospective trial in which men underwent biopsy even with a negative MRI (PAIRED-CAP), PSA density helped differentiate those with and without csPCa. In that important study, when PSA density was >0.15, 27% of men with a negative MRI were found to have csPCa upon template biopsy of the organ.¹ Data on PSA density from that study help determine level of suspicion that a csPCa may have been missed.

When an MRI visible lesion ('target') is present, ie a region of interest is assigned Prostate Imaging Reporting and Data System (PI-RADS®) v2 score of ≥3, then biopsy should follow. Biopsy results are highly dependent on the PI-RADS score, as shown in the table display-

<table>
<thead>
<tr>
<th>PI-RADS Score</th>
<th>Biopsy Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥3</td>
<td>Biopsy Positive</td>
</tr>
<tr>
<td>2</td>
<td>Biopsy Negative</td>
</tr>
<tr>
<td>1</td>
<td>Biopsy Negative</td>
</tr>
</tbody>
</table>

In men whose original MRI was negative and biopsy was also negative, suspicion of cancer may persist for various clinical reasons. In such cases, it is reassuring to know that a repeat negative MRI obtained at a future time point has been shown to exclude csPCa in nearly all cases.² Thus, a negative biopsy in a man with a PI-RADS-5 lesion would raise suspicion that a csPCa may have been missed, and repeat biopsy would at some future point be indicated.

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exceedingly low with on average only 1 in 500 getting sepsis. “There is of course a greater public health case for switching to transperineal biopsy in order to meet our individual physician duty towards antibiotic stewardship.”

Discussion points for this debate will focus on what is considered standard of care in various communities, the simplicity and efficiency of the various approaches and the complication rates; also, debaters may touch on comfort levels for patients undergoing biopsy. Some of the complications, in addition to infection and sepsis, include acute retention and bleeding.

Also for debate will be some of the costs associated with these 2 techniques in terms of equipment, expense and time/resources invested. Is the transperineal approach deliverable in an outpatient office setting or does this require special equipment and anesthesia? Also, is the thinking similar or different across the continents, as Dr. Chiu will provide a perspective from Asia and Dr. Ahmed from Europe.

Even though the 4 discussants will be taking a position for 1 of these 2 biopsy approaches, all have extensive experience with both techniques. Dr. Art Rastinehad says that “physicians need to make a decision regarding which approach they will endorse and then prospectively set up a program of excellence in their practice.” In his institution, he has converted all biopsies to transperineal access, and has made it relatively straightforward and standardized for his urology partners practicing in their clinical setting. Dr. Arvin George states that there is, “some comfort and inertia level to continue with TRUS biopsies and often more challenging to implement a transperineal biopsy program with new workflow. Transperineal biopsies are in general more painful than transrectal biopsies, and in the old days used to be intolerable under local anesthesia.”

PROSTATE BIOPSY DILEMMA

CONTROVERSIES IN UROLOGY

Continued from page 30

MRG, a question is “could a csPCA have been missed?” The next step is enrollment in active surveillance and a year later a “confirmatory biopsy” involving repeat sampling of any MRI-visible lesion, tracked biopsy for men entering active surveillance. With followup out to 7 years, the chances of upgrading to csPCA is approximately 10% when confirmatory biopsy reveals ≤GG1. Thus, using the approach described, considerable reassurance can be provided that a csPCA has not been missed for men entering active surveillance.

The above measures help to determine “what’s next” when MRGB is negative or shows only GG1 tumor. The responsible urologist has several considerations—MRI findings, PSA density, clinical factors and technical considerations during biopsy—to help provide the patient reassurance or determine need for repeat study.

CONTROVERSIES IN UROLOGY

Continued from page 31

Table. MRI-guided biopsy and the transformation of prostate cancer (UCLA data 2010–2020, 2,992 patients)

<table>
<thead>
<tr>
<th>MRI PI-RADS Score</th>
<th>No. Pts</th>
<th>% Neg (No. pts)</th>
<th>% Gleason Score (No. pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>3+3</td>
</tr>
<tr>
<td>0–2</td>
<td>682</td>
<td>55.5 (379)</td>
<td>22 (149)</td>
</tr>
<tr>
<td>3</td>
<td>805</td>
<td>46 (371)</td>
<td>21 (166)</td>
</tr>
<tr>
<td>4</td>
<td>810</td>
<td>23 (188)</td>
<td>17.2 (139)</td>
</tr>
<tr>
<td>5</td>
<td>695</td>
<td>4 (39)</td>
<td>6 (44)</td>
</tr>
</tbody>
</table>

When GG1 is found on an MRGB, a question is “could a csPCA have been missed?” The next step is enrollment in active surveillance and a year later a “confirmatory biopsy” involving repeat sampling of any MRI-visible lesion, tracked biopsy when confirmatory biopsy reveals ≤GG1. Thus, using the approach described, considerable reassurance can be provided that a csPCA has not been missed for men entering active surveillance.

The above measures help to determine “what’s next” when MRGB is negative or shows only GG1 tumor. The responsible urologist has several considerations—MRI findings, PSA density, clinical factors and technical considerations during biopsy—to help provide the patient reassurance or determine need for repeat study.

AUA2021: CROSSFIRE DEBATE

Controversies in Urology: Negative Fusion Biopsy following a Concerning Prostate MRI

Justin R. Gregg, MD
MD Anderson Cancer Center
The University of Texas

Emmett Kennady
University of Texas Health Science Center

Multi-parametric magnetic resonance imaging (MRI)-guided fusion biopsies are increasingly used in the detection of prostate cancer due to improved sensitivity in detecting clinically significant disease (csPCA). Since the PROMIS trial demonstrated the diagnostic accuracy of MRI in the pre-diagnostic setting, multiple studies have demonstrated improvements in diagnosis using MRI-based biopsy techniques when compared to traditional 12-core biopsy templates. These include work from Siddiqui et al demonstrating improved sensitivity and data from the PRECISION trial, suggesting a pathway including selective fusion biopsy based on MRI suspicion was superior to 12-core biopsy in detecting csPCA. Notably, the MRI-FIRST trial further demonstrated that systematic biopsy when combined with MRI-guided biopsy offers improved

AUA2021: CROSSFIRE DEBATE

Continued on page 33
sensitivity in the detection of csPCA compared to either modality alone.4

While these studies provide near uniform agreement regarding the risk of csPCA in the presence of a “high-risk” lesion (often defined as Prostate Imaging Reporting and Data System (PI-RADS®) 4 or 5) on MRI, not all patients have csPCA in this setting and many have false-positive MRIs. Among men from the PRECISION trial who received only MRI-targeted biopsy, 40% of PI-RADS 4 patients (70) and 17% of PI-RADS 5 patients (54) had either non-csPCA (defined as Gleason Grade Group 1 disease) or no cancer, representing either the absence of csPCA or suboptimal targeting of the biopsy.5 Given the adaptation of prostate MRI and fusion technologies, this clinical scenario is increasingly common. However, few studies have evaluated outcomes among men with a concerning MRI and negative fusion biopsy.

A study by Meng et al described clinical followup of a group of 88 men (18% of the cohort) who had a PI-RADS 4 or 5 MRI with negative fusion and systematic biopsy.5 Interestingly, among those who underwent followup MRI 35% had resolution of their PI-RADS 4/5 lesion, 27% had persistent PI-RADS ≥4/5 lesion, 27% had persistent PI-RADS 2/3 downgrade on repeat MRI, having Gleason Grade Group 1 disease) or no cancer, representing either the absence of csPCA or suboptimal targeting of the biopsy.5 Given the adaptation of prostate MRI and fusion technologies, this clinical scenario is increasingly common. However, few studies have evaluated outcomes among men with a concerning MRI and negative fusion biopsy.

Finally, a followup to the PROMIS study evaluated factors associated with benign pathology in patients with Likert ≥3 MRI lesions and no cancer on systematic or mapping template biopsy.7 They observed a number of factors associated with benign results, including lower prostate specific antigen density, low lesion number, small lesion volume and lack of diffusion restriction.7 While offering an excellent starting point in evaluating risk among men with a negative biopsy and concerning MRI, further work is needed to determine the best clinical management for this population.

In this session, we plan to discuss this evolving clinical scenario, including further discussion surrounding these and other data related to risk of csPCA among men with a high-risk MRI lesion and negative biopsy. We will consider management options such as variability of MRI images and interpretation, continued prostate specific antigen surveillance, biomarker usage, repeat MRI and the use of additional biopsies. Finally, we will consider the implications of a negative MRI targeted and systematic biopsy, acknowledging the balance between the reassurance offered by a negative test and the risk present in the setting of a “high-risk” MRI. □

5. Meng X, Chao B, Chen F et al: Followup of men with PI-RADS >3 or 5 abnormality on prostate magnetic resonance imaging and non-malignant pathological findings on initial targeted prostate biopsy. J Urol 2021; 205: 748.
A young man with T6 paraplegia has urinary incontinence due to neurogenic detrusor overactivity (NDO) refractory to antimuscarinics. A trial of botulinum toxin seems like the obvious answer. But what if he has C5 complete quadriplegia? Or what if he were a woman with a T6 injury who has good hand function but can’t transfer to self-catheterize? How about a woman with stable multiple sclerosis (MS) and NDO vs a woman with rapidly progressive MS and NDO? Each of these situations requires a tailored approach, and putting every patient through the same algorithm can lead to frustration and poor outcomes.

At this year’s AUA Annual Meeting, Dr. Sean Elliott will moderate a Crossfire Debate on “Management of Neurogenic Bladder: Suprapubic Cystostomy, Botulinum Toxin and Augmentation Cystoplasty.” Debaters will include Drs. Anne Pelletier-Cameron (defending suprapubic cystostomy), Katherine Theisen (defending botulinum toxin) and Jeremy Myers (defending augmentation cystoplasty).

Suprapubic cystostomy, botulinum neurotoxin (BoNT) and augmentation cystoplasty are all appropriate treatments. So, rather than focusing on which treatment is the best for NDO, the panel will discuss when each treatment is superior. Panelists will highlight the phenotypes of patients they believe are most appropriate for the therapy they are defending.

Clean intermittent catheterization (CIC) remains the gold standard method of bladder emptying. When CIC is paired appropriately with a bladder storage aid such as antimuscarinics, BoNT or augmentation cystoplasty, patients can achieve an excellent quality of life. But if administration of antimuscarinics or BoNT does not completely resolve NDO, then patients can suffer from bladder spasms and incontinence. Furthermore, we often do not appreciate the challenges of CIC—due to spasticity, motor weakness, genital anatomy or obesity. How many of us have watched our patients catheterize?

For the purposes of this article, we will go through the example of spinal cord injury (SCI) to highlight the different phenotypes of neurogenic bladder and how to select the best treatment; but in the Crossfire Debate we will also discuss phenotypes of MS, spina bifida and cerebral palsy.

SCI patients are often young and thin. Compared to patients with congenital neurogenic bladder, they lived a good deal of their life without a neurological injury and, according to surveys, they strongly value independence.1 They have a fixed lesion (compared to progressive lesions with MS). Of SCIs in the United States 60% are quadriplegia, but most of those are incomplete. After their injury, patients spend weeks to months in acute rehabilitation with a team of providers who teach and help them perform CIC. Over half are on CIC at the time they exit acute rehabilitation, but only 20% remain on CIC long-term.2 The strongest predictor of remaining on CIC is upper extremity function, followed by male gender and low body mass index.3 Most of those who exit CIC opt for an indwelling catheter. Unfortunately, this indwelling catheter is most often a urethral catheter, which is associated with more complications long-term than a suprapubic cystostomy.4

SCI patients with an indwelling catheter develop twice as many urinary tract infections per year as those on CIC and are more likely to develop stones, hydronephrosis and poor bladder compliance.6 Yet, when we surveyed 1,479 people with SCI, those on CIC had a lower urinary quality of life than those with augmentation cystoplasty or an indwelling catheter.7 The most common reasons cited by patients for abandoning CIC are inconvenience, incontinence and recurrent urinary tract infections.8,9 Clearly, we could do a better job of optimizing who gets put on a regimen of CIC and who goes right to a suprapubic cystostomy.

In SCI, BoNT is most appropriate for someone who can self-catheterize through their native urethra. These are more likely to be (but not only) men with paraplegia. Patients should be dry in between BoNT injections and should be able to go at least 6 months between injections. If a patient cannot self-catheterize through their native urethra but can do so through a catheterizable channel, then one should strongly consider an augmentation cystoplasty at the time of channel creation. Typically, these are women with paraplegia who cannot transfer or SCI patients of either gender with partial quadriplegia; these are people who typically can catheterize a stoma more easily than their urethra. Lastly, someone with a complete high cervical injury will be unable to catheterize themselves. While some will be motivated to pursue CIC and can do so if they have adequate in-home support, most will be better served by early placement of a suprapubic cystostomy before they default to a urethral catheter.

The real winner of this Crossfire Debate will be the audience members, who will leave with a better understanding of how different patients with neurogenic bladder patients fare with different treatment options. While every patient is different and we need to listen to their preferences, it can ease the evaluation and discussion of management options if we can compare our patients in clinic to the different phenotypes presented in this debate.

References:
AUA2021: CROSSFIRE DEBATE

Use of Desmopressin in Geriatric Patients for the Treatment of Nocturia

Tomas L. Griebling, MD, MPH
University of Kansas

Nocturia is one of the most common and also the most bothersome lower urinary tract symptom in adults. Incidence and prevalence rates of nocturia increase with advancing age and the condition frequently occurs in geriatric patients. The etiology is often multifactorial and may include nocturnal polyuria, increased evening fluid consumption, peripheral edema, congestive heart failure, electrolyte imbalances and sleep apnea or other sleep disturbances. Sleep apnea has been linked to reductions in antidiuretic hormone (ADH) secretion which can increase nighttime volume of urine output. Men with benign prostatic hyperplasia may also experience bothersome nocturia. Getting up once per night is usually considered normal, but getting up 2 or more times a night has been shown to have negative outcomes on overall health related quality of life. Nocturia has been associated with a variety of negative clinical outcomes including increased rates of falls and fractures as well as mortality.

A multicomponent approach is often used for the treatment of nocturia. Adjustments in fluid consumption, leg elevation prior to going to bed for the night, exercise and other similar measures have been advocated as behavioral options that can help some patients. Use of continuous positive airway pressure can be quite helpful in patients with sleep apnea. This can reduce sleep disruption itself from improvement in ventilation and elimination of apneic intervals. This has also been shown to increase natural production of ADH in affected patients, which in turn can lead to a reduction in the volume of nocturnal urine production.

Administration of exogenous arginine vasopressin (desmopressin) has long been used in the treatment of nocturnal enuresis in pediatric patients. However, similar use in elderly patients has been more problematic in the past due to risk of symptomatic hyponatremia or other potential complications. Ongoing research and development of some newer formulations and methods of administration has led to renewed interest in use of this medication for the treatment of nocturia in adults. However, use of this medication in the geriatric patient population remains controversial.

A crossfire debate on the topic will be featured in the plenary sessions at the upcoming AUA Annual Meeting. I will have the pleasure of moderating this debate on Sunday, September 12 (3:45 p.m. to 4:15 p.m.). I will be joined by 4 friends and colleagues who are all internationally recognized experts in the topic of nocturia. These include Dr. Alan Wein of the University of Pennsylvania, Dr. Roger Dmochowski of Vanderbilt University, Dr. Jeffrey Weiss of the State University of New York (SUNY) Downstate at Brooklyn and Dr. Kari Tikkinen of the University of Helsinki in Finland. We recently had an opportunity to chat about some of the main considerations regarding use of desmopressin for treatment of nocturia and nocturnal polyuria specifically in geriatric patients.

Griebling: Who do you feel are the best candidates for desmopressin therapy to treat nocturia and how do you approach clinical decisions in this population?

Dmochowski: Patients with nocturnal polyuria syndrome who are bothered by the condition and have minimal to no comorbidities. Age is not a criterion.

Wein: For individuals without significant comorbidities who have made an honest try at simple behavioral interventions and have failed, especially those who are getting up more than twice a night. I think it reasonable to try desmopressin with all of the usual precautions and checks.

Tikkinen: I have not used desmopressin in those aged 75 years or more. I think we need more evidence from controlled clinical trials regarding safety in elderly patients.

Griebling: Do patients need an analysis for nocturnal polyuria?

Wein: As physicians, we use many medications that are potentially hazardous to patients to both genders, especially those with many comorbidities. Unfortunately, this generally falls onto that group considered to be elderly. Many of these comorbid factors are associated with nocturia, and I would not use desmopressin in this group until all efforts have been exhausted to correct these factors. Examples include congestive heart failure, peripheral edema from other causes, poorly controlled or brittle diabetes, poorly controlled hypertension, and sleep disorders such as obstructive sleep apnea.

Dmochowski: Contraindications would include significant fluid volume status dysfunction such as congestive heart failure, significant renal filtration dysfunction, and patients who have cognitive impairment. Age alone should not be a criterion for exclusion.

Tikkinen: I have not used desmopressin in those aged 75 years or more. I think we need more evidence from controlled clinical trials regarding safety in elderly patients.

Wein: I think we need more evidence from controlled clinical trials regarding safety in elderly patients.

Griebling: What about Sleep Apnea? Do patients need formal sleep studies?

Wein: Yes, if patients have nocturnal polyuria and no other explanation, then sleep studies are indicated.

Dmochowski: Yes, this has become a routine part of my treatment for these patients, given the ability to abrogate much of the impact of polyuria with this intervention. Patient unwillingness to utilize external devices, however, somewhat mitigates against success of therapies for sleep apnea.

Griebling: What formulations of desmopressin do you typically prescribe? Oral melts? Pills? Nasal spray has been used in children in the past for nocturnal enuresis, but this has recently been recalled.

Dmochowski: Currently we only really have an adult formulation of pills or melts. I think any formulation that provides rapid onset and short half-life is reasonable. Microdosing is another advantage of some formulations.

Wein: Oral melt formulations with sex-specific dosing of 55 mcg in men or 27 mcg in women. If treating patients in their 80s or 90s, they must be robust (not frail) and willing to go for periodic serum sodium checks. I tell them to use desmopressin every other night. This obviates any need for sodium.

Wein: Yes. This would include a check for peripheral edema, polysomnography for suspected sleep apnea, and ambulatory blood pressure monitoring for nocturnal non-dipping hypertension.

Dmochowski: Yes, I have the patients keep a diary and determine nocturnal polyuria, which I define as greater than 30% of overall output at night. I also do a good screening evaluation for other medical comorbidities, including any edematous disorders and the possibility of sleep apnea.

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monitoring. The idea of sleeping well every other night beats never sleeping well at all.

**Griebling: Hyponatremia is, of course, one of the main concerns, particularly in older adults. Do you think patients need routine monitoring of serum sodium levels?**

**Tikkinen:** Surely baseline hyponatremia must be excluded prior to starting desmopressin therapy, and serum sodium levels must be monitored carefully.

**Dmochowski:** Hyponatremia is not as predictable as we would like and certainly requires sedulous observation over time.

**Griebling: What about safety of long-term use?**

**Dmochowski:** Some patients are doing very well with long-term use, but again this presumes observation and close follow-up.

**Wein:** Studies and my personal experience demonstrate desmopressin is safe especially when there are no short-term complications such as transitory hyponatremia. If a mid-day diuretic is added, then monitoring for hypokalemia should be included.

**Griebling: Do you regularly involve other clinicians, including primary care or specialists in geriatrics or cardiology, in the management of your patients?**

**Dmochowski:** Yes, management with primary care and interested geriatricians or internists is very useful and can decrease the burden for the patient and health care system by sharing visits and observations.

**Griebling: Any other closing thoughts?**

**Wein:** I would emphasize the importance of the nondipping blood pressure concept of nocturnal polyuria induced by pressure-natriuresis. Ambulatory blood pressure monitoring is needed to properly diagnose this condition.

**Tikkinen:** No, I agree with the points that have already been made. But I certainly look forward to ongoing conversations on this topic.

**Dmochowski:** I want to highlight the issues of frailty and some of the emerging research on this crucial topic in older adults.

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**AUA2021: CROSSFIRE DEBATES**

**Focal Therapy Debate: Summary of Arguments Pro and Con**

Laurence Klotz, MD, FRCSC
University of Toronto

**Focal Ablation of Prostate Cancer: The Concept, Herb Lepor**

The spectrum of site(s) and aggressiveness of disease, age at diagnosis and varying treatment priorities between oncological control and functional outcomes are unique characteristics of prostate cancer (PCa). Guideline-approved treatments for PCa include active surveillance (AS), radical prostatectomy (RP), radiation therapy (RT) and whole gland cryoablation. Because of the spectrum of the disease, the selection of treatment must balance oncological control, treatment-related complications, functional outcomes and patient priorities. Approximately 40% of men randomized to AS will progress to radical treatment within 5 years. According to the most recent update of the Scandinavian Prostate Cancer Group Trial 4 with a mean followup of 25 years, 9 and 6 men must undergo RP in order to prevent a single prostate cancer mortality or development of metastasis, respectively. The undertreatment of AS and overtreatment of RP suggest a treatment strategy targeting site(s) of clinically significant prostate cancer (csPCa) may be the preferred management for selected cases of clinically localized PCa.

A barrier to organ sparing management of PCa has been disease multifocality and the inability of transrectal ultrasound and systematic biopsy (SB) to reliably identify site(s) of csPCa. The introduction of multiparametric (mp) magnetic resonance imaging (MRI) and MRI-fusion targeted biopsy (MRFTB) coupled with acceptance of AS for very low and low-risk disease has been the game changer for interest in focal therapy (FT) or partial gland ablation (PGA) of PCa.

**Justification of Focal Ablation of PCa**

**Untreated Gleason Grade Group (GGG) 1 does not represent an oncologic risk:** PCa screening and detection should avoid detection of low-risk disease. Therefore, failure to detect or treat out-of-field low-risk disease should not be considered a limitation of FT.

**A pre-FA mpMRI reliably identifies the index lesion:** The overwhelming majority of PCa managed by RP are multifocal. However, the aggressiveness of PCa is typically defined by a single index tumor characterized by the highest GGG and pathological stage. MRI reliably identifies the index cancer in more than 85%-95% of men undergoing and 93% of men deemed candidates for FA.

**MRI/MRFTB/SB rarely misses csPCa in cases for FT:** The consensus is that the selection of candidates for FA should include a high quality mpMRI, magnetic resonance targeted biopsy of all MRI PI-RADS™ ≥2 lesions, and systematic biopsy. Appropriate candidates for FA have csPCa associated with an MRI lesion and contralateral SB showing GGG ≤1 disease. We identified 59 men who fulfilled our selection criteria for FA who underwent RP at our institution. MRI, MRFTB and SB were performed on all candidates prior to RP. The surgical specimens were step sectioned and all cancers were identified and mapped. The presence of any Gleason pattern 4 disease outside a planned ablation template of magnetic resonance lesion >10 mm margin was 23%. The linear length of Gleason pattern 4 was always less than 1 mm. Therefore, only very low volume Gleason pattern 4 would have been untreated. Approximately half of men with low risk disease who are candidates for AS have unrecognized GGG >1.

**STOP**
Ablative energy reliably eradicates in-field csPCa: At our institution 90% of FA are performed for GGG ≥1 disease and only 2% were found to have csPCa on aggressive reflex biopsy at 6 months. Whether untreated disease within or outside the ablation zone will become life threatening over time requires further investigation.

Quality of life is an important endpoint: Several multicenter prospective studies have reported significant quality of life complications following RP and RT with or without androgen deprivation therapy. Haglind reported on functional outcomes one year following more than 2,000 open and robotic RP performed in Swedish high-volume surgical centers. The rates of incontinence defined by using 2 or more pads a day were 20% and 21% following open and robotic RP, respectively. A recent study at the Memorial Sloan Kettering Cancer Center showed that only 30% of men with no baseline erectile dysfunction undergoing bilateral nerve sparing RP had erectile function restored to baseline levels even with the use of post-prostatectomy phosphodiesterase inhibitors. Simply reporting erectile dysfunction ignores climacturia, shortening of the penis or penile curvature, which are issues rarely discussed when counseling men about sexual dysfunction following RP.

Disease recurrence occurs following RP: The 5-year probability of biochemical recurrence following RP for men with biopsy GGG 1, 2, 3, 4 and 5 is approximately 4%, 12%, 37%, 52% and 74%, respectively (Epstein et al).

Prior FA does not preclude whole gland treatment: The majority of disease recurrences following FA are managed by re-ablation. There is emerging evidence that salvage RP and RT can be performed safely without increased complications rates.

Focal Ablation: The Application—Mark Emberton

The ideal candidate for focal therapy is a man with csPCa (GGG ≥2) that is associated with a clearly defined abnormality (lesion) in the prostate. The ideal volume for the lesion would be 0.5 cc. This is typically a lesion of 10 mm or so in diameter. The reason for this is that a margin will need to be applied around the lesion. This margin should be between 5 and 10 mm beyond the visible limits of the tumor as microscopic extension has been described up to 9 mm beyond the radiological limits of the tumor. Larger tumors require greater margins, and these will tend to overlap with key structures such as nerve...
FOCAL THERAPY DEBATE

Continued from page 37

bundies, urethra or external urethral sphincter. Such a man conforms to a radiological staging of T2a/b N0 M0.

The choice of energy is less important. It must be able to reach the most distant margins of the treatment plan and not be limited by any anatomical impediment. Calcium in the prostate gland will interfere with sound propagation. A fixed hip deformity might limit the placement of needles via the perineum for the purposes of administering cryotherapy or electroprostate.

A total of 85% of men will need only 1 treatment over a 5–10 year period. Around 10% of men will require a second treatment during that time. Around 1 in 20 men will need to transition to whole gland treatment, which will be in the form of either surgery or radiotherapy. Good functional outcomes can be achieved with salvage therapy.

Urinary incontinence is unusual (around 1/100 from centers of excellence); 90% of men will preserve erections sufficient for penetration (assuming good erections prior to treatment), 30% of men will require medication to improve erectile function. Can we do better?

Focal Therapy: The Limitations—Peter Carroll

The fields of genomic profiling and molecular imaging have had a profound positive impact on our ability to effectively and more precisely treat prostate cancer, and the options for the therapy are plentiful. The appeal of focal therapy is that a cancer thought to be confined to one area of the prostate is treated effectively, and this results in less morbidity compared to whole gland treatment. Treatment can be repeated, and patients who fail are generally good candidates for whole gland treatment. There are several different energy sources, and there is no clearly superior approach. The key to success is precise targeting facilitated by reliable imaging and careful case selection.

The majority of patients are not candidates for focal therapy. Most patients treated with focal therapy have lower-risk cancers. Those with “intermediate risk” disease most often have “favorable” intermediate risk features. Many of these patients may be candidates for active surveillance. Those “high risk” patients treated with focal therapy are often defined by higher grade alone. Most patients treated with focal therapy have undergone very rigorous selection, usually including advanced imaging and very extended biopsy. However, followup is often less stringent, very often relying only on “for cause biopsy” (that is, not all patients who undergo focal therapy are followed with biopsy).

The benefit of focal therapy needs to be proven with well done, prospective trials and/or registries. It should not be recommended as a replacement for active surveillance in those eligible for this option. Doing so would erode our credibility at a time when the field of urology has been credited with reducing overtreatment, a strong argument used to recommend against PCa early detection.

Patients presenting with clinically localized disease most at risk for future metastases and prostate cancer-specific mortality are those with much higher volume and grade disease, and are ill-suited for focal therapy. The battle for PCa survival will be won or lost in such patients.

Focal therapy is incremental, not transformative. Radical prostatectomy will remain the most common and perhaps the most impactful therapy for those in most need of treatment.

Focal Therapy: Not Ready for Prime Time—Andre Abreu

RP has many advantages. It is not limited by multifocality, location, or cancer volume. It permits detailed histological information and lymph node dissection.

Prostate specific antigen (PSA) failure is easily defined. However, despite many improvements in surgical techniques and technologies, RP is associated with high morbidity (incontinence and erectile dysfunction). Can we do better?

Concept: One of the most pertinent concerns is that 80% of PCa is multifocal. FT, therefore, relies on the concept of ablation of the “index cancer” (the dangerous cancer focus that drives the disease) accompanied by active surveillance of the untreated prostate tissue. Caution is necessary because PCa metastases may originate from a secondary smaller focus. Additionally, “index cancer” is not clearly defined.

Patient selection: The current paradigm for FT relies on MRI of the prostate followed by SB and targeted biopsy (TB) of MRI suspicious lesions. MRI has several limitations, including: 1) high interobserver variability, 2) underestimation of the size of suspicious lesions and 3) poor assessment of extra-prostatic extension. MRI may miss secondary clinically significant foci. TBs are subject to errors, including operator inexperience, incorrect imaging fusion, prostate shift, movement and needle displacement. Patients with a “clinically significant lesion and a negative standard biopsy” can harbor significant cancer in the contra-lateral “clear” lobe. Patient selection for FT should be based on multiple parameters. However, there are no nomograms or biomarkers to date validated for focal therapy. The limits of focal therapy with respect to grade, extent of disease on biopsy and T stage are unknown.

Delivering FT: Medially located cancers may not be suitable for FT because of proximity to the urethra, with urethral sparing resulting in incomplete treatment. The same applies to apical cancers. Factors such as calcifications, heat sinks, prostate movement and swelling, and the lack of real-time treatment feedback of many ablation modalities may lead to FT failure. Surgeons’ learning curves are additional concerns. The assessment of the slope of the learning curve outside established centers of excellence is still pending. Focal therapy is defined broadly, from lesion plus margin to hemi-gland or 3/4 ablation.

Followup: Followup after FT is challenging. There is no consensus on the interpretation of PSA kinetics and biochemical failure definition after FT. MRI post-FT is challenging. There are no standardized protocols for MRI acquisition and interpretation. The deformation of the prostate post-FT may increase errors of biopsy image-fusion. Artificial treatment effects confound histologic evaluation.

Outcomes: There is a lack of long-term followup and comparison to standard treatments. The long-term impact of focal therapy on oncologic outcome is still uncertain. Many patients reported on in FT cohorts would be candidates for AS. Is a negative SB (or absence of csPCa) a clinically meaningful outcome? Freedom from RT seems to be clinically meaningful. Salvage RT may have a greater effect on quality of life than primary radical therapy.

Until we have the results of prospective trials addressing these critical issues, FT should be explored with caution.
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Retzius-Sparing Robotic Prostatectomy

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Robot-assisted radical prostatectomy (RARP) is the most common form of treatment for localized prostate cancer. Retzius-sparing RARP (RS-RARP) avoids dissection of retroperitoneal space of Retzius and instead involves the dissection of the pouch of Douglas. The RS-RARP approach uses a smaller workspace, and offers less familiar landmarks when it comes to dissection of bladder neck and lateral pedicle. This makes it difficult to view the position of the ureteric orifices and median lobe of prostate after bladder neck division.1 The inverted relationship between the bladder and prostate during dissection and reconstruction of vesico-urethral anastomosis makes it challenging for the surgeon.2 Systematic reviews and meta-analyses of the literature have revealed higher positive surgical margin rates in the RS-RARP when compared with conventional RARP, especially for anterior lesions.3,4

The preservation of anterior structures has proven to be fundamental in the achievement of urinary continence. These structures include ligaments (pubic symphysis, puboprostatic ligaments and arcus tendineus) and muscles (puboperinealis, levator ani), as well as fascial and soft tissues (endopelvic and lateral prostatic fascia and detrusor apron).5 Our novel approach, named the “hood,” preserves the anterior structures and does not violate the anatomy of the pouch of Douglas (fig. 1). The Hood technique also allows various grades of nerve sparing to occur in a athermal manner and the surgeon can focus on time tested anatomical principles to achieve trifecta. Our group demonstrated excellent continence outcomes (defined as completely pad-free) in patients who underwent RARP with this technique. A week after catheter removal 21% of patients were continent, 83% after 4 weeks, 91% at 12 weeks and 95% of patients at 48 weeks without compromising surgical margin rates (positive surgical margin rates were 6% in our series).6 Figure 2 demonstrates magnetic resonance imaging annotation of hood structures in pre and post-RARP settings.

Our modified Hood approach, also called “the Tunnel,” is a perivesical, supravesical and Retzius-sparing anterior approach. It is a versatile approach that enables a tailored nerve-sparing approach through the development of an endopelvic fascia window and early release in cases of aggressive prostate cancer. Urologists are familiar with this surgical anatomy, so the technique can be easily adopted. Additionally, with the tunnel technique it is possible to clearly identify ureteral orifices and manage median lobes, avoiding the risk of ureteral injury. Likewise, the hood structures can be preserved unilaterally or bilaterally taking into account location of the tumor anterior or vs posterior.

Dr. Ash Tewari (the Principal Investigator in this study and Chairman of Milton and Carrol Petrie Department of Urology at the Icahn School of Medicine at Mount Sinai) owns equity in the form of stock certificates in Promaxo, for which he serves as an advisor. Promaxo is a privately traded company which develops MRI technology with a focus on prostate cancer.

Behavioral Modification Programs (BMPs) have been recommended as the first line treatment for overactive bladder (OAB) and urinary incontinence (UI) since the first Agency for Healthcare Research and Quality (formerly Agency for Health Care Policy and Research) clinical practice guideline on urinary incontinence in adults was established in 1972. Behavioral interventions have evolved since then to include 4 basic components: 1) patient education regarding the anatomy and function of the lower urinary tract and how it can be controlled, 2) lifestyle changes including fluid modification and elimination of food irritants, 3) bladder training including toileting programs, urge suppression with delayed voiding and 4) pelvic floor muscle (PFM) training to improve the awareness, control, and strength of the PFMs. BMPs are considered a part of the bigger picture of bladder health which includes not only the focus on the urinary bladder and the PFMs but also factors affecting it including bowel control, weight control, smoking cessation, nutrition and physical well-being.3,4

Although acceptance and implementation of BMPs have been slow, those who have embraced it in their practices have incorporated mainly the individualized instructions of behavioral therapies. Many clinical practices have incorporated biofeedback and electrical stimulation into PFM training, while other modalities may include telehealth and mobile health technology to deliver BMPs. The barriers to adoption and implementation of BMPs in practitioners’ offices include lack of understanding of the elements of BMPs, and lack of sufficient time and personnel to teach all the elements of behavioral therapies. Group sessions to teach patient BMPs could obviate this barrier but is the group session effective in improving if not curing the OAB and UI?3

The Panel discussion will elaborate on these approaches, comparing and contrasting group sessions versus individualized BMPs for treating mild to severe cases of OAB and UI. These approaches will be presented by 2 panelists, Diane K. Newman, DNP, CRNP, FAAN, BCP-PMD, Adjunct Professor of Urology at the University of Pennsylvania Perelman School of Medicine, and Alayne D. Markland, DO, MSc, Associate Professor of Gerontology and Geriatrics at the University of Alabama Birmingham. Diane Newman will present the data on how to establish group session teaching BMPs but also on the effectiveness in improving and in preventing UI. Alayne Markland will present the elements of the individualized approach, including the use of telehealth and mobile health, and its effectiveness in treating OAB and UI. These BMPs have been submitted to rigorous federally-funded prospective randomized controlled trials demonstrating their safety and effectiveness.4,5,10 The panelists will also present how the behavioral therapies could be positioned/combined with other nonsurgical therapies as well as an adjunctive therapy for those undergoing surgical treatments for these conditions.6,8

The moderator, Ananais C. Diokno, MD, Professor of Urology at Oakland University William Beaumont School of Medicine in Rochester, Michigan and the University of Central Florida in Orlando, Florida, will summarize the points presented by the 2 panelists. He will propose that a good starting point will be to do group sessions teaching BMPs and to use the individualized approach for those for whom the group session was not successful. This strategy could reduce the barrier of adopting and implementing behavioral therapies in their practices and enhance the success rates in managing patients with OAB and UI.1


Paternal Age and Reproductive Health

Parental age is rising around the globe. Here in the U.S., maternal age increased from about 24.6 years in 1970 to around 26.3 by 2014.1,2 While birth certificates are collected at the maternal level, data on paternal age are also queried from the mother. Using those data, investigators have shown that paternal age has also increased in the U.S. over the past several decades.3 In the early 1970s, the average age of the father was 27.4, while it increased to 30.9 in 2015. This increase is seen across all races/ethnicities, levels of educational attainment and regions in the U.S. While the definition of advanced paternal age is hard to precisely define...
PATERNAL AGE AND REPRODUCTIVE HEALTH

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fine, the numbers of births to fathers over thresholds offered by several organizations (including the recent American Urological Association/American Society for Reproductive Medicine Male Infertility Guidelines) are increasing. Indeed, percentages of births to fathers over the age of 40, 45 and 50 now represent 0.9%, 2.9% and 8.9% of all births in the U.S., respectively, compared to half those rates 40 years ago. As we see these demographic shifts, investigators have examined the reproductive consequences.

While the oldest father ever is 96, studies have shown that changes can occur in a man’s fertility as he ages. Examining data from 90 studies including over 90,000 men, Johnson et al reported that semen volume, sperm concentration, total sperm count, morphology, total motility and progressive motility all decline with increasing male age. In addition, DNA fragmentation showed a positive association with paternal age. Moreover, investigators have identified longer times to pregnancy among couples with older male partners.

Paternal age has also been associated with pregnancy-associated complications, including pregnancy loss, birth defects, preterm birth, low birthweight, low APGAR score and time in the neonatal intensive care unit (NICU). Interestingly, paternal age has also been associated with maternal pregnancy complications such as gestational diabetes.

As spermatogenesis continues throughout a man’s life, the chance of transmissible mutations can increase. Investigators report a consistent additional mutation load in the DNA of sperm. In 1912, Wilhelm Weinberg reported an association between birth order and achondroplasia, which was later attributed to paternal age. Additional paternal age effect developmental disorders are now categorized from mutations in proliferation pathways that lead to a competitive advantage from the mutated germ cell lines, described as the “selfish spermatogonial selection.”

In addition, certain childhood diseases and disorders are associated with paternal age. Studies have demonstrated higher risk of childhood cancers (eg central nervous system tumors, leukemia) and adult cancers (eg breast and prostate cancer) in children of older men. Proposed mechanisms include increased DNA damage, increased de novo mutations and aberrant epigenetic regulation among older men.

Neurodevelopmental outcomes have also been studied. Paternal age has been associated with autism, schizophrenia, psychosis and bipolar disorder. In addition, academic achievement of children is associated with paternal age.

In summary, paternal age is rising in the U.S. with relevance not only to the reproductive health of the man, but also the coming generations.


AUA2021: PANEL DISCUSSION

Artificial Intelligence Applications in Urology

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The era of surgical artificial intelligence (AI) has commenced, although the concept is not new, going back to the genius of Alan Turing, who with his decoding skills trainers that are easy to assemble and use. Artificial neural networks, unlimited data storage capacities and computing ability have revolutionised modern day ML systems, making the executions faster, cheaper and more powerful than ever.

A recent review of AI in urology summarised more than 100 articles, two-thirds of which were in diagnostics such as biomarkers in bladder cancer, a third of which were in outcome prediction such as those of PCNL, while the remaining described treatment plans, for example drugs in castration-resistant prostate cancer and a few in surgical skills evaluation (see figure).

Figure 1. AI in Urology. Adapted from Chen et al.4

Drugs for CRPC

Lap skills evaluation

PCNL outcomes

Bladder cancer biomarkers

Diagnosis (83)

Outcome prediction (36)

Treatment plans (8)

Surgical skills evaluation (8)

111 articles were included in the final analysis

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Another application of AI would be its role in democratising surgery by combining low latency ultrafast 5G connectivity with augmented reality. The so-called “Internet of Skills” could make remote robotic surgery, teaching and mentorship easily accessible, irrespective of the location of the expert surgeon.5

Tremendous strides have also been made in the cross-section between surgery and AI to prognosticate patient outcomes, to improve surgeon skill assessment and to one day improve surgeon training altogether. Automated performance metrics (APMs), derived from robotic instrument kinematic data collected during surgery and processed through AI algorithms, can now accurately predict urinary continence recovery days to months after robot-assisted radical prostatectomy.6,7 Ongoing efforts to automate technical skills assessment, utilizing deep learning-based computer vision, will make feedback to surgeons truly objective and scalable.8 Such assessment can soon pinpoint specific deficiencies, such as addressing wrist rotation during suturing. In fact, recent work has found that technical skills assessment are stronger predictors of clinical outcomes than APMs, which are largely measures of efficiency of surgery.9 Naturally, the collective direction with the above efforts is to provide meaningful feedback to surgeons and improve patient outcomes. That will be the natural course of surgical AI in the next 5 years. Time will tell whether these efforts may then serve as stepping stones for semi-autonomous and fully autonomous surgery.10

COVID and Sexual Medicine

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The Coronavirus Disease 2019 (COVID-19) pandemic started in Wuhan, China at the end of 2019 and in a few months had a significant impact on everyone and nearly everything. Workplace practices, the national and local economy, and personal and public health have been greatly affected. Even the way that health care is delivered has evolved at lightning speed. The global pandemic and resulting quarantine has impacted sexual and reproductive health in various ways. COVID’s impact on hypogonadism, erectile dysfunction (ED), male infertility and delivery of reproductive care (telemedicine) are explored below. A panel discussion, “COVID and Sexual Medicine,” will be presented Sunday, September 12 (10:00 a.m. to 10:20 a.m.) at the American Urological Association’s 2021 Annual Meeting Plenary Program.

COVID-19 and Hypogonadism

There is controversy regarding the relationship between COVID-19 and hypogonadism. Early data suggest that low testosterone levels may increase the risk of developing severe COVID-19 symptoms. Studies demonstrate that men with low testosterone levels who acquire COVID-19 are more likely to be admitted to the intensive care unit and have increased mortality. In addition, testosterone has been shown to play a clear role in modulating the immune response. Several studies have shown that testosterone supplementation may play a role in preventing severe COVID-19 symptoms in those men affected by the virus, and thus testosterone may have a protective role in men who are infected with COVID-19. While there may be an association between low testosterone levels and severity of COVID-19 symptoms, we cannot assume causality. The risk factors for hypogonadism, such as obesity and metabolic syndrome, are the same for those who are more likely to suffer from severe COVID-19 symptoms. Thus, hypogonadism may be indirectly linked to the development of COVID-19.

COVID and Erectile Dysfunction

Epidemiological evidence suggests that ED may be up to 3 times more prevalent in COVID patients versus controls. The established relationship between COVID-19 and endothelial dysfunction suggests a highly plausible mechanism that may explain COVID-19 related ED. Viral particles have been identified near the penile vascular endothelium in the context of severe post-COVID-19 ED. COVID-19 also has a complex relationship with androgens. COVID-19 may involve the testicles and can be associated with tissue changes that may portend risk of potentially long-term testosterone deficiency, another potentially important cause of ED. Several studies have in fact reported on low serum testosterone levels in COVID-19 patients and survivors.

Aside from the physiological aspects of COVID-19 infection, the psychosocial toll of lockdown and economic turmoil associated with the pandemic has most certainly had serious effects on men and their partner’s sexual relationships. Enforced proximity may have variable effects on sexual activity, with many persons reporting improved sexual relationships and or increased sexual activity. An increase in consultations and requests for medical management for ED during the pandemic suggests that the lockdown may also have had a negative effect for some couples and/or brought potentially latent relationship issues to the fore for others.

COVID and Telemedicine

In the past year, the pandemic has had a huge impact on every aspect of our lives, and particularly on health care. Due to the various lockdowns and quarantines that came into effect, it became quite difficult to conduct medicine in the same traditional face-to-face approach we have become accustomed to. This has been particularly true for sexual medicine, due to its mostly nonurgent profile.

The silver lining, however, is that these limitations have led to much needed expedited approvals and relaxed regulations regarding the implementation of telemedicine as an acceptable alternative for patient visits. Through CMS (Centers for Medicare and Medicaid Services) reimbursement of telemedicine, waiving of co-payment and removing technology barriers by relaxing HIPAA (Health Insurance Portability and Accountability Act) restrictions, it became much more facile for both doctors and patients to communicate, which has ultimately improved delivery of health care. As a result, data suggest that telemedicine encounters increased exponentially in the past year.

Another aspect of telemedicine that has also seen a significant surge and uptake amongst patients with sexual complaints is the direct-to-consumer (DTC) approach. This has been spearheaded by a few companies that offer online evaluation and screening, followed by delivery of prescriptions such as PDE5-inhibitors. The DTC approach has been particularly appealing to patients as it allows for easier and faster online access to treatments while circumventing the need for physician visits and the stigma associated with sexual dysfunction.

Overall, while the pandemic seems to be finally (hopefully) abetting in the U.S., one thing is for sure: telemedicine is here to stay, and it is our responsibility as sexual medicine specialists to ensure that it continues to be a part of our clinical armamentarium while being cautious of its limitations and dangers. These include lack of access for some patients who do not have broadband Internet access, concerns regarding long-term insurance coverage and the absence of essential aspects of consultations such as physical examinations.

COVID and Infertility

The COVID-19 pandemic wrought by the novel SARS-CoV-2 virus has struck men with a higher disease morbidity and mortality than women. The expression of ACE2 and TMPRSS2 receptors in the male genitourinary tract render these organs vulnerable to COVID-19. Consequently, ED and orchitis can represent outcomes of moderate to severe infection. Furthermore, COVID-19 particles have been isolated in penile and testis tissue in both recovered and deceased patients. Combined with the potential for blood-testis barrier breakdown, this is concerning. Fortunately, sexual transmission risk by recovered patients is extremely low (seminal presence of COVID-19 is only during severe, acute infection). However, there is serious risk of both germ cell and Leydig cell depletion after moderate-to-severe infection, affecting spermatogenesis and leading to hypogonadism. Early research showed statistically significant impairment of sperm parameters in moderately infected men compared to mildly infected or men without COVID, although all values were in WHO normal ranges. Our research demonstrated that sperm parameter impairment was transient likely due to systemic symptoms. Future research studies need to demonstrate...
how COVID-19 virus can linger in the organs long after the initial infection, and the mechanism of immune system evasion. We also need to study whether the effects of COVID-19 infection are transient or permanent.


Image Guided Surgery: A Focus on Simulation Planning in Partial Nephrectomy

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University of Rochester
Mark Bjurlin, MD
University of North Carolina
Richard Link, MD
Baylor College of Medicine
Francesco Porpiglia, MD
University of Turin
John W. Davis, MD
MD Anderson Cancer Center

Exciting new imaging-based technologies including volumetric reconstruction, 3D printing, digital simulation and augmented reality (AR) are changing the way urologic oncologists address solid malignancies. Across all urologic oncologic surgery, advanced imaging plays a key role in staging and therapeutic planning, although applications vary across the 3 most common sites—prostate, bladder and kidney. Although applied mostly in preoperative planning today, surgeons have long desired to bring image guidance into real-time usage for decision making in the operating room. During our plenary session at the 2021 Annual Meeting of the AUA, we will discuss the use of innovative imaging-based technologies in the context of the partial nephrectomy model.

Richard Link from the Baylor College of Medicine will present applications of volumetric reconstruction and 3D printing to partial nephrectomy. These technologies are the most accessible and least costly approach to integrating image guidance into surgical planning. Moreover, this approach can be made patient-specific quite easily without lengthy and expensive custom software development or capital equipment costs. Soft tissue-like models derived from this approach allow presurgical rehearsal of tumor resection and have been shown to have construct validity. As this approach results in a tangible physical model, it can also be very valuable for teaching partial nephrectomy to residents and fellows, and for counseling patients who may not be highly technologically adept.

Ahmed Ghazi from the University of Rochester will take this a step further and demonstrate the transformation of 3D imaging into a patient-specific hydrogel model with the primary aim of replicating the entire operative experience with complete anatomical and pathological details (fig. 1). These models take the 3D virtual reality (VR) and give the surgeon a tangible model to plan. Compared to virtual and 3D-printed models, patient-specific rehearsals (PSR) have the unique ability to optimize the real intervention through genuine practice that addresses potential problems related to a specific patient. In a prospective study, 19 patients with complex renal masses (RENAL [radius, exophytic/endophytic, nearness of tumor to collecting system, anterior/posterior, location relative to polar line] scores >9) randomized to preoperative patient-specific simulations (PSS) (virtual vs PSR) were propensity-matched to a standard imaging group. The PSS group demonstrated lower rates of blood loss, positive margins, mean hematocrit/glomerular filtration rate change and complications translating to a 2-day reduction in hospital stay.

Figure 1. Workflow for fabrication of PSS in surgical management of renal masses. Left to right: DICOM® files of patient axial imaging are exported and each kidney component (tumor, kidney, vasculature, etc.) is segmented to develop a 3D computer assisted design (CAD) → Optimization of smooth CAD to remove any artifacts → CAD is converted into several PSSs including Virtual Reality (3D anatomical modeling software allowing functional manipulation), 3D printing and hydrogel molding (hydrogel replica of patient’s kidney fabricated from 3D printed injection molds is anatomically positioned into abdominal torso and perfused for surgical rehearsal), and Augmented Reality (overlapping digital and real images to help identify hidden anatomical features, tumor location and vascular variations).
hospital stay demonstrating the superiority of PSS. 3

Virtual and augmented reality technologies take this approach a step further (fig. 2). Marc Bjurlin from the University of North Carolina will review 3D virtual reality models, which when reviewed by surgeons during partial nephrectomy have been shown to improve understanding of patient anatomy and consequently influence surgical plans and outcomes. 4 In a randomized clinical trial of 92 patients using an easily accessible 3D format on a smartphone and in VR with an off-the-shelf Google Cardboard-compatible VR headset, patients whose surgical planning involved 3D VR models had reduced operative time, estimated blood loss, clamp time, and length of hospital stay.5 Additionally, 3D VR models have been associated with improved parenchyma preservation, which may contribute to improvement in postoperative renal function. 6

Francesco Porpiglia from the University of Turin (Italy) will demonstrate his methods of intraoperative navigation using a mixed reality (AR) platform. This application overlaps digital and real images to help identify hidden anatomical features, tumor location and vascular variations. 7 Since 2009, AR-3D model applications have been shown to be safe, feasible, and able to influence surgical planning. 8 A recent prospective study compared the AR-3D technology with the standard intraoperative ultrasound guidance during robot-assisted partial nephrectomy performed for complex renal tumors (PADUA score ≥10). 9 The AR-3D technology provided a more accurate intraoperative guidance than the standard ultrasound one, to identify the position of renal vessels (facilitating the selective clamping procedures) and of endophytic and posterior tumors.

In summary, we will have a lively set of presentations moderated by John W. Davis from MD Anderson Cancer Center. The content will interest all surgeons looking for future improvements in image-guided surgery and those intrigued by how these new technologies will change future practice in urologic oncology. We will challenge each speaker to present their best case for why their technology works well, evidence for improvements in partial nephrectomy outcomes, practical considerations, and best arguments for picking one technology over another.  


**AUA2021: PANEL DISCUSSION**

**Batteries and Bladders: Building a Better Tomorrow for the Overactive Bladder Patient**

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Management of the overactive bladder patient can be challeng-
for sacral neuromodulation were 2019 and 2020 as the FDA approved new technologies including smaller implantable rechargeable stimulators and magnetic resonance imaging (MRI)-safe devices. These have increased the options for providers and patients. With the advent of these advances, how do patients and surgeons make the more appropriate choice?

With the FDA approval of the Axonics™ Sacral Neuromodulation System in 2019 there are now 2 approved sacral neuromodulation treatment options in the United States and Europe. The Axonics device is currently advocated for in the 2020 NICE (National Institute for Health and Care Excellence) guidelines as the treatment of choice for refractory overactive bladder in Europe partly due to the cost modelling of a 15-year patient.1 At this time, Axonics offers a rechargeable-only battery option (5 cm³) with a constant current technology. Achieving a battery life of 15 years, the Axonics device has demonstrated significant safety and efficacy in the treatment of overactive bladder.1-4 Axonics has filed a premarket approval for a nonrechargeable option, a primary cell battery.

Medtronic InterStim offers both rechargeable and non-rechargeable battery options. The InterStim II device approved in 2011 is a recharge-free, constant voltage driven battery. Its lithium ion battery averages a 7-year life expectancy. Five-year clinical efficacy and quality of life improvements have been reported in patients with overactive bladder, fecal incontinence and urinary retention with the InterStim device.5 The InterStim Micro™ system approved in 2020 has a smaller rechargeable battery with a lithium titanate cell. This 2.8 cm³ battery has a rechargeable capacity of 15 years with no battery fade.6

MRI compatibility for InterStim II and InterStim Micro with the InterStim SureScan™ lead is conditionally safe for full-body MRI scan with Tesla 1.5 and 3.1 MRI scanners. The Axonics system is also conditionally safe for full-body and head Tesla 1.5 and 3 MRI scanners. An impedance check is required for the Axonics device prior to full-body MRI scans,6,8 but not for InterStim devices. If there is an abnormal impedance detected on an Axonics device then MRI imaging is not recommended.

Rechargeable versus non-rechargeable batteries has become a discussion point for patients seeking sacral neuromodulation therapy. Cost-effectiveness studies have demonstrated that rechargeable batteries have similar efficacy as recharge-free devices at a substantial cost saving compared to non-rechargeable devices. For this reason, single-payer systems in Europe have adopted Axonics as their sacral neuromodulation treatment of choice.3,10

Based on similar efficacies with these devices and a lack of a head-to-head randomized trial, choosing rechargeable versus non-rechargeable neuromodulation treatment options is best made by accounting for patient-related preferences. Lower body mass index patients may benefit from the smaller battery size of the InterStim Micro and Axonics systems. Conversely, patients who desire a more maintenance-free neuromodulation option may choose a recharge-free option. Each device has a different patient and clinician interface, yet the core technology is the same. Ultimately patient selection, counseling, and intraoperative optimal lead placement remain important factors for success and patient satisfaction.

On the horizon are wireless implantable technologies used for tibial nerve stimulation. A small pilot study has demonstrated 79% clinical efficacy with 20 out of 34 participants choosing to continue with a 36-month trial.11 Join us as we take an in-depth look at these technologies and how they can best serve the overactive bladder population during the AUA plenary session, “Nuances in the Selection of Candidates for Sacral Neuromodulation: Which Option Should I Choose?”

2. Lightner DJ, Gomelsky A, Souter L et al: Diagnos- 
9. Axonics Modulation Technologies: MRI Guidelines for the Axonics® System. Irvine, Califor- 

lines_2020.pdf.
10. Nohlet KL, Dmochowski RR, Vaanavada SP et al: Cost profiles and budget impact of rechargeable versus non-rechargeable sacral neuromodu-
THE CHALLENGING PATIENT WITH RECURRENT UTI

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ony-forming units (cfu)/ml urine was defined in a population of asymptomatic women and likely inappropriate to identify infection. Much lower colony counts (10² cfu) can be associated with bacteriuria on catheterization in highly symptomatic patients, but are also commonly seen in healthy individuals as well. Indeed, newer, more sensitive bacterial detection methods, such as expanded clinical cultures, polymerase chain reaction, and next-generation sequencing methods, have revealed that microbes are present in the lower urinary tracts of most individuals, even healthy, asymptomatic subjects, making bacteriuria more of a continuum than a diagnosis.³

The type of bacteria may also matter in defining infection. Certain bacterial strains may protect against pathologic infection⁴ or even ameliorate pain.⁵ And we are learning that repeated antibiotic treatments actually increase the subsequent risk of more severe, more resistant and more progressive infections.⁵ These data suggest that some microbes wiped out by antibiotic may have a role to play in protecting us against more adverse outcomes.

But these realizations leave us with more questions than answers. If bacteria are typically present in the urinary tract and may even be helpful, what defines a true infection? Is it a specific species? Or the expansion of a single organism at the exclusion of others? Or any type of bacteria with certain virulence factors? Is it the patient’s immune response to the microbe that makes it pathologic? Or is it the promotion of pathologic tissue damage that defines an “infection”?

And with the uncertainty about how to define infection itself, how do we know when antimicrobial treatment is necessary? Given the growing epidemic of antimicrobial resistance and a new recognition of the longer-term side effects of antibiotic treatment (“collateral damage”), are antimicrobial medications always the right approach to the management of bacteria in the urinary tract? Are there other approaches that may address the root cause of the microbial dysbiosis locally without systemic negative effects?

And lastly, what is the goal of such treatment: symptomatic relief, eradication of bacteria, avoidance of complications or the prevention of recurrent or progressive infections? These objectives may be very different for each patient population.

In this session, we will begin to face some of these highly challenging questions through an exploration of several common and frequently frustrating clinical situations. Dr. Christina Ching will discuss the management of recurrent UTI in patients with neurogenic bladder, diving into the difficulties of managing infections on a background of chronic bacteriuria. Dr. Daniel Shoskes will face the complicated case of recurrent UTI in men, with a deeper dive into the diagnosis, medical management and surgical treatment of true chronic bacterial prostatitis. Dr. Manoj Monga will confront the common situation of how to manage a non-obstructing, asymptomatic stone in patients with recurrent UTI.

In each of these instances, we can look to these experts for detailed discussion of the available evidence and the knowledge gaps that still remain. Join us for a lively discussion of these challenges that we hope will leave you better prepared to face that next consult for recurrent UTI in complicated patient populations.


AUA2021: PANEL DISCUSSION

Things We Have Learned in the Past 20 Years: The 5 Most Important Tips for the Less Experienced Implanters

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Institute for Urologic Excellence

Hossein Sadeghi-Nejad, MD, FACS
Rutgers New Jersey Medical School and Hackensack University Medical Center

When I was a resident over 50 years ago, I asked one of my mentors where and how should I set up my urology practice. His response was straightforward and simple: Pick a place where you and your wife want to live and hang up your shingle. The local bank will lend you whatever money you’ll need to start your practice, and you’ll be an instant success.

Circumstances have changed dramatically since then, and young urologists who wish to develop a specialty practice in prosthetics must be proactive in developing a niche where they can be considered the referral source for complex cases. Patients are very active online and a website tastefully created will be a must. Search engine optimization will bring your site to the forefront of Google and other searches. Presenting your clinical research results, especially at AUA Section meetings, will tell other urologists in your state and the surrounding ones that you have interest and expertise in such complex prosthetic cases. Informational health talks at your office or local venues will bring in couples who are seeking to know the options for their erectile dysfunction and/or urinary incontinence. A patient satisfied with the result of his prosthetic placement will be extremely helpful in answering the couples’ questions at such meetings.

The experienced implantor should be able to handle complex cases. Knowing both the penoscrotal and suprapubic approaches well is vital, as cases will present where one approach would be more definitively indicated. The same should be said of reservoir placement. After multiple repairs and exchanges of an implant, a favored reservoir site may be inaccessible and an alternate site indicated.

During surgery, investigate thoroughly when signs of an adverse event present. Don’t assume blood in the urine is due to the Foley balloon rubbing against the bladder neck. The reservoir may have been inadvertently placed in the bladder.

Thorough informed consent is critical. Many patients presenting for penile implant placement are

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“peno-focused” and, if their member isn’t close to perfect, they can be very upset. If litigation occurs due to an unwanted outcome, documentation of this informed consent in the record will help the defense attorney considerably. A booklet or standard multipage exposition of the outcomes and expectations of the surgery, which can be given to each patient, will save time and cover this important topic.

John J. Mulcahy, MD

Of the many hard lessons my complications and unhappy patients have taught me, here are some I have found to be the most valuable. First, the patient (and the surgeon) must know the most likely sources of inflatable penile prosthesis (IPP) dissatisfaction, which invariably fall into 1 of 2 camps—false expectations of a hydraulic device (it neither fixes relationships nor restores the full majesty of erections of yester-year) and surgical complications. Second, the surgeon must have a knowledge of (and plan for) whether there is any penile curve to address and where the reservoir can safely go. Third, operative time matters in the grand scheme of infection, so performing certain maneuvers and perseverating on making things perfect can be counterproductive. Fourth, when replacing old uninfected devices, it is very reasonable to leave the old reservoir behind (with certain exceptions) and it pays to test inflate the old cylinders to assess for distal seating of the device, assess for corporal weakness from aneurysms and help make an accurate new corporotomy. Finally, never rush to revision. I rarely will rush to revision. I rarely will

Toby Kohler, MD

Never Implant a Stranger

Twenty years ago, my practice was limited to prosthetics; I was doing 300 IPPs at home and 200 additional procedures on the road proctoring other surgeons. I was confident and considered myself bulletproof. After all, at that time I was one of the highest volume IPP surgeons in the country. I basically implanted anyone who wanted an IPP, frequently booking the surgery on the first visit. Now I realize that some of those hasty surgeries resulted in unhappy patients; they had unrealistic expectations that I did not discover in my rush to book the surgery. I learned “the last guy that touches the patient gets him.” When you perform surgery on a man’s penis whose expectations are not achieved, you generate disappointment for life. “You created Frankenstein; now you have to live with the monster.” These unhappy patients taught me that just because the patient wants an IPP doesn’t necessarily mean they get one.

I have learned to get to know my patients and scrutinize for unrealistic expectations. I also preach realism when describing the postoperative result: “It will be functional for sex but will not look or perform like you were 25 years of age.” I have realized not to operate on the patient who breaks into tears when describing his penis. I have figured out that the patient who admonishes me to “make it as long as you can, Doc” will be high maintenance postoperatively. He will be dissatisfied with his outcome unless you mitigate his anticipations.

For those men who desire the longest member, I have a unique treatment plan that successfully achieves a patient who never questions why his implanted penis isn’t longer. I tell him that to achieve the maximum penile size we use a treatment program that will require delaying his surgery 2 months. Twice a day he places his penis in a vacuum erection device (VED) for 10 minutes without the rubber band (fig. 1). Every week he documents the length of his erection on the VED. His erect penis will lengthen 2–4 cm because we believe the VED erection improves compliance of his tunica.

At the subsequent implantation surgery, we deliberately oversize the patient 2 cm. After his postoperative pain has subsided, we ask the patient to daily pump his prosthesis to the point of discomfort and maintain the erection for 3 hours. This nightly inflation is mandatory for 9 months to fully stretch out the penis. I can honestly say that I have never had a patient who followed this regimen complain about his resultant size. By performing this pre- and postoperative penile rehabilitation, our man has “skin in the game.” He is either satisfied with the result or

Steven K. Wilson MD, FACS, FRCS

As the moderator of this AUA plenary session, I had the privilege of reading my expert panelists’ tips and comments. Not surprisingly, I found them all wise and relevant to my own practice. The following are a few additional lessons I have learned in my years of practice:

1. Though exceedingly rare, have a high index of suspicion for vascular or ischemic complications in patients who have had prior penoscrotal surgeries and circumcision incisions, diabetics with any penile discoloration or persistent pain, and patients complaining of unilateral lower extremity swelling, which may be due to iliac vein compression by the laterally placed reservoir. These patients must be seen and evaluated immediately.

2. When a patient is referred by a colleague to fix an initial failed implant (infection, malfunction etc), remember that the referring surgeon may not do things the way you always do. Check the operative report and have a low threshold to obtain imaging if you are concerned that some hardware may have been left behind. I clearly remember a case when a high index of suspicion and computerized tomography (CT) imaging saved the day and helped identify 2 rear-tip extenders (with frankly purulent fluid sandwiched in between) that had been left behind when the referring surgeon had explanted an infected prosthesis (fig. 2).

3. Placing an implant in a patient with post-priapism erectile dysfunction or one who has previously had a prosthesis explanation because of infection is a significantly more challenging operation and not one for the inexperienced implanter. Do not

Figure 1. Penis expansion with 7 weeks of vacuum therapy (photo courtesy of M. Dineen).
Figure 2. Figure used with permission of Elsevier / The Journal of Sexual Medicine.

THINGS WE HAVE LEARNED IN THE PAST TWENTY YEARS

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Advances in technology and science have greatly influenced the management of urologic cancers over previous decades, and, in doing so, have also evolved the role and approach of the urologist in treatment paradigms. As examples, the clinical implementation of serum prostate specific antigen (PSA) rapidly advanced the role of surgery in early stage prostate cancer, while cross-sectional imaging allowed the identification of early stage renal tumors, opening the door to partial nephrectomy. In the current age of molecular medicine, mechanism-targeting therapies, advanced imaging and machine learning, it is unclear how future advances in science and technology will impact the role of the urologist and surgery in the management of urologic cancers.

The 2021 AUA Annual Meeting plenary session will open on Friday, September 10 with a panel discussion titled The Future of Urologic Oncology: How Will the Role of the Urologic Cancer Surgeon be Affected by Advances in Technology and Science?, led by Samir S. Taneja, MD, Professor of Urology at the NYU Grossman School of Medicine. A panel of urologic oncologists with particular expertise in evolving technologies and therapeutic approaches will discuss the impact of such scientific advances on urologic oncology practice through targeted talks reviewing the impact of genetics in prostate cancer, immunotherapy in kidney cancer, multimodal therapies in bladder cancer and molecular imaging in urologic malignancy, followed by a panel discussion on the role of surgery in future management paradigms.

Over the last 5 decades, the explosion of modern tools, technologies and methods for genetic sequencing even a few nucleotide base pairs led to important advancements and transition to genomic medicine. Increasing DNA sequencing throughput, along with decreasing cost, has enabled the incorporation of genomic advances into routine clinical care. Simpala Salami, MD, MPH, Assistant Professor of Urology at the University of Michigan will discuss the role of prostate cancer genetics/genomics in candidate selection for therapy. Tissue-based prognostic assays, such as Prolaris®, Oncotype DX® and Decipher®, have already been shown in validation studies to improve the performance of multivariable clinicopathological models for predicting adverse surgical pathology and long-term oncologic outcomes. Such advances demonstrate the earliest application of genetics in patient selection, with future advances potentially expanding indications for surgery within multimodal approaches. Obstacles to progress do exist, however, in that genetic variation including inter-focal and intra-focal genomic tumor heterogeneity has been reported in several malignancies, including prostate, kidney and lung cancers, and has been shown to affect oncologic outcomes. For example, in a recent genomic characterization of localized prostate cancer, multiple subclones of cancer were found in the majority of patients. Multiclonality among cases of localized disease was associated with a higher risk of relapse, suggesting that biomarkers that can capture tumor heterogeneity are needed to facilitate accurate risk stratification and treatment selection, a known limitation of currently available tissue-based biomarkers.

Molecular imaging is another area of rapid advances in the characterization of urologic cancers, with most recent innovations falling within the management of prostate cancer. Edouard Trabulsi, MD, Professor of Urology at Jefferson Medical College, will discuss

AUA2021: PANEL DISCUSSION

The Future of Urologic Oncology: How Will the Role of the Urologic Cancer Surgeon be Affected by Advances in Technology and Science?

Samir S. Taneja, MD
NYU Grossman School of Medicine and Tandon School of Engineering

the impact of molecular imaging on urologic oncology. While a number of promising ligands have emerged as tools for improving detection of occult metastasis, the advent of prostate specific membrane antigen (PSMA)-targeting positron emission tomography (PET) ligands has the potential to greatly alter conventional paradigms for approaching high risk and recurrent prostate cancer.11–13 Recent approval of the 18F-DCFPyL-PET ligand by the U.S. Food and Drug Administration (FDA) was based on the outcomes of the CONDOR and OSPREY trials demonstrating the ligand carries strong positive predictive value (PPV) for nodal disease detection, even at relatively low PSA. In the CONDOR study, 18F-DCFPyL-PET computerized tomography (CT) was evaluated in men with recurrence after primary treatment.14 Management was altered by the findings of the study in two-thirds of men, with approximately 85% accurate disease localization at median PSA of 0.8 ng/ml. In the OSPREY study, among men with high risk localized disease, 18F-DCFPyL-PET demonstrated an 86.7% PPV and 83.2% negative predictive value (NPV) for nodal metastasis, greatly improving preoperative assessment of metastatic risk.15 The findings of these studies demonstrate the ability of this new tool to alter treatment selection and surgical planning. Thematically, molecular imaging offers such potential beyond prostate cancer, empowering the efficacy of surgical interventions through better selection of candidates and individualized surgical planning. Prognostically, molecular imaging may provide future insights into early administration of adjuvant or multimodal therapy.

Immunotherapy and biologic approaches to advanced kidney cancer have been the focus of the urologic community for the past 5 decades. Dating back to the early 1980s, there has been a continual interplay between surgery and biologic therapy in the management of disease. While focus on immunotherapy declined with knowledge of the genetic mechanisms underlying renal carcinogenesis and the development of anti-angiogenic agents and tyrosine kinase inhibitors, recent efforts to develop agents targeting the PDL-1 checkpoint have resulted in a renewed interest in immunotherapy. Brian Shuch, MD, Associate Professor of Urology at the UCLA School of Medicine, will discuss advances in biologic therapy for renal cancer and the impact such advances may have on future practice. Combining immunotherapeutic and biologic agents has emerged as a new frontier in therapy,16–18 allowing the urologic community to re-test the efficacy of agents in the neoadjuvant, adjuvant19 and metastatic setting. Underpinning the advances is the swaying pendulum of the role of cytoreductive and consolidative surgery in the management of metastatic disease. More efficacious systemic interventions with new therapeutic targets such as HIF-2a21 potentially further open the door to more effective use of surgery within multimodal approaches.

The development of PDL-1 checkpoint targeting agents has also had great impact on the management of urothelial cancers, with particular influence on defining new paradigms for multimodal treatment.22–25 Cheryl T. Lee, MD, Professor and Chair of Urology at the Ohio State University School of Medicine, will review recent advances in multimodal therapies for bladder cancer. Historically, surgery has remained the mainstay of treatment for high risk and invasive bladder cancers. Cisplatin-based chemotherapies have improved surgical outcomes and potentially expanded the pool of surgical candidates, but the role of surgery in advanced disease has been limited to palliation. Recent studies demonstrating durable efficacy for PDL-1 checkpoint inhibition in patients with advanced bladder cancer offer potential to consider novel paradigms with alternative roles for surgery in consolidation and alternatives to surgery in poor risk candidates through multimodal bladder sparing protocols, and improved efficacy of surgery in those with earlier stage disease through neoadjuvant therapy.26 The recent approval of pembrolizumab in a bilateral Calmette-Guérin (BCG)-refractory nonmuscle invasive bladder cancer demonstrates potential to improve on outcomes in all stages of disease.27

Setbacks and Operative Solutions: Bladder Injury during Abdominal Sacrocolpopexy—Implant Mesh or Not?

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Jennifer T. Anger, MD, MPH
University of California San Diego

Management of unintentional cystotomy during abdominal sacrocolpopexy presents a challenge to even the most experienced pelvic surgeon. The decision-making pathway that guides the surgeon through this intraoperative setback is based on preoperative patient counseling, the location and size of the cystotomy, and the availability of fascia and/or available tissue as an interposition layer or as an alternative to mesh.

A comprehensive preoperative discussion with the patient to review all the common approaches to apical prolapse repair is the cornerstone of management of intraoperative complications. It is paramount that the surgeon have a clear understanding of the patient’s preferences. Some patients are adamant about avoiding a second surgery (and choosing sacrocolpopexy), while others desire a vaginal approach with a shorter convalescence even if it may require a repeat operation in the future. Patients must be counseled on the possibility of deviating from their most preferred surgical plan if there is a bladder injury or other intraoperative event.

It is often feasible to complete the mesh sacrocolpopexy as planned after cystotomy closure. Most small bladder injuries can be safely closed primarily and allow sacrocolpopexy with mesh to be resumed. The cystotomy should closed in 2 layers using absorbable sutures such as 2-zero polyglandin, followed by tissue interposition utilizing either peritoneum or omentum. Sometimes there is abundant perivesical fat that can be harvested to cover a large cystotomy. The possibility of complications, such as mesh erosion into the bladder and vesicovaginal fistulas, must be considered when repairing a cystotomy at the time of sacrocolpopexy. Placing mesh near the site of cystotomy can potentially increase the risk of such complications.

We must always consider a conservative, alternative approach and avoid mesh insertion when there is a large cystotomy or attenuated tissue planes. If the cystotomy is located at the bladder base near the site of mesh attachment, it is best to either abort the planned mesh sacrocolpopexy or consider alternative repair. If the patient has preoperatively consented to alternative approaches, the case can be converted to transvaginal repair or an open sacrocolpopexy using autologous fascia, usually harvested from anterior fascia at the time of laparotomy incision. If the anterior fascia is attenuated, one can also harvest fascia lata from iliotibial band. Cadaveric fascia or other biologic graft material (such as cadaveric dermis) can provide a nice alternative that allows for completion of the operation robotically. Other hybrid alternatives, although not well studied in the literature, can also be considered, for example placement of biologic graft as the anterior leaflet of the Y (the portion of the Y mesh in contact with the bladder) with mesh as the remainder of the Y supporting the posterior vaginal wall and sacrum. Another option is placing the Y mesh as planned, but utilizing an additional layer of biologic graft between the anterior mesh and the bladder. Lastly, robotic uterosacral suspension is a successful apical suspension that avoids mesh usage.

When patients elect to have pelvic organ prolapse repair, the stakes are high to achieve the best outcome with the least invasive approach. Bladder injury during vaginal vault dissection can sometimes be unavoidable, and one should have a clear algorithm for management that includes careful preoperative guidance and a skill set for alternative repair.

Open Radical Prostatectomy Is No Longer Relevant in Urologic Residency

Li-Ming Su, MD
University of Florida College of Medicine

Judd Moul, MD, FACS
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Judd Moul, MD

Commentary:

To an urologist in my generation who trained in the late 1980s, this seems like a shocking topic to debate! However, as I reflect further, it really does deserve our attention because open prostatectomy is rapidly disappearing. If open radical prostatectomy (RP) experience does matter for urology trainees, the field needs to react and make sure there are experienced open prostatectomists at high-volume centers to carry on the art. If open RP becomes a historical footnote, then we seem to be well on our way there in 2021.

Historically, the Golden Era of open RP was from the mid to late 1980s until about 2005. Dr Patrick Walsh ushered in this era with the discovery of the neurovascular bundles and the nerve-sparing technique. Other prominent urological surgeons, such as Peter Scardino, Bill Catalona, Tom Stamey and many others, further popularized and modified the technique and created very high volume practices and training programs that rapidly led to improved urinary and sexual outcomes. Despite this, the golden era was only about 20 years long before the robotic technique (RALP) started to dominate. This meant that only about 10–15 urology graduating classes were trained during the time where they could have gone out and started an open practice. This second generation did include the likes of Herb Lepor, Joel Nelson, Eric Klein, Peter Carroll, Jay Smith and others who took up the craft. Some of these superb surgeons switched to the RALP, further diminishing the chances of the open RP to survive. Now, in 2021, the remaining high-volume open RP surgeons, of whom I am one, are in the 60s age group and nearing the end of our surgical careers. Despite the common and undisputed knowledge that volume and experience are the main drivers of outcomes, the open
RP has largely been abandoned by the public and most urological surgeons since the RALP era began. If there is a value to open RP in the training of urological residents, we need to take action now. Some have proposed open surgery fellowships, but this has not formally materialized to my knowledge. In a few years, there will be no open RP surgeons left, having gone by the wayside just like radical perineal prostatectomy and straight laparoscopic radical prostatectomy.

Having said this, I believe there is value in our trainees continuing to learn open RP skills. First, knowing and understanding the anatomy from directly seeing and feeling it makes a better overall well-rounded surgeon. Open RP skills help to hone trauma surgery skills, the skill for open simple prostatectomy, radical cystectomy and any open bladder surgery. As other open surgery in urology diminishes, the open RP experience for a resident or fellow becomes even more valuable. Interestingly, as I write this, I was just called to the Durham VAMC to staff a bladder rupture. The exposure will be identical to my RP approach, and my Chief Resident just completed a 4-month rotation with me so he is very comfortable with the technique.

Of course, I am biased in my valuing open RP for resident training. But I do not have any true objective evidence to show that open RP experience makes a better urology graduate. I have tremendous respect for Professor Su and I wish I could beat him on this debate, but I am not sure. There are quite a number of urology training programs already that have no open RP surgeons. Those trainees seem to graduate just fine and enthusiastically enter our field. There is certainly no argument that open RP and the pioneers who perfected it have allowed RALP surgery to take hold and to quickly flourish.

In preparing for this debate, we went to Twitter: “In your urology training program, is there any faculty member still doing open RP at a volume of more than 25 cases per year?”

- Yes: 31% (48)
- No: 69% (106)

“Do you think there is any value in retaining open RP experience in urology training programs?”

- Yes: 63% (60)
- No: 37% (35)

“Among practicing urologists 35 to 50 years old, is there anyone doing more than 25 open RP cases per year?”

- Yes: 13% (10)
- No: 87% (70)

“At your program, what percentage of RP cases are performed by open technique?”

- <10%: 73% (69)
- 10%–30%: 14% (13)
- 31%–60%: 4% (4)
- >60%: 7% (6)

In summary, there is discordance between the perceived value of open RP training and access to it. While a clear majority of respondents (63%) believed open RP training is valuable, only a minority of cases are performed with this technique and even fewer by high volume masters of the craft (13%). In conflating a lack of access to training with its relevance, we risk producing an era of trainees who—despite a desire to learn open RP—will be unable to truly master this approach. Conscious effort on the part of training programs and the advisory bodies overseeing them will be needed to keep access to this technique available for both trainees and patients.

Li-Ming Su, MD

Commentary:

It is indisputable that the introduction of robotic surgery into the field of urology stands among a handful of events that have truly transformed the field. Just as extracorporeal shock wave lithotripsy, ureteroscopy, anatomical nerve-sparing prostatectomy, medical therapy for benign prostate hyperplasia and androgen deprivation therapy for prostate cancer are recognized as sentinel events leading to a complete frame shift in urological management of disease, robotic prostatectomy has likewise been rapidly adopted, now overshadowing traditional open retropubic prostatectomy. As a consequence of the current widespread practice of robotic prostatectomy as the dominant surgical approach for prostate cancer, it is only natural that open radical prostatectomy has had a significantly diminished role in resident education and training as compared to decades past. In this debate, I will do my best to remain impartial and unbiased, especially since I was trained as an open prostatectomist well before becoming a pioneer in minimally invasive prostatectomy. I will seek to convince the audience that this shift toward robotic from open prostatectomy is not only practical but represents a new training paradigm.

Training our residents to perform robotic prostatectomy is pragmatic as there is evidence that patients who choose to undergo prostatectomy for the treatment of prostate cancer are more likely to choose the robotic approach over open surgery. Furthermore, recent data confirm a growing trend with robotic prostatectomy as the dominant surgical technique for the treatment of prostate cancer in the United States. The attributes of enhanced magnification and superior high-definition, 3-dimensional visualization associated with robotic surgery has allowed surgeons to modify the surgical technique based upon the anatomical foundations first established in open surgery, including enhanced quantitative and qualitative cavernous nerve preservation to improve postoperative sexual function and improved mucosa-to-mucosa vesicourethral anastomosis with various reconstructive techniques to improve postoperative urinary continence. These important modifications have resulted in outcomes (both oncologic and functional) equivalent to and in some cases even better than open surgery, with the added patient benefit of reduced blood loss, pain and recovery. Where I will agree with Dr. Moul is that surgeon volume and experience are undoubtedly the most important factors in providing an optimal patient outcome. With this in mind and with the overwhelming shift towards robotic prostatectomy, a greater emphasis needs to be placed on the quality of robotic surgical training during residency and fellowship in order to help our learners achieve optimal outcomes for their patients.

Training learners how to perform robotic prostatectomy is not only practical, but also represents a paradigm shift from the days of open surgical training. This assertion is supported by the simple fact that although the anatomy has not changed, robotic prostatectomy at its essence is a very different operation from open surgery and requires a very different set of skills. The simple fact is that the loss of kinesthetic feedback in robotic surgery requires that a surgeon rely more upon visual cues than tactile feedback to perform a meticulous operation. This is supported by the abundance of research in the occupational and physical therapy arena involving patients with sensory and proprioceptive losses who are trained to rely upon visual cues to navigate their activities of daily living. Furthermore, there is growing evidence in our own literature that novice surgeons learn and perform differently than expert surgeons when performing minimally invasive surgery. Objective kinematic motion studies show that expert surgeons are far more efficient in their instrument and camera movements as compared to novice surgeons who show more erratic patterns when completing steps of robotic prostatectomy. Novel eye tracking studies have shown that the visual fixation is higher and cognitive load lower in expert surgeons as compared to novice surgeons when performing simulated and live laparoscopic procedures. Functional brain imaging studies of surgeons undergoing motor and visual laparoscopic tasks demonstrate that novice surgeons utilize regions of the cerebral cortex involved more with implicit and visuospatial learning, whereas these same regions are relatively deactivated in the expert surgeon. In sharp contrast, experts who presumably have already acquired learning of how to perform the task relied more upon the motor cortex of the brain involved with effective execution of the laparoscopic
OPEN RADICAL PROSTATECTOMY IS NO LONGER RELEVANT IN UROLOGIC RESIDENCY

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task than novice surgeons.1 Taken together, these studies suggest a neurological underpinning to how minimally invasive procedures are learned between surgeons of different levels. Furthermore, it suggests that enhancing “brain training” through simulation exercises in various settings (dry lab, animate, augmented/virtual, high fidelity 3-D models) may be critical and perhaps even more important than exposure to open prostatectomy to help learners achieve proficiency in performing robotic prostatectomy.

Lastly, to say that exposure of residents to open prostatectomy is no longer relevant is perhaps an overstatement and an oversimplification. Exposure to open surgery in all areas of urology is a good thing, but the undeniable fact is that resident exposure to open radical prostatectomy is declining rapidly and simply becoming less relevant. Nevertheless, we should remember that our trainees are still afforded the opportunity to learn about the periprostatic anatomy and tissue planes through other open surgical procedures, ie open cystectomy and simple prostatectomy, in lieu of routinely performing open radical prostatectomy. Although the giants of open nerve-sparing prostatectomy who came before us were critical in laying the anatomical foundations of where robotic surgery has taken us today, I would submit to my colleagues that we have entered into a different era of advanced technology that requires a pioneering spirit and intentional effort at finding new and creative ways to train the next generation on these techniques, which likely will require a completely different approach than that used for open surgical training.

AUA2021: COMPLEX CASES

AUA Plenary Preview: Management of Post-Prostatectomy Incontinence

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Urinary incontinence remains an impactful complication following prostate cancer treatment. The incidence of urinary incontinence following radical prostatectomy varies widely, from 1%–40% depending on the length of followup and definition of incontinence.2 Despite recent trends with respect to declining rates of prostate-specific antigen screening, increased active surveillance and refinements in curative therapies, post-prostatectomy incontinence (PPI) remains and will likely always be a clinically relevant entity.3 The persistence of PPI is related (at least in part) to a trend toward treating higher grade and stage prostate cancers with prostatectomy, which are well-established risk factors for incontinence and an associated increase in the rate of local salvage therapies in particular radiotherapy and high-intensity focused ultrasound (HIFU).4 This practice pattern of increasing prostatectomy use in high-risk cancer and salvage local therapies has resulted in increased complexity and complication risk of patients presenting with and undergoing treatment for PPI.5

Determining the best course of treatment for these increasingly more complicated cases can be challenging especially given the overall poor quality of evidence. With a lack of effective nonsurgical therapy, patients are left with little choice other than surgical intervention. Woefully, the majority of studies in this domain are retrospective, single-centered and absent of any completed prospective randomized studies evaluating surgical outcomes. There is also a lack of consensus on what constitutes success, which makes comparison between studies and centers difficult. Lastly, all current surgical devices are effective but flawed in some form or another, especially when concurrent radiation is present.6

Insertion of an artificial urinary sphincter (AUS) remains the gold standard for treatment of PPI, but there are several ongoing drawbacks to this procedure, including a continent rate of 75%–80% (incurring a 20%–25% incontinence rate), a revision rate of 15%–60% at 7–10 years, requirement for an intra-abdominal pressure regulating balloon, a mechanical control pump requiring manual dexterity and a lack of adjustability (without a re-operation).7 Despite patient satisfaction rates consistently approaching 90%, these drawbacks combined with an overwhelming patient preference to avoid a mechanical pump has led to the development of male slings, which unfortunately are less successful when applied to the increasingly complex cases of PPI.

When caring for a patient with concurrent lower urinary tract pathology and associated increased risk of AUS complications, several key questions and concerns may arise when traveling on the road to continence. The best way to optimize the lower urinary tract prior to surgical intervention warrants discussion and attention. For example, when is it safe to offer treatment for incontinence to patients with intermittent hematuria due to radiation cystitis, previous urethral stenosis, previous urothelial cancer or prior intravesical Hem-o-Lok Clip® erosion? The ideal timing of disease recurrence prior to surgery for an optimal outcome needs to be balanced with patient quality of life. Information regarding risk factors for AUS or sling complications is critical prior to intervention.

Sometimes, despite a surgeon’s best preventative efforts, once a device is placed complications related to radiation cystitis, dystrophic calcification or urinary tract fistula can arise de novo. Management of episodic gross hematuria with clots or obstructing calcifications may risk the functionality of the AUS cuff and integrity of the overlying urethral mucosa. History of a bladder neck contracture requiring stabilization prior to AUS placement, a rigid/pale bladder neck and the identification of calcifications are risk factors for decompensation of the outlet. Patient complaints of perineal pain relieved by sphincter deactivation should be investigated with a high suspicion for compromised bladder neck integrity. Recognition of these signals can allow for intervention before the development of major complications and significant morbidity for the patient. It is critically
important to be aware of the clinical spectrum of these troublesome scenarios, viable treatment options and the evidence behind them.

Additionally, when a patient treated for PPI unfortunately develops a complication such as urethral erosion and they desire further treatment, understanding the viability of further intervention, modifications in technique and evidence to reduce the risk of further cuff erosion are important. When is it best to perform a trans-corporal cuff placement as opposed to reducing the pressures in the pressure-regulating balloon? Is it ever indicated to insert the AS device as a staged procedure? How many times should the device be replaced following repetitive erosion? Patient discussion determining the limits of surgical intervention and deciding when “enough is enough” is a delicate issue and often best approached systematically.

Please join us on Monday, September 13, 2021 from 8:35–8:55 a.m. as we delve into the depths of complex scenarios in the management of post-prostatectomy incontinence.

The plenary session “Second Opinion Cases: Post Renal Transplant Ureteric Complications” will take place on Monday, September 13 (10:00–10:20 a.m.) at the AUA Annual Meeting.

Urologists will always have a role to play in the care of kidney transplant recipients. A small group of urologists continue to participate as the primary surgeons at a number of centers across the United States. While the majority of these operations are performed by our colleagues from general surgery, urologists are often consulted to aid in the evaluation and treatment of complications that pertain to the urinary tract. On this basis, the principles of complication management continue to be of interest to the urology community at large.

The plenary session at AUA 2021 will have a special focus on the management of posttransplant ureteric complications. Leading experts in the field will present a variety of common case scenarios to attendees. Dr. Neal Rowe will be moderating a discussion between panel members Dr. John Barry, Dr. Jeff Veale and Dr. Obi Ekwenna.

The aim of this year’s session is to introduce strategies to evaluate both early and late ureteric compromise. Common case presentations including peri-ureteric fluid collections, hydropneumophrosis and pyelonephritis will be highlighted.

We will review the utility of imaging as part of the diagnostic algorithm and suggest a role for percutaneous intervention both in the diagnosis and treatment of ureteric disease. Short-term treatments and long-term solutions will be discussed.

These “Second Opinion Cases” will prove to be of interest to residents, fellows and all general urologists who are consulted on ureteric complications in kidney transplant recipients.

Given the lack of objective evidence linking nonobstructing stones to a pain pathway in the kidney, and the morbidity of open stone surgery, surgical removal of nonobstructing stones for the indication of pain historically was not recommended. As surgical technology for stone removal became less invasive, investigators began to explore whether treatment of nonobstructing stones was associated with pain relief. In 1988 Coury et al reported that 25 of 26 patients had complete resolution of pain after percutaneous stone removal.

Patients with chronic flank pain and nonobstructing renal calcifications often seek second opinions on a quest to find a treatment that can ease their pain. It has been hypothesized that nonobstructing stones, particularly papillary calcifications, could cause renal collecting duct obstruction and this could be perceived as painful. Despite the lack of experimental support for this hypothesis, it has been further posited that surgery to release and remove these calcifications, and therefore eliminate the source of obstruction, could alleviate pain.

Medullary Sponge Kidney and Non-Obstructing Stones Causing Pain

Jodi Antonelli, MD
UT Southwestern Medical Center

Given the lack of objective evidence linking nonobstructing stones to a pain pathway in the kidney, and the morbidity of open stone surgery, surgical removal of nonobstructing stones for the indication of pain historically was not recommended. As surgical technology for stone removal became less invasive, investigators began to explore whether treatment of nonobstructing stones was associated with pain relief. In 1988 Coury et al reported that 25 of 26 patients had complete resolution of pain after percutaneous stone removal.
nephrolithotomy or shock wave lithotripsy to treat nonobstructing stones in the setting of chronic pain attributed to the kidney.\(^1\) The authors noted pain from calyceal stones was different from renal colic, specifically describing it as located over the kidney and nonradiating, constant rather than spasmotic and often presenting as vague or anterior in location, making it easily confused with musculoskeletal or gastrointestinal pain.

As technology for the endoscopic management of stones continued to progress, flexible ureteroscopy offered an advantage over shock wave lithotripsy, with the ability to perform laser lithotripsy and basket extraction improving the stone clearance of adherent papillary and submucosal stones. In 2000 Kerbl and Clayman were the first to report on rendering a patient stone-free with resolution of pain utilizing flexible ureteroscopy with laser lithotripsy for the treatment of submucosal stones.\(^3\)

Taub et al retrospectively evaluated the efficacy and durability of ureteroscopy with holmium laser papillotomy to treat 20 patients (27 renal units) with chronic pain and papillary calcifications in the absence of free renal or ureteral calculi.\(^2\) The authors described a technique of superficial ablation of the renal papillae with a goal of unobstructing collecting tubules, releasing trapped calculi and, in so doing, reducing hydrostatic pressure in the tubules. A substantial improvement in pain was reported after 83% of procedures. The authors found when fewer than 7 papillae were treated, the mean time to improvement of pain was shorter (1.5 versus 4.6 weeks, p=0.02). Overall satisfaction with the procedure was 93%. Inherent to any retrospective study, their data were limited by incomplete followup and lack of randomization, making it impossible to assess the impact of placebo effect on their results.\(^3\)

In addition to this single center report, a multicenter retrospective review was conducted to assess longer term safety and durability of ureteroscopic laser papillotomy for the treatment of chronic pain associated with renal papillary calcifications.\(^4\) A total of 146 ureteroscopic laser papillotomies performed in 50 patients over 10 years at 3 institutions were included in the final analysis. Significantly less pain for at least 3 months was noted after 83% of the procedures, with 60% of patients reporting a mean remission time of more than 1 year. There was no significant decrease in renal function after the procedure. New onset hypertension was noted in 6% of patients. The authors cautioned that in order to maximize success, a full assessment of other sources of pain should be pursued, and only those without other cause of pain and with radiographic evidence of papillary calcifications or intraductal stones (see figure) should be offered ureteroscopy with laser papillotomy.\(^5\) Xu et al found similar results with pain relief using ureteroscopy with laser papillotomy in 25 patients with medullary sponge kidney (MSK) with radiographic evidence of intraductal papillary calculi.\(^2\)

While these retrospective results are compelling, it is important to recognize that even in MSK patients, where the physiological link is the strongest, there is a lack of experimental data to support the compelling hypothesis of pain caused by "micro-hydronephrosis" occurring in obstructed papillary collecting ducts.\(^6\) Certainly in patients with Randall’s plaque and adherent stones a physiological explanation for the mechanism of pain relief with stone removal has not been described. Despite the available, albeit limited, data do support a potential benefit of treatment in properly selected patients. While complete papillotomy has been shown to impair renal concentrating ability and increase free water clearance in animal models,\(^7\) renal papillotomy as described in these retrospective series had favorable short and longer term safety outcomes. Furthermore, techniques akin to papillotomy, specifically renal papillary biopsy and ablation of superficial papillary cell layers, have been reported as safe and feasible.\(^8,9\) Ultimately, with available evidence there is not a clear answer on how best to treat these patients, but a better understanding of proper patient selection and the nuances of surgical technique can maximize the success of treatment when a patient comes to you for a second opinion regarding this challenging but not uncommon situation.\(^10\)

\(\text{References:}\)

AUA2021: SECOND OPINION CASES

Pediatric Bladder Dysfunction

Christopher S. Cooper, MD
University of Iowa Hospitals & Clinics, Carver College of Medicine

Presenters:
Seth Alpert, MD
Nationwide Children’s Hospital, The Ohio State University College of Medicine
Stacy Tanaka, MD, MS
Vanderbilt University Medical Center
Israel Franco, MD
Yale-New Haven Children’s Hospital, Yale School of Medicine

I am honored to moderate a 20-minute panel session at the American Urological Association’s 2021 Annual Meeting entitled, “Second Opinion Cases: Pediatric Bladder Dysfunction.” This session will include 3 brief but rather unique case presentations with an emphasis on take-home points that are applicable to both general and pediatric urologists.

The panel consists of 3 outstanding experts in pediatric bladder dysfunction: Seth Alpert, MD, is a pediatric urologist at Nationwide Children’s Hospital and Clinical Associate Professor of Urology at The Ohio State University College of Medicine; Stacy Tanaka, MD, MS, is a pediatric urologist at Monroe Carell Jr. Children’s Hospital, Director of the Spina Bifida Clinic and Professor of Urology at Vanderbilt University Medical Center; and Israel Franco, MD, is Professor of Clinical Urology and Director of Yale Medicine Pediatric Bladder and Continence Program.

Pediatric bladder dysfunction is common and constitutes up to 40% of pediatric urology clinic visits. It is also a condition frequently seen and treated by general urologists. The most typical manifestations of pediatric bladder dysfunction include incontinence as well as urgency, frequency and recurrent UTIs. Pediatric bladder dysfunction is often associated with bowel dysfunction. Over the last several decades, urologists have become very familiar with the need to aggressively treat undiagnosed constipation, which often results in improved bladder function and urinary symptoms as well as a reduction in UTIs. Additionally, the utility of timed voiding is well known by urologists and is routinely recommended as initial management for common urinary complaints, obviating the need for medications in many children.

The focus of this session will be to review some atypical presentations of pediatric bladder dysfunction. All of the patients described in these case presentations were refractory to the standard treatment methods and had been referred to one of our expert panelists. Atypical symptoms include pain as well as stress incontinence and severe lower urinary tract symptoms despite maximal medical management. These cases will not only demonstrate the need for urologists to consider bladder dysfunction as the potential cause of these atypical presentations but also will cover the pathophysiology causing the symptoms and describe the successful management methods employed by each of our panelists.

We anticipate that the session will be engaging, educational and provide each audience member with at least several new “take-home” points for their own practices. For these reasons, we hope to see each of you in attendance at this plenary session, Sunday morning, September 12.


AUA2021: SECOND OPINION CASES

Role of Medical Therapy in the Treatment of Azoospermia Following Testosterone Therapy

Larry I. Lipshultz, M.D.
Baylor College of Medicine
Sarah Vij, MD
Cleveland Clinic Urology
Peter N. Schlegel, MD
Weill Cornell Medicine

Case Study

Historically, testosterone is a bad contraceptive—unreliable, inconsistent and with poor compliance. Ironically, its use as a performance-enhancing drug leaves many younger men seeking medical advice for their infertility and resultant substandard semen quality following testosterone use. Exogenous testosterone and its aromatized byproduct, estradiol, suppress spermatogenesis, with 65% of men from one contemporary contraceptive series experiencing azoospermia. All testosterone preparations can do this—topicals, oral and injectables—some more quickly and more effectively than others. As serum testosterone and estradiol increase with exogenous testosterone use, there is a resultant negative feedback on the androgen and estradiol receptors in the hypothalamus and pituitary, resulting in decreased concentrations of FSH and LH. Spermatogenesis is primarily regulated by the synergistic action of FSH on Sertoli cells combined with high intratesticular levels of testosterone. Interestingly, the Sertoli cells alone contain receptors for both FSH and testosterone.

There are 2 general approaches to treating azoospermia secondary to testosterone or other exogenous androgen-suppressed cases of impaired spermatogenesis. Both include reversal of the gonadotropin-suppressive effects of testosterone or other androgens. The cessation of testosterone as well as the manipulation of direct or indirect pathways for reestablishing gonadotropin stimulation of spermatogenesis will be addressed by our 2 treating physicians.

Opinion 1: Sarah C. Vij, MD

Allow the hypothalamic-pituitary-gonadal (HPG) axis to reestablish a baseline by offering only symptomatic care.

Fortunately, the great majority of men on exogenous testosterone therapy will recover spermatogenesis without intervention apart from

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Role of Medical Therapy in the Treatment of Azoospermia Following Testosterone Therapy

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Opinion 2: Peter N. Schlegel, MD

Reestablish normal gonadotropin production with either direct replacement or indirect stimulation.

The primary adverse effect of exogenous androgens on spermatogenesis is via the suppression of LH and FSH production by the pituitary. Intervention is intended to increase LH production by the pituitary or LH-like action through hCG treatment. This can be provided with hCG injections while testosterone/exogenous androgens are still being received or to induce pituitary production of LH by manipulating estrogen stimulation of the pituitary with selective estrogen receptor modulators (SERMs; eg clomiphene) or aromatase inhibitors (eg anastrozole). The induction of LH production is possible because the pituitary senses lower circulating estrogen levels and increases LH production. Aromatase inhibitors decrease testosterone-to-estrogen conversion, resulting in lower estrogen levels in circulation, again enhancing pituitary production of LH. These agents will shorten time to recovery of spermatogenesis after exogenous testosterone has been stopped, but they can also be used for men receiving exogenous testosterone, allowing increased LH and FSH production.

For men who do not symptomatically tolerate withdrawal of exogenous testosterone, hCG can be provided while continuing exogenous androgens to stimulate return of spermatogenesis.4 hCG monotherapy treatment has the disadvantage of effecting suppression of FSH production, which limits spermatogenic potential to some degree. FSH replacement can also be used, but that treatment is expensive, although less so with compounded FSH.

Monitoring of endogenous testosterone production is more complicated with maintenance of exogenous testosterone treatment, but it is possible to detect endogenous testosterone production by measuring circulating 17-OH progesterone levels, which reflects the endogenous testosterone pathway and is the best measure of intratesticular testosterone production.5 Measurement of 17-OH progesterone allows earlier monitoring of the efficacy of treatment for men being treated to enhance return of spermatogenesis; hormonal changes can be detected within a month or less, far before changes in semen analysis. For men who cease exogenous testosterone use, measurement of serum testosterone concentration following SERM or aromatase inhibitor treatment provides early feedback on the adequacy of endogenous testosterone production. Doses used for hCG may vary from 500 IU daily to 2500 IU twice a week, with 50 mg every other day for clomiphene and 1 mg daily for anastrozole. A wide variety of treatment doses have been used clinically, and treatment may need to be adjusted based on individual patient hormonal response.

Conclusion

The case described herein will doubtlessly become increasing common. Several additional interventions are suggested. If you are the treating physician who first starts the testosterone therapy, try to get a baseline semen analysis in all men in their reproductive years. This serves as a target when starting a reboot protocol and makes it much easier to know when you have reached maximal semen quality for this individual. More aggressive treatment should be instituted if the partner is over 35, especially if she is demonstrating decreased ovarian reserve. It should also be appreciated that spermatogenesis following testosterone suppression will return in a progressive manner. Therefore, if the patient is finding the symptoms of hypogonadism extremely unbearable, or again if the partner is over 35, one can suggest going to IVF early during the course of the reboot protocol, since many fewer sperm are necessary to produce an IVF pregnancy. By incorporating the 2 pathways suggested by our “second opinion” physicians, as well as the suggestions found in the conclusion, the treating physician will experience a more successful therapeutic outcome for these difficult patients, many of whom will become some of your most appreciative parents.

ical and industrial settings have improvement teams in both med-
the U.S. military and performance for decades, NASA, all branches of
where things did not go as planned. For decades, NASA, all branches of
be equally valuable to review cases
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utes and watching videos where
doesn’t go as presented. Dice
described this process in US Army Training Cir-
93: “An after-action review (AAR) is a
military leader summarized it thus:
key learning points very efficiently without hav-
for themselves. As Otto von Bismarck
learn by experience. I prefer to profit by others’ experience.”
The U.S. Army described this
process in US Army Training Cir-

As surgeons, most of us love to give presentations about the proce-
dures that we perform. We boldly stride to the podium as the lecture hall darkens. The audience falls si-
there are times when the surgery
doesn’t go as presented.
But what about those occasions when our surgeries don’t go as planned? When the tissue planes
don’t reveal themselves, exposure is poor, bleeding is profuse or the postoperative results fall short of patient expectations? How can we turn clinical catastrophes into useful lessons that will help others avoid these pitfalls?
Although attending surgical lec-
tures and watching videos where everything “goes right” are import-
ant learning opportunities, it can be equally valuable to review cases where things did not go as planned. For decades, NASA, all branches of the U.S. military and performance improvement teams in both med-
cial and industrial settings have demonstrated the critical impor-
tance of “debriefing” after an ad-
verse event in order to learn what led to the poor outcome and, more importantly, what can be done to prevent this outcome in the future. By participating in such exercises, participants have been shown to absorb and retain key learning points very efficiently without hav-
ing to experience the actual events themselves. As Otto von Bismarck
bluntly stated: “Fools say that they learn by experience. I prefer to profit by others’ experience.”
The use of the AAR, or medical
debriefing, has become one of the
most powerful tools in clinical quality improvement. The Agency for Healthcare Research and Quali-
defines the medical debriefing as “a dialogue between two or more people; its goals are to discuss the actions and thought processes in-
volved in a particular patient care situation, encourage reflection on those actions and thought process-
es, and incorporate improvement into future performance”. In order to learn from the kind of clinical experiences many pro-
viders only encounter in their worst dreams, we asked highly re-
spected urological surgeons from a number of subspecialties to bring us their worst. We wanted to explore the kind of outcomes that wake you up in the middle of the night in a cold sweat. Outcomes that would chill the heart of the most resolute urologist and offer plaintiff attorneys the chance to retire in style. In short, we wanted to know what to do “When Disaster Strikes!”
The use of the AAR, or medical
debriefing, has become one of the
most powerful tools in clinical quality improvement.

By three methods we may learn wis-
dom: First by reflection, which is noblest; Sec-
ond, by imitation, which is easiest; and Third by experience, which is the bitterest.”—Confucius

Randall B. Meacham, MD
University of Colorado School of Medicine

“By three methods we may learn wis-
dom: First by reflection, which is noblest; Sec-
ond, by imitation, which is easiest; and Third by experience, which is the bitterest.”—Confucius

When Disaster Strikes: Preventing and Managing Nightmares in Urology

The urological surgeons listed
below answered the call and will be presenting complications related to their areas of clinical expert-
ise. Each of our faculty members
would certainly be on a short list of urologists that one would call to help prevent or manage calamities such as these. During their presenta-
tions, each speaker will describe
the case and its outcome. They
will then share teaching points
such as identifying procedural,
training or system-based factors
that may have contributed to the outcome along with preventative
strategies to address these factors.

Management of the complication
will also be addressed, and each
member of our faculty will discuss
two primary learning points or
recommendations for those who attend the session to take home with them.

Faculty and Topic for Discussion:
1. Randall Meacham, MD, Univer-
sity of Colorado School of Med-
icine, Aurora, Colorado: Moder-
ator.
2. Michael Ferrandino, MD, Duke
University School of Medicine, Durham, North Carolina: Lis-
tion of the superior mesenteric artery during robotic radical nephrectomy.
3. Run Wang, MD, University of Texas McGovern Medical School and MD Anderson Can-
center, Houston, Texas: Patien-
t that is dissatisfied with penile
length and SST deformity following
surgery.
4. Evangelos Listsikos, MD, Uni-
versity of Patras, Patras Greece: Subcapsular hematoma following ureteroscopy.
5. Craig Comiter, MD, Stanford
University School of Medicine, Palo Alto, California: Urinary incontinence following robot-assisted laparoscopic prostatectomy.
6. Kevin Pranikoff, MD, Jacobs
School of Medicine and Biomed-
ical Sciences, Buffalo, New York:
Death related to urosepsis in a frail,
elderly nursing home patient.

We encourage everyone to at-
tend “When Disaster Strikes: Pre-
venting and Managing Nightmares in Urology.” It promises to be a lively, fast-paced session that will send chills down your spine while helping to prevent these night-
mares from becoming a reality in your own clinical practice.
AQUA Registry Data Snapshot: How Has the Utilization of Intravesical Chemotherapy after TURBT Changed over Time?

Daniel Lee, MD, MS
University of Pennsylvania

The recurrence rates for non-muscle invasive bladder cancer (NMIBC) can be as high as 70%.[1] Meta-analyses have shown that giving intravesical chemotherapy within 24 hours of transurethral resection of bladder tumor (TURBT) can improve the recurrence-free survival rate by 38%.2 However, survey studies have found that compliance rates for postoperative administration can be as low as 20%–30%.3–5 Real-world evidence of national practice patterns are lacking.

Verana Health, the data partner of the AUA Quality (AQUA) Registry, evaluated how intravesical chemotherapy is given after TURBT in a nationwide registry. AQUA Registry data were used to measure the rate of intravesical administration of gemcitabine or mitomycin C within 24 hours of the initial TURBT date. An evaluation of 206 practices from January 2015 to December 2020 found very low utilization rates of post-TURBT intravesical chemotherapy.

Over the 3-year period, 3.1% of initial TURBT cases received intravesical chemotherapy (see figure). In 2015, the rate was 0.9%, which increased to 6.5% in 2020. The decreased number of TURBT overall in 2020 reflected what was seen during the COVID pandemic. This represents a very low percentage for what is considered an established guideline for NMIBC care.

Further investigation is needed to find ways to potentially improve this rate among practices participating in the AQUA Registry.


AUA2021

Acute Ischemic Priapism: An AUA/SMSNA Guideline

Trinity J. Bivalacqua, MD, PhD
The University of Pennsylvania Health System
The Pearlman School of Medicine
On behalf of the Guidelines Committee

Priapism is a condition resulting in a prolonged and uncontrolled erection. Although the incidence is relatively low, because of its time-dependent and progressive nature, priapism is a situation that both urologists and emergency room practitioners must be familiar with and comfortable managing. Although some forms of priapism are non-urgent in nature, prolonged (>4 hours) acute ischemic priapism represents a medical emergency and may lead to cavernosal fibrosis and subsequent erectile dysfunction (ED). Thus, all patients with priapism should be evaluated emergently to identify the subtype of priapism (acute ischemic versus non-ischemic) and those with an acute ischemic event provided early intervention when indicated.

Given the significant heterogeneity of men presenting with acute ischemic priapism, the current guideline emphasizes that specific interventions should be individualized based on clinical history and findings. While less invasive, stepwise methods may be appropriate for most situations, others may be best managed using expedited surgical interventions. Decisions must also consider patient objectives, available resources, and clinician experience. As such, a single pathway for managing the condition is oversimplified and no longer appropriate. Using this new, diversified approach, some men may be treated with intracavernosal injections of phenylephrine alone, others with distal shunting, and some may undergo non-emergent placement of a penile prosthesis.

Several other additions have been included in the guideline to address various diagnostic modalities. Specifically, the role of imaging (eg ultrasound, computerized tomography, magnetic resonance imaging) is clarified during the initial diagnosis as well as post-treatment, such as with men exhibiting persistent pain or perceived rigidity post-distal shunting.

New additions to the guideline also include greater detail on the role of:

1. Adjunctive laboratory testing.
2. Early involvement of urologists when presenting to the emergency room.
3. Enhanced data for patient counseling on risks of ED and surgical complications.
4. Specific recommendations on intracavernosal phenylephrine with or without irrigation.
5. Inclusion of novel surgical techniques (eg distal shunting with tunneling).
6.Earlier role for penile prosthesis placement in management of acute ischemic priapism.

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ACUTE ISCHEMIC PRIAPISM: AN AUA/SMSNA GUIDELINE

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Because priapism is rare and unpredictable, there is a dearth of high-level evidence-based data available from which strong evidence-based recommendations may be derived. Rather, most series represent small, single-site, retrospective, outcomes-based reports, with limited followup available and inconsistencies in reporting of outcomes. Similarly, as acute ischemic priapism is associated with ED (whether treated or untreated) and is progressive in nature, outcome reporting of various treatment strategies is inherently biased. These limitations preclude the ability to compare different treatment approaches or provide definitive recommendations in many cases. However, as with other American Urological Association (AUA) guidelines, a thorough review of the available literature was performed, with all relevant articles reviewed and considered during the creation of recommendation statements. In cases where the panel did not feel there was enough information to warrant a particular statement, additional discussion was presented within the supporting text.

The objective of the current guideline is to provide a practical guide, which is directive in cases where evidence is more abundant while remaining flexible to allow for clinician judgment. As such, the guideline does not establish a fixed set of rules for the treatment of priapism. Above all, it does not pre-empt physician judgment in individual cases. Variations in patient subpopulations, physician experience, and available resources will necessarily influence choice of clinical strategy. Adherence to the recommendations presented in this document cannot assure a successful treatment outcome. Of note, the current guideline only addresses acute ischemic priapism with limited discussion of non-ischemic priapism. Sections on non-ischemic priapism, stuttering/recurrent priapism, and sickle cell populations will be finalized shortly and presented at the next AUA.

HAVE YOU READ?

Daniel A. Shoskes, MD
Cleveland Clinic


While neo-adjuvant treatment is standard for high-risk bladder cancer amenable to cystectomy, the impact of adjuvant therapy is less clear. In this multicenter study, patients with muscle-invasive urothelial carcinoma who had undergone radical surgery were randomized to receive either nivolumab (240 mg intravenously) or placebo every 2 weeks for up to 1 year. Neoadjuvant cisplatin-based chemotherapy before trial entry was allowed. The primary end points were disease-free survival among all the patients (intention-to-treat population) and among patients with a tumor programmed death ligand 1 (PD-L1) expression level of 1% or more. A total of 353 patients were assigned to receive nivolumab and 356 to receive placebo. The median disease-free survival in the intention-to-treat population was 20.8 months (95% CI 16.5–27.6) with nivolumab and 10.8 months (95% CI 8.3–13.9) with placebo. The percentage of patients who were alive and disease-free at 6 months was 74.9% with nivolumab and 60.3% with placebo (HR for disease recurrence or death 0.70, 95.22% CI 0.55–0.90, p < 0.001). Among patients with a PD-L1 expression level of 1% or more, the percentage of patients was 75.5% and 55.7%, respectively (HR 0.55, 95.72% CI 0.35–0.85, p < 0.001). The median survival free from recurrence outside the urothelial tract in the intention-to-treat population was 22.9 months (95% CI 19.2–33.4) with nivolumab and 13.7 months (95% CI 8.4–20.3) with placebo. The percentage of patients who were alive and free from recurrence outside the urothelial tract at 6 months was 77.0% with nivolumab and 62.7% with placebo (HR for recurrence outside the urothelial tract or death 0.72, 95% CI 0.59–0.89). Among patients with a PD-L1 expression level of 1% or more, the percentage of patients was 75.6% and 56.7%, respectively (HR 0.55, 95% CI 0.39–0.79). Treatment-related adverse events of grade 3 or higher occurred in 12.9% of the nivolumab group and 72% of the placebo group. Two treatment-related deaths due to pneumonitis were noted in the nivolumab group.

The authors conclude that disease-free survival was longer with adjuvant nivolumab than with placebo in the intention-to-treat population and among patients with a PD-L1 expression level of 1% or more.


Cystectomy remains one of the most morbid operations in urology, and there are many opportunities to prehab a patient to improve outcomes. Nutritional supplementation is one approach. In this paper, the authors performed a retrospective review of 204 patients who underwent cystectomy for bladder cancer at a single institution, comparing patients who received oral L-arginine-based preoperative immunonutrition (Pre-INS) with those who did not. Outcomes of interest included development of high-grade (Clavien-Dindo III–V) complications, readmission within 30 days, ileus, total parenteral nutrition (TPN) requirement, postoperative infection and length of stay (LOS). Patients who received Pre-INS had significantly lower odds of requiring postoperative TPN (17.3% vs 35.6%; Fisher p=0.015; OR=0.38) and developing postoperative infection (25% vs 45%; Fisher p=0.003; OR=0.41) but no significant difference in the rates of other outcomes. On multivariable regression, when adjusting for age, gender, body mass index, Charlson Comorbidity Index, undergoing neoadjuvant chemotherapy and operative features, Pre-INS was a significant predictor of postoperative infection (Fisher p=0.02; OR=0.35) but not for high-grade complications, readmission, ileus, needing TPN or LOS.

The authors conclude that preoperative immunonutrition with an L-arginine-based supplement is associated with significant reduction in postoperative infection, one of the most common complications of radical cystectomy.


Identifying urologist burnout is an important step to reform, and the AUA Census now includes questions regarding burnout and career decisional regret. In this study the authors performed a cross-sectional study describing U.S. urology residents’ responses to the 22-item Maslach Burnout Inventory and questions about career and specialty choice regret from the 2019 AUA Census. Respondents reported and prioritized unmet needs for resident well-being. Among 415 respondents (31% response), the prevalence of professional burnout was 47%. Burnout symptoms were significantly higher among second-year residents (63%) compared to other training levels (p=0.02); 17%
and 9% of respondents reported regretting their overall career and specialty choices, respectively. Among the 53% of respondents who had ever reconsidered career and specialty choice, a majority (54%) experienced this most frequently during the second year of residency, significantly more than other training levels (p=0.04). Regarding unmet needs, 62% of respondents prioritized the ability to attend personal health appointments; the majority experienced difficulty attending such appointments during work hours, more so among women than men (70% vs 53%, p <0.01).

The authors conclude that targeting interventions to early-career residents and enabling access to medical and mental health care should be priorities for reform.

While we all can agree that evidence-based treatments for burnout can be helpful for those experiencing it, true priorities for reform will need to address the underlying causes and not put the blame on the inadequate personal resources of the physician to respond to them.

**PRACTICE TIPS & TRICKS**

**The Magic of “I’m Sorry”**

Neil H. Baum, MD
Tulane Medical School

Most fairy tales begin with “once upon a time.” There’s another fairy tale in the health care profession that once upon a time the initials “M.D.” after your name indicated status, trust and perfection. Most physicians appreciate that elevated status, infallibility and blind trust by our patients in their physicians are long gone and are the stuff of fairy tales.

We believe that the Internet has leveled the playing field of knowledge between patients and physicians. Also, the media have highlighted the errors and mistakes and have hung out our dirty laundry for all to see. Then there is the Institute of Medicine’s study in 1999, which chronicled nearly 100,000 deaths/year as a result of medical errors. Certainly, we can’t overlook the legal profession that is constantly nipping at our heels threatening to litigate against us when the outcome is less than perfect.

What can we do? We can continue to assume a policy to deny and defend the situation when there is an undesirable outcome. Or perhaps we can adopt a policy that is more human and natural—an apology.

Perhaps after reading this article you will understand that we are not perfect nor are all of our diagnoses, treatments and recommendations. Perhaps an apology will mollify a patient having the knee-jerk reaction of considering litigation when things don’t turn out as planned.

“I’m sorry” is one of the most commonly used phrases in any language. Most of us don’t think twice about offering an apology when we unintentionally bump into a stranger on the sidewalk. However, when we have made a medical mistake—and nearly every one of us has during our medical careers—the words seem to get stuck in our throats and become difficult or impossible to express.

We begin learning detachment the moment we begin our medical training. This is compounded by the fact that with declining reimbursements and increasing overhead costs, we have less time to spend with patients, and we are often wary of engaging our patients in honest, open dialogue. In addition, often times our malpractice insurers tell us that an apology might be interpreted as an admission of fault or negligence that could make a defense difficult if the patient proceeds with lawsuit.

The likelihood of being sued is significantly decreased as communication skills are increased. Those physicians with the best communication skills ask the patients more questions, encourage patients to talk about their feelings, use humor when appropriate and educate patients about what to expect during treatment.

The likelihood of being sued is significantly decreased as communication skills are increased.

Those with enhanced communication skills spend just a few more minutes with their patients—about 3 minutes per visit—than those physicians who have been sued. Another fact that is worth noting is that the likelihood of a lawsuit decreases by 50% when an apology is offered and the details of the medical error are disclosed in a timely fashion.

How can we effectively apologize without admitting guilt or wrongdoing?

An authentic apology is one that is heart-felt and driven by true regret or remorse. There are 5 reasons to consider an apology:

1. It shows the patients you respect them.
2. It shows you are taking responsibility for the situation.
3. It demonstrates you care about the way the patient feels.
4. It demonstrates your empathy.
5. It results in dissipating anger.

Patients want to know what happened and why it happened, how the problem or error will affect their health in the short and long term, what is being done to correct the problem, who will be responsible for the cost of the error or complication, and finally what has been learned and what the doctor is doing to avoid this happening again.

**Bottom Line:** The take home message: Perhaps when we are comfortable with the words “I’m sorry” and can say them easily and with sincerity, we can expect better health care, increased job satisfaction and lower malpractice premiums.

What Do Urology Residents Know about Personal Finance? A Survey-Based Prospective Study of Urology Trainees

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Urology residents face many challenges to their personal financial health. The increasing cost of medical education and associated loan burdens leave the average urological resident with debts in excess of several hundred thousand dollars at the onset of their careers.1 Residents may also be unaware of the threats to their newly attained income, namely death and disability. Finally, residents may not fully appreciate the importance of saving for retirement, and the associated benefits of saving within a qualified retirement savings account such as a Roth Individual Retirement Account (IRA) and employer-sponsored 401(k).2 The deficiency of personal finance knowledge within the urological resident demographic has significant consequences. Resident financial status may influence the decision to pursue a fellowship and/or enter either academics or private practice.3 Moreover, poor financial literacy has been shown to have a deleterious effect on job satisfaction and burnout.4

Despite the potential benefits of incorporating financial literacy training into urology residency curricula, few studies have evaluated the financial literacy of urology trainees or the efficacy of financial education interventions. During the COVID-19 pandemic, this educational gap was addressed with a financial literacy lecture given by Dr. Sammy Elsamra on 2 separate dates under sponsorship of the American Urological Association New York Section EMPIRE (Educational Multi-Institutional Program for Instructing Residents) Lecture Series and the New England Section Virtual Lecture Series. Attendees were polled prior to viewing this lecture with a 22-item questionnaire addressing current financial/loan status, knowledge of repayment plans, and knowledge of retirement and disability plans.

What Do Urology Residents Know about Personal Finances?

A total of 50 individuals attended the EMPIRE lecture and 76 attended the New England Section Virtual Lecture. Of the viewers 63 responded to the pre-lecture survey, representing a 50% response rate (fig. 1). Of the responders 51 (81%) reported having some degree of student loans. Among those with student loans, 92.4% of participants reported student loans in excess of $100,000, with 21 (42.3%) individuals reporting loans greater than $250,000 (fig. 2). Approximately 50% of respondents expressed an interest in obtaining financial advice and 71.4% of respondents reported a previous interaction with a financial advisor (fig. 3). Student loan accrual did appear at least moderately concerning to most participants, with 73.6% rating their level of student debt concern as at least a 3 on a Likert scale of 1 to 5. Of the individuals 9.6% had refinanced their loans at the time of the survey. Amongst those who had not completed refinancing their loans, participants reported a myriad of repayment plans including self-pay (21.8%), Public Service Loan Forgiveness (PSLF) (17.8%), time-based loan forgiveness programs including income-based repayment, pay as you earn, revised pay as you earn (15.7%), or a combination of programs (fig. 4). Importantly, nearly 14% of the respondents were not aware of any loan-repayment options.

Nearly 43% of respondents reported not having disability insurance. Of those who are insured, more individuals have specialty-specific insurance than nonspecialty specific (30.2% vs. 23.8%). With respect to life insurance, 46% of respondents had no life insurance at all; the remainder had primarily term life insurance. The most commonly cited reasons for not obtaining disability or life insurance were either not having enough money or being unaware of the products. The

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WHAT DO UROLOGY RESIDENTS KNOW ABOUT PERSONAL FINANCE?
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Both residents and faculty agree that financial training is an important part of surgical training. According to a study by Tevis et al, 80% of surgical residents believed strongly that financial education was needed in surgical training. A study by Lusco et al corroborated these findings, reporting that 87% of general surgery program directors agreed that residents should be trained in business and practice management. However, few interventions in resident financial literacy have been described.

The implementation of a medical school financial literacy curriculum has been described, but what options exist once trainees have reached residency? At a local level, programs can institute dedicated lectures, built into existing lecture time, given by either a staff urologist with high financial literacy or by an employee of the hospital with specialty in financial guidance. Such a program, however, would still require “buy in” by residents and likely would most benefit those who already have an interest in personal finances. Interval ACGME (Accreditation Council for Graduate Medical Education)-instituted short seminars have also been shown to change financial behaviors and investments and could be more widely implemented. At a more systemic level, all trainees could be required to privately meet with a financial advisor upon the initiation of their training, and to be given their options for retirement planning, disability plans, and student debt repayment programs. Interval followup meeting to review life changes could also augment the utility of these meetings. Such programs may combat physician burnout and improve the financial wellness amongst residents. Future longitudinal studies should also evaluate the efficacy of such training programs in terms of short-term choice changes as well as subjective wellness outcomes.


SECTION AND SPECIALTY MEETINGS

South Central Section Meeting in Scottsdale, Arizona

Michael S. Cookson, MD
President, South Central Section
University of Oklahoma

The 100th Annual Meeting of the South Central Section (SCS) will be held at the beautiful award-winning JW Marriott Scottsdale Camelback Inn Resort & Spa in Scottsdale Arizona from September 29 through October 2, 2021. The property is located at the base of Camelback Mountain in Paradise Valley.

Many members of the SCS will be familiar with the Camelback Inn as the Section hosted the meeting here last in 2015. The meeting is held at an outstanding venue and is one of our best attended sites. The SCS invites all of our members as well as guests from any section to attend. We also want to welcome any locals from the Phoenix–Scottsdale area. We will be fortunate to have both Dr. Raju Thomas, incoming President of the American Urological Association, and Dr. J. Brantley Thrasher, the Executive Director of the American Board of Urology (ABU), attending this year’s meeting, and we look forward to messages from them.

Dr. John W. Davis, SCS President-elect from the MD Anderson Cancer Center, has developed an outstanding program that really encompasses a broad range of topics. The program will open on the first day with timely topics on urologic oncology including “Prime Time: Screening and Early Detection of Prostate Cancer,” bladder cancer detection and a panel on nonmuscle invasive bladder cancer, and a kidney cancer session on renal mass management and upper tract tumors. The second day will include “Semi-Live Robotic Surgery” with surgical advances in prostate, kidney and upper tract tumors, a “Prime Time: Female Voiding Dysfunction Workshop” as well as a thorough discussion on urinary slings and neurourology. There will also be panel discussions on the surgical management of large prostate with benign prostatic hyperplasia and Peyronie’s Disease and testosteronereplacement in patients with prostate cancer. The third day will cover the impact of COVID-19 on urological care, innovations in advanced prostate cancer and urologic oncology. The fourth day will include a session on “Diversity and Inclusion in Urology” and how the
SCS can lead the way. Abstracts of broad interest for general and specialty urologists will be grouped into podium session topics, while additional concurrent poster sessions will allow for detailed subspecialty exchanges in a smaller forum. In addition, the perennial favorites of the Resident Quiz Bowl and T. Leon Howard Conference will be part of the meeting. There will also be good discussions on health policy and an update on coding/billing 2021 for urologists by Dr. Mark N. Painter.

State-of-the-art lectures include “2020 AUA/ASRM Male Infertility Guidelines” presented by Dr. Larry Lipshultz and “Troubleshooting and Complications of Minimally Invasive Surgery” by Dr. Raju Thomas, who will also deliver the AUA Update. Dr. J. Brantley Thrasher will provide the ABU Update and oversee the T. Leon Howard Imaging Session. Additional featured guest professors will include Dr. Sam Chang from Vanderbilt and Dr. David Jarrard from the University of Wisconsin who will both add richness to the meeting with their expertise in urologic oncology. The Presidential Guest Lecturer will be Dr. Paul Andrews from the Mayo Clinic in Arizona. We will also benefit from lectures by Drs. Mitch Humphreys and Mark Tyson at the Mayo Clinic in Arizona.

As is typical with the SCS, in addition to the excellent academic meetings there are numerous outstanding social events and gatherings. This includes the Welcome Reception sponsored by our industry colleagues where members and guests become reacquainted. Our Theme Night this year will be a “Welcome to the Wild West.” Friday will be a shortened program with a half day of tennis, golf or the numerous other activities offered at the Camelback Inn. Our meeting will conclude with our Annual Banquet formally celebrating our rich 100-year history, where we will also present awards from the meeting.

Please make plans to attend this year’s 100th Annual Meeting of the SCS at the JW Marriott Scottsdale Camelback Inn Resort & Spa in Scottsdale from September 29 through October 2, 2021 for a commemorative event that promises to deliver on both education and enjoyment.
SECTION AND SPECIALTY MEETINGS

NORTH CENTRAL SECTION MEETING
Continued from page 65

Podium and poster sessions will give our members an opportunity to present their cutting-edge research and clinical advances. This year’s program offerings have been carefully selected by the Section from a record number of abstract submissions. The program is sure to provide attendees with information that will expand their clinical knowledge, and give them tools and resources that will help with practice improvement and care delivery.

The North Central Section Meeting will provide members not only with a forum for continuing medical education, but also many opportunities for networking, career development, social interaction and, of course, fun. Local Arrangements Chair Michael Guralnick and his wife Rebecca worked closely with the program committee to design social events within the busy schedule that will allow members to reconnect with colleagues and establish new collaborations with members sharing similar interests and talents. Whether it is the Welcome Reception, the Young Urologists Reception or the Annual President’s Cocktail Reception, there will be plenty of opportunities to relax with other Section members and guests over delicious hors d’oeuvres in the elegant setting that is the iconic Fairmont Hotel.

It has been an honor and a privilege to serve as President of the North Central Section of the AUA over this past year. I hope that you will join me in Chicago this October as this Annual Meeting promises to be spectacular. This last year has been challenging for all of us. It is time to gather as colleagues once again and share ideas, interests and laughter. I look forward to “seeing” each and every one of you at The Fairmont.

SECTION AND SPECIALTY MEETINGS

Society of Women in Urology at the AUA

Elizabeth Timbrook Brown, MD, MPH
MedStar Georgetown University Hospital

The Society of Women in Urology (SWIU) Board of Directors is excited to announce that we will be having our annual AUA breakfast meeting this year in person. It will be held Sunday, September 13, 2021 at 7:30 a.m.

During this time, we will have our annual SWIU Award Presentations, where we will present the Christina Manthos Mentor Award, Elisabeth Pickett Research Award, SWIU/SBUR (Society for Basic Urologic Research, Inc.) Award for Excellence in Urological Research, SWIU/Intuitive Robotic Research Scholar Award and the Outstanding Resident Award. Dr. Linda McIntire will also be giving us an update on the R. Frank Jones Urological Society as we continue to collaborate to promote diversity in urology.

The remainder of the morning will be spent networking with friends and colleagues. This last year has been quite difficult, and many of us missed seeing our fellow urologists. With the absence of these interpersonal interactions, we would like to spend the morning exemplifying our mission to support the professional advancement of women urologists, encourage public education regarding urological issues and promote urological research.

SECTION AND SPECIALTY MEETINGS

New England Section Meeting

Ernest Bove, MD
President, New England Section
Marble Valley Urology

Greetings from New England! We hope you can join us at the 2021 New England Section Annual Meeting in Burlington, Vermont, October 14–16, 2021. This meeting will be the first for the Section in 2 years, and our leadership and program committee is looking forward to reuniting the Section in the spirit of education, collaboration and camaraderie. Our small, friendly city of Burlington offers a thriving art scene, museums, a full range of outdoor activities, renowned restaurants and a welcoming culture. Combined with peak foliage season, Burlington provides the perfect setting to enjoy the beauty of our New England fall season!

Our scientific program coordinators are my good friends Drs. Martin Gross and Kevan Sternberg, who are planning this year’s meeting. They have assembled 3 days of programming, which will include our traditional scientific abstract sessions and panel discussions, 2 socioeconomic sessions and new interesting case presentations. The interesting case session is designed as an engaging “How I Do It” program, and we are excited to offer it this year. We will also be offering an all-day Basic Comprehension Course geared toward advanced practice providers (APPs) on Saturday, October 16. Our meeting will conclude with our residents, fellows and young urologists networking forum on Saturday afternoon.

Continued on page 67
State of the Art Lectures will feature Dr. Amy Krambeck, who will speak on HoLEP: A Trusted Procedure for a New Era, Dr. Adam S. Kibel, who will speak on the Critical Role of the Urologist in Trimodal Therapy for Muscle Invasive Bladder Cancer, and Dr. Ricardo Munarriz, who will speak about Prevention and Management of Penile Prosthesis Infections. We will also welcome Dr. Anthony Caldamone as our 45th Wyland F. Leadbetter Memorial Lecturer. Dr. Caldamone's presentation will be titled “The Making of a Memorial Lecturer.”

Panel discussions are always popular within the New England Section. This year we will feature a point/counterpoint panel on endourology. This panel will be a first for the Section—it will be comprised of both local panelists and our colleagues abroad to truly give a worldwide perspective on this topic.

Our APP colleagues have expressed interest in increased integration into the Annual Meeting. Martin Gross, Kevan Sternberg and I have ensured that this year’s program is inclusive of topics of interest to APPs and that there is APP faculty participation. This includes the AUA Course of Choice, Superficial Bladder Cancer and Evaluation of the Patient with Hematuria, given by Jim Kovarik, MS, PA-C from the University of Kansas, and Dr. Alana Murphy from Jefferson University. We anticipate wonderful interaction among all our attendees in Burlington.

We are also excited to offer our Women in Urology breakfast on Saturday morning, October 16, which will cover topics such as women in leadership roles within our specialty and supporting women in advocacy. This session is sure to be well attended and will offer opportunity for networking as well.

Along with business and educational activities of the Section Annual Meeting, there will be opportunities to enjoy the company of our colleagues, reconnect and rekindle friendships, and engage with our industry partners. There will be exhibits and cocktail receptions on both Thursday and Friday nights, and this year’s Presidents Dinner on Saturday, October 16 will be a delightful dinner cruise on Lake Champlain aboard the Spirit of Ethan Allen.

The preliminary program, meeting registration, housing and local area information can be found on the NEAUAA website at http://meeting.neauaa.org.

On behalf of the New England Section leadership and program committee, I look forward to welcoming you to Burlington this fall.

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**NEW ENGLAND SECTION MEETING**

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**SECTION AND SPECIALTY MEETINGS**

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**Geriatric Urological Society Annual Meeting to Focus on Recent Research**

Tomas L. Griebling, MD, MPH
President, Geriatric Urological Society
University of Kansas

Changes to the genitourinary system are common with aging and can lead to a variety of clinical conditions and problems for older adults. Urology is one of the specialties with the largest overall volume of clinical care provided for older adults. Patients aged 65 years and older account for more than 70% of overall practice for most general urologists. Research continues to help advance our knowledge and understanding of the aging process and how it influences urological health. This includes research across all spectrums ranging from basic and translational science to clinical care and health policy.

The annual meeting of the Geriatric Urological Society (GUS) will be held on Sunday, September 12 from 1 to 3 p.m. in conjuncton with the annual meeting of the AUA. This year’s program will include 4 sub-sections, each focused on research related to geriatrics and urology. All sessions will include question and answer time and discussion with the presenters and audience members.

The first will look at bladder dysfunction associated with aging using a translational science approach. Dr. Michael Chancellor from the William Beaumont Medical Center will discuss the Neurogenic and Myogenic Etiology of Bladder Dysfunction in older adults. Dr. Pradeep Tyagi from University of Pittsburgh will present a talk entitled, “Pharmacology and Novel Targets of Aging Bladder Dysfunction.” The potential of new targets could open up the options of new and different treatments for this bothersome condition.

The second section of the meeting will provide a detailed analysis of the Prevention of Lower Urinary Tract Symptoms (PLUS) Research Consortium. This is a National Institutes of Health-funded research effort designed to examine a wide variety of prevention strategies and methods in relation to bladder health. Dr. Alayne Markland from the University of Alabama at Birmingham will moderate the panel discussion. She will also review the work that has been done by the research group over the first 5 years of the project and issues related specifically to elderly women. Dr. Leslie Rickey from Yale University will present Measuring Bladder Health Across the Life Course, a topic that is particularly important when considering patient clinical outcomes. Dr. Ariana Smith from the University of Pennsylvania and Dr. Siobhan Sutcliffe from Washington University in St. Louis will examine issues of Defining and Evaluating Bladder Health from a Population Perspective.

I will have the pleasure of moderating a discussion on the third portion of the meeting on the topic of frailty as it applies in geriatric urology. This is an area that has garnered a great deal of attention in both research and clinical geriatrics over the past years. Dr. Anne Suskind from the University of California, San Francisco has done extensive research on the topic of measuring frailty and examining applications in urological practice. She will present a talk entitled “The Timed Up and Go Test (TUGT) as a Measure of Frailty in Benign Urologic Practice.” Dr. Casey Kowalik, one of my partners at the University of Kansas, will talk about Using Frailty Assessment in Clinical Practice. I will explore how we extrapolate results from clinical trials on frailty into practice and consider what might be missing and gaps in research.

The final portion of the meeting will include an international roundtable on research in aging in urology. This has become a traditional part of the GUS meeting and will be moderated by Dr. Ananias Diokno of the William Beaumont Medical Center, who is also the Immediate Past President of our Society. Dr. Stephanie Gleicher, Fellow at Vanderbilt University, will present her group’s research entitled, “Association Between Stress Urinary Incontinence (SUI) and Metabolic Syndrome.” Dr. Oğuz Özden Cebeci from Turkey will discuss his work on Complications of Radical Cystectomy in the Geriatric Population.

Each year the discussion at the GUS meeting provides a time for researchers and clinicians with an interest in care of older adults with urological issues to come together and explore current science. It also helps generate new questions for future work in our field.
FROM THE AUA RESEARCH COUNCIL

New Beginnings

Steven A. Kaplan, MD
Chair, AUA Office of Education

"The beginning is the most important part of the work."—Plato

The Office of Research of the American Urological Association has made tremendous strides in establishing an important foothold in fostering genitourinary discovery. This is an exciting and yet challenging moment to expand our influence and role. The key part of our strategy is to enthusiastically expand the Urology Discovery tent. We want to break down barriers that have precluded many forward-looking investigators from making potentially important contributions to our field. In my role as Chair-elect, and now beginning my term as Chair of the Research Council, I’ve learned a lot about what has been done, what can be done and, with all of your support, what will be done! Over the next few editions of this column in AUA News, we will be sharing the Research Strategic Plan we’ve proposed for the next 4 years. Our Key Goals are:

1. Maximize sustainability and optimization of research support.
2. Increase our impact through a wider and more strategic constituency:
   a. Increase capacity for diversity, equity and inclusion.
   b. Engage and collaborate with our community-based research partners.
3. Partner with international AUA Stakeholders in research.
4. Grow resources to support Urology Research and Discovery.

More specifically, we are examining development of a Urology Incubator. For Key Goal 1, we will increase our stability and quantity via increasingly effective use of existing funds and other resources. Moreover, we will increase our focus on critical questions and unmet Urology Discovery needs. An important aspect of our vision is to create a platform for new investigators throughout the Urology Career life cycle. Through enhancement of our very successful USMART Academy (Urology Scientific Mentoring and Research Training), we hope to widen our breadth and scope of urology researchers. We also recognize that the post-COVID ecosphere will require us to navigate challenging headwinds and be able to adapt nimbly and effectively.

I look forward to sharing more about these goals, plans and advancements in future AUA News issues. I am energized by the incredible enthusiasm generated by colleagues in the Urology world and working closely with each of them to move the Research ball forward. Led by Dr. Carolyn Best and her talented staff at the Office of Research, Dr. Ganesh Raj, who chairs the Research Grants and Investigator Support Committee (RGISC), Dr. David Jarrard, who chairs the Research Advocacy Committee (RACC), our Urology Community is blessed with the tools and leaders we will need to advance our ambitious agenda.

Finally, as one of the key tripartite goals of the AUA, Research and Discovery is the lifeblood of our specialty. I hope to engage all of those interested in this mission. Please feel free to contact me with ideas, suggestions or thoughts. Together, let us create the future! Follow Dr. Kaplan on Twitter @MaleHealthDoc.

FROM THE EDUCATION COUNCIL

AUA2021: An Educational Experience for Everyone

Jay D. Raman, MD, FACS
Chair, AUA Office of Education
Penn State Health

"Technology is best when it brings people together."—Matt Mullenweg


Creativity and evolution of digital delivery of content is an unexpected benefit from the COVID-19 experience. Specifically, what makes the AUA’s 116th annual meeting unique is the use of a powerful new platform that allows you to engage with the cutting-edge content, but also with your friends and colleagues from around the world. The new AUA2021 platform is a tool that has several key features that you can use.

The new platform will allow you to build a specific agenda based on your educational needs. The platform uses artificial intelligence (AI) to help you find key sessions and courses that would be of particular interest to you. To maximize the potential of these AI matches, go to your Profile and add your educational areas of interest and your primary area of work. With this information, the system will offer you recommendations of activities to add to your agenda, and as you continue to select sessions the AI will further refine additional options presented to you. You can also search the entire program by day, time, type of session, subspecialty domain, treatment approach, or even by a key word. As you identify activities you would like to join, the system will build your schedule, continue to update your AI, and when you are in the platform send you reminders and new suggestions. In addition, the AI will recommend colleagues for you to connect with who share your practice interests.

A second key function of this platform is the virtual engagement between you and other participants. Whether you are watching domestically or abroad, you can engage in active, real-time discussion with your colleagues about the content being presented. If you would like to connect directly with a colleague, use the video chat function to view a presentation with a colleague who you are connected with in the system. Within the platform, go to Attendees, find your colleague’s name and “connect.” After you have a connection, go to the chat function and communicate via text or with a video call—it’s that easy! If you are worried about privacy, these features can be enabled or disabled at any time with just a single click of a button in your profile.

AUA2021 will offer a wealth of content so being able to identify what’s most important to you is critical. This platform and all available content will not only be online during the meeting, but all the way to the end of the calendar year (December 31, 2021)! To ensure you get the most out of your experience, the AUA staff is here and eager to assist you. If you need any help building your profile or agenda, or navigating the site, please contact us at education@auanet.org.

I look forward to connecting with you around AUA2021 and appreciate any feedback as we continue to work to offer our members and attendees the best educational experience possible.
Resilient Leadership

Scott K. Swanson, MD, FACS
President, American Urological Association

As I reflect on my term as AUA President, there are 2 words that come to mind: leadership and resiliency. The COVID-19 pandemic brought challenges we’ve never faced before, but through resiliency and strong leadership, we’ve been able to navigate through these difficult and challenging times. I am so very proud to be part of an organization that remains at the forefront for tapping into the innovative spirit of our specialty.

We had to do our jobs despite not being face-to-face, adapt to new methods, keep our focus and learn to effectively work from home among many other new transitions. We swiftly adjusted from a canceled in-person meeting to a full virtual program, making virtual education advantageous and better than before. We’re thankful our membership resiliently responded proactively to the new delivery models.

This past year, we’ve written compelling new chapters in the AUA narrative. Our book, thick with 121 years of stories, has a new chronicle: stories that prove our strength as a global community and our unwavering commitment to advancing urology beyond the ways we might traditionally think.

The AUA represents all facets of the urology community, from retired urologists to those just starting out in medicine. I am proud to say 2020 was another record year for membership growth with the AUA welcoming 3,149 new members, with an increase in medical students, residents, fellows and advanced practice providers.

STOP

RESIDENTS & FELLOWS COMMITTEE

Mentoring 101: A Brief Guide to Navigating the Mentorship Process

Ruchika Talwar, MD
University of Pennsylvania

Ankur Shah, MD, MBA
University of Pennsylvania

Justin Ziemba, MD, MSED
University of Pennsylvania

The Importance of Mentorship in Training (and Practice) “Seeking a Mentor” and “How to Be a Good Mentee”

Mentor-mentee relationships forge our earliest professional identities and nurture our growth as physicians. There is substantial evidence that workplace mentorship increases job performance, promotion and motivation. However, more than half of professionals recently surveyed across various industries report not having a current mentor; this is most pronounced in healthcare, with only 43% of those surveyed having ever had a mentor. This raises the question of why mentorship remains underutilized in medicine despite the clear career benefits.

At least part of this can be explained by a lack of emphasis, training and programmatic support for mentorship, particularly for the practicing urologist. Therefore, we hope to provide this concise guide on meaningful mentorship for both mentors and mentees.

The Critical Steps to Being a Mentor “Seeking a Mentor” and “How to Be a Good Mentee”

Two major relationship domains are useful to consider within the larger mentorship context. The first is coaching, which is typically short-term and aimed at task-specific feedback to overcome a professional obstacle. The second is sponsorship, which is time-limited and designed to enhance a mentee’s visibility through networking and advocacy.

The key to the success of any mentor is building a healthy relationship with the mentee. To cultivate this, the mentor has to be available professionally, psychologically and logistically. The mentor and mentee need to have explicit and realistic shared goals for the relationship. Further, the mentor needs to create an environment of psychological safety and trust, not only inclusive of confidentiality, but also that the advice provided is in their best interest (which may not always align with the mentor’s interests). Finally, the mentor should always be authentic and empathetic.

Seeking a Mentor

As a trainee, finding an appropriate mentor for an individual’s specific goals is crucial to ensuring the success of the relationship. Mentors are thought of as sole individuals who serve multiple roles in helping to advance a career, but mentorship is often a team model. Mentors may serve as role models after whom you would like to mirror your career, or they may have expertise in a particular subject that interests you. Sometimes mentors are influential individuals who may be able to use their network to benefit you.

It is important to remember that your mentor’s title or leadership position is not the only thing that matters. Their personal attributes and investment in you as an individual are of far more significance in the long run. If possible, it may be helpful to talk to others who have worked with your proposed mentor.

How to Be a Good Mentee

Mentorship is a vital component to professional success; however, it is not a one-way street. The mentee plays a significant role in maintaining the relationship. Overall, the qualities of a good mentee involve respect, responsibility, reliability, resilience and communication. Mentees should respect a mentor’s time and take responsibility for regular communication, taking initiative and being reliable enough to complete tasks on time. Finally, mentees should be open to receiving honest feedback and demonstrate actionable change on such feedback.

RESILIENT LEADERSHIP

Continued from page 69

2020 Urology Residency Match was also a banner year with 353 positions filled, 142 registered programs and 122 female applicants, of whom 86% matched. I want to express my sincere gratitude to all members of the AUA. We wouldn’t be where we are today without you and your unwavering dedication to advancing your professional mission.

I am also honored to have welcomed the AUA’s Diversity and Inclusion Task Force, which is chaired by Dr. Tracy Downs. The Task Force aims to identify specific and actionable steps for how the AUA can advocate for, and foster, a diverse and inclusive environment within the association as well as the urology community. Under the direction of Dr. John Denstedt, the Diversity and Inclusion Task Force promptly turned around the first-ever issue of AUA News dedicated to Diversity and Inclusion.

Throughout the pandemic, the AUA has remained committed to providing quality evidence-based education for urologists and urological health care providers worldwide, with an increase in opportunities for virtual or video-based technology. Through the combined talents of our Board Secretary, Dr. John Denstedt, coupled with the expertise of outgoing Education Chair, Dr. Victor Nitti, and incoming Education Chair, Dr. Jay Raman, we came out with more capacity to meet the educational needs of our members around the world. I want to personally thank all members, authors, speakers and moderators who submitted abstracts and participated in the presentations of the programs.

All of your hard work contributed to the success of the virtual education. In 2020, more than 100 AUA faculty members participated in more than 45 national and multinational society programs across 20+ countries. I’m looking forward to new AUA programs, such as the Business of Urology.

Our commitment to the research community remained steadfast under the leadership of outgoing Research Council Chair, Dr. Aria Olumi, and incoming Chair, Dr. Stephen Kaplan. The research we pursue in urology and other areas of medicine help us to generate new knowledge, new connections and new insights into patient care. In 2020, nearly $1.5 million was provided in research funding. We partnered with the Society for Basic Urologic Research to establish the first Urology Care Foundation Research Scholar Award dedicated to supporting women and underrepresented minorities in urological research. We also received a $2 million donation from Urovant Sciences to develop the Leadership in Education, Achievement and Diversity (LEAD) program. The LEAD program will support 3 urology residents per year from racial and ethnic backgrounds underrepresented in urological research to conduct mentored research, engage in research education and be championed through networking, as they develop successful research careers and better serve the urology patient community.

The Urology Care Foundation also launched its Humanitarian Award and Grants program, an initiative led by Dr. John Lynch. These new humanitarian initiatives will support missions that will improve urological health in underserved areas around the globe. The impact will go beyond the mere physical, providing hope, dignity and improved quality of life. Congratulations to Dr. Catherine Rhu deVries, the first Urology Care Foundation Humanitarian Recognition Award winner, and all of the nominees.

As a leading advocate for the specialty of urology, the AUA is always working on behalf of its members and their patients to ensure critical interests are promoted to a wide array of decision makers. The AUA remained focused on its advocacy agenda in 2020, which included such initiatives as physician reimbursement, access to care and urology/cancer research funding, and telehealth. Under the leadership of Dr. Eugene Rhee, the 2020 and 2021 Annual Urology Advocacy Summit successfully transitioned to a temporary virtual platform. Collaborating with patient and research advocacy organizations, the AUA ensured the voice of the specialty was heard on federal, state and local levels. Thank you to all who have donated to the AUA Political Action Committee.

I would like to thank outgoing Board members Drs. John Lynch, David Green, Barry Kogan and Ann Gormley for their hard work and dedication to the AUA. I would like to welcome Dr. Raju Thomas in his new role as AUA President and Dr. Thomas Stringer in his role as Treasurer. I would also like to welcome Dr. Edward Messing, who will serve as President-elect, and Drs. Hassan Razvi and Arthur Tarantino as incoming Northeastern and New England Section Representatives, respectively. The AUA is a better association thanks to the hard work of these individuals, and the future of the AUA is in good hands.

The AUA wouldn’t be the premier urological association it is today without the hard work of the staff and executive team, under the leadership of CEO Mike Sheppard. I cannot commend the team at the AUA enough for their resiliency during this time.

While it might seem far away, the team at the AUA is already planning for the 2022 AUA Annual Meeting with new educational programming, features and virtual options for attendees. I have no doubt the hard work and dedication of the team at the AUA will produce a phenomenal meeting with only 8 short months between AUA2021 and AUA2022. I’m looking forward to seeing you all in New Orleans!

In a year like no other, the AUA remained deeply focused on serving its members and staying active in all areas of its mission: education, research and advocacy. I am proud of the actions taken to meet the needs of our specialty, and I am thankful for the more than 500 urologists who volunteered to help us deliver on our mission.

The AUA and urology community endured this past year with resilience, leadership, flexibility, drive and compassion. I thank you all for your continued support and encouragement. It has truly been an honor and privilege to serve as the President of this outstanding organization.

FROM THE AUA SECRETARY

Thank You AUA Council and Committee Leadership

John D. Denstedt, MD, FRCS, FACS, FCAHS
Editor, AUA News

Each AUA Annual Meeting starts the term of new council and committee leadership. The significant contributions of the outgoing chairs have a long-lasting impact on the programs and initiatives of the AUA. I would like to recognize the outgoing chairs for their dedication and hard work.

Anne Calvaresi, DNP, CRMP, RNFA chaired the Urology Care Foundation Prostate Health Committee from 2019 to 2021. While serving as Chair, Anne contributed to the development of multiple industry-funded projects to include 6 Prostate Cancer Caregiver podcasts and the Living Healthy Cookbook with Information about Urologic Cancers featuring celebrity chefs. She also reviewed and updated existing Web articles, patient guides and posters to align with the Benign Prostatic Hyperplasia Surgical Management AUA Clinical Guideline and updated 11 existing
patient education materials to align with the Advanced Prostate Cancer AUA Clinical Guideline.

**Dr. Toby Chai** served as the Chair of the Research Advocacy Committee from 2018 to 2021. As Chair, Dr. Chai led discussions to identify key approaches to address critical needs in research advocacy, such as institutional support for surgeon scientists. He also led the submissions of urology-relevant recommendations for National Institute of Child Health and Human Development (NICHD), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), and National Institute on Aging (NIA) strategic plans. Dr. Chai cultivated relationships with members of Congress to aid the AUA’s research advocacy efforts to protect, grow and raise awareness of urological research funding within the Department of Defense’s (DoD) Congressionally Directed Medical Research Programs (CDMRP) and the National Institutes of Health (NIH). Working closely with the NIH, Dr. Chai helped to place 2 surgeon scientists on NIH advisory bodies, as well as participating in strike force meetings with the NIH in conjunction with the AUA’s Annual Urology Advocacy Summit and providing responses to an array of NIH Requests for Information.

**Dr. Sam Chang** completed this 2-year term as Chair of the Public Media Committee. Under Dr. Chang’s leadership, the Public Media Committee responded to nearly 80 media inquiries in 2020, resulting in the AUA being featured in approximately 12,000 news articles throughout the year. Top media outlets included the Associated Press, CNN online, HealthDay, Newsweek, U.S. News & World Report and The Wall Street Journal. Dr. Chang and the committee actively promoted urology-based science and news to more than 100 trade and consumer journalists via 44 one-on-one interviews and 5 press events featuring 14 abstracts during the 2020 AUA Annual Meeting, which due to COVID-19 was hosted virtually for the first time in the AUA’s history. This digital interaction enabled the AUA to generate a reach of more than 155.6 million through press releases, webinars and social media posts for each press event.

**Dr. Juan Javier-DesLoges** served as Chair of the Residents and Fellows Committee (RFC) from 2020 to 2021. Dr. Javier-DesLoges increased the resident/fellow involvement in The Journal of Urology® and worked closely with the AUA Data Committee to publish a second report on domestic and international residents using AUA Census data. He also refined the data collection and publication of the Urology Residency Match. Dr. Javier-DesLoges led the 4th annual RFC Essay Contest, garnering 42 submissions from medical students, residents and fellows in the U.S. and internationally. He worked with the RFC to sponsor a panel during the AUA May Kick-off Weekend and create resident programming for the AUA Annual Meeting.

**Dr. Jihad Kaouk** chaired the New Technologies & Imaging Committee from 2019 to 2021. During his term, Dr. Kaouk provided expertise on the adoption of new urological technologies and assisted the AUA Office of Education in the development of an educational needs assessment survey on new technologies. He also evaluated instructional courses for the AUA Annual Meetings.

**Dr. Dolores Lamb** completed her 2-year term as Chair of the Research Education, Conferences and Communications Committee. Dr. Lamb served as a faculty mentor and speaker for the Early Career Investigators Workshops (ECIW) with record-high registration in 2019 (42 early career investigators and 26 faculty and speakers), and the 2020 workshop being hosted fully virtually for the first time. She also served as the course director for a new online research education course, titled “Establishing Your Independent Urology Research Lab,” and provided overall leadership to guide topic selection, recruitment of program chairs and the content development for the annual Basic Sciences Symposium for AUA2020 and AUA2021.

**Dr. Aaron Milbank** served as Chair of the Bylaws Committee from 2019 to 2021. Dr. Milbank clarified and simplified AUA’s standard of review for nominees submitted to serve as Section Representatives on the AUA Board during his term. He also modified the license requirement for Active and Associate members to remove the word “unlimited” from the medical license requirement, which allowed licensed, practicing urologists to retain membership status and ensures their uninterrupted access to AUA educational resources and other benefits. During his term, Dr. Milbank specified that the Annual Business meeting may be held proximate to the Annual Meeting and may be held virtually upon a Board vote, standardized most council committee member terms to 3 years (renewable once) and updated the composition of several committees.

**Dr. J. Curtis Nickel** completed his term as Editor of the Update Series Advisory Committee from 2018 to 2021, where he assisted with the development of 40 high quality lessons to support the lifelong learning needs of AUA members. Dr. Nickel became Assistant Editor in 2012 and served on this committee overall for 17 years. During this time, he authored 9 lessons and reviewed approximately 460 manuscripts.

**Dr. Victor Nitti** served a 6-year term as Chair of the Education Council. Dr. Nitti grew the Urology Core Curriculum into the gold standard for resident education, initiated and developed the AUA/University podcasts series, and spearheaded the AUA’s ongoing Future of Urologic Education initiative addressing educational content, format and access needs for the next generation of urology care providers. He also launched the AUA/University YouTube channel in 2019 and a brand-new Self-Assessment Study Program (SASP) app in 2020.

**Dr. Aria Olumi** served a 6-year term as Chair of the Research Council. During his term, Dr. Olumi increased opportunities for effective research training during residency by creating and launching the Physician Scientist Residency Training Award and restructuring the Residency Research Award programs, as well as strengthened mentoring opportunities through the creation of the Urology Scientific Mentoring and Research Training (USMART) Academy. He also supported the peer review of nearly 300 research grant applications and the selection of nearly 200 new research awards to support the pipeline of early career urology researchers. Dr. Olumi helped to increase the Urology Care Foundation’s research funding portfolio from $42 million to $63 million and stimulated development of urology researchers by creating and launching the first-ever curricula of online research education courses, tripling engagement in the Early-Career Investigators Workshop and creating the Methods in Clinical Urology Research Workshop.

**Dr. Angie Smith** completed her 2-year term as Chair of the Urology Care Foundation Bladder Health Committee. Dr. Smith updated 2 patient guides, 5 fact sheets and 3 Web articles to align with the Muscle Invasive Bladder Cancer AUA Clinical Guideline, Non-Muscle Invasive Bladder Cancer AUA Guideline and Microhematuria AUA Guideline. She also updated content and designs of multiple existing patient education materials about Bladder Prolapse, Incontinence, Stress Urinary Incontinence (SUI), Nocturia and Pelvic Floor Strengthening. Dr. Smith contributed to the development of multiple industry funded projects to include 4 Bladder Cancer videos, 6 projects about Women’s Bladder Health and the Living Healthy Cookbook with Information about Urologic Cancers featuring celebrity chefs.

**Dr. Christian Twiss** was the Chair of the Judicial & Ethics Committee from 2019 to 2021. Dr. Twiss participated in reviews for member complaints for expert witness, ethics and marketing violations. He also oversaw draft revisions of the ethics modules for publication on the AUAUniversity and sponsored 5 Judicial & Ethics authored articles in AUA. News.

**Dr. Arthur Tarantino** completed his 1-year term as the Chair of the State Advocacy Committee. Dr. Tarantino created Proclamation and Telehealth Toolkits; helped with the development of Telehealth PowerPoint, State Legislation Support Letter, AUA Telehealth Strategy and

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Corporate Philanthropy and the Importance of Giving Back

Michael T. Sheppard, CPA, CAE
CEO, American Urological Association

Corporate philanthropy fosters employee engagement and generates business value. When businesses participate in corporate philanthropy, they are creating a positive public image for themselves, enhancing their relationships with consumers and creating a positive work environment.

There are many benefits of participating in corporate giving, including community engagement and increased networking opportunities, supporting meaningful charitable organizations and improving company culture.

Every September, the AUA staff comes together to support the ZERO Prostate Cancer Run/Walk. We raise funds and help make a difference in the lives of men and families fighting prostate cancer.

The funds raised from the Dr. Sanford J. Siegel Run/Walk (part of the ZERO Prostate Cancer Run/Walk series) provide support to patients through financial and emotional support programs and resources. With COVID-19, these funds are more critical than ever, as they help patients who are struggling through the crisis.

Participating in the event not only helps the patients we serve, but it offers staff a way to give back both personally and professionally. Meeting prostate cancer survivors and their families helps connect AUA staff together in a unified mission serving others in our local community. It creates meaningful lasting memories with colleagues that foster strong bonds within the organization.

Giving back provides a fulfilling sense of purpose. I encourage you to take part in corporate philanthropy activities not only for your business, but your community and yourself.

Prostate Cancer Awareness Month: The Urology Care Foundation Tackles a Disease and Diversity in Those Making Discovery

Harris M. Nagler, MD, FACS
President, Urology Care Foundation
Hofstra Northwell School of Medicine

One cannot discuss prostate cancer without acknowledging disparities in access to health care, as well as patient outcomes and scientists making discoveries. The Urology Care Foundation is committed to doing its part to erase these inequities. Each year, September marks the start of Prostate Cancer Awareness Month, a time to raise awareness about one of the most commonly diagnosed cancers in men. Throughout the month, health care providers, researchers, caregivers and other individuals focus their efforts on raising the nation’s awareness about prostate cancer and generating support for those impacted by the disease. The Urology Care Foundation’s commitment to promoting this cause and providing education to patients, as well as supporting research and humanitarian efforts, makes not only September but every month a time to fight the battle against this deadly disease.

Supporting Early Detection

The question of prostate cancer screening is a personal and complex one. Deciding when to talk to men about prostate cancer testing depends on such risk factors...
as age, general health, family history and ethnicity. AUA clinical guidelines recommend average risk men who are 55 to 69 years of age discuss prostate cancer screening with their doctors and decide whether prostate cancer testing is right for them. For men aged 40 to 54 who have a higher risk of prostate cancer, such as African American men or those with a family history, the guidelines recommend patients discuss their screening options with their physician to assess the benefits and risks of testing.

To better support you and your patients, the Urology Care Foundation has enhanced our digital footprint. Using QR code technology, we’ve created centralized information on specific urology conditions, which your patients can access during their telehealth or in-office appointment (see figure). Using the Urology Care Foundation QR code, I encourage you to download our early detection for prostate cancer patient education bundle. Additional QR codes can be downloaded at UrologyHealth.org.

Funding Answers

The Urology Care Foundation has maintained a strong commitment to research for more than 4 decades. More than 30 endowments and $34 million in research funding have supported more than 850 outstanding young scientists, and advancing prostate cancer research has been a key feature of this support both historically and in our current awardees. Among our 2021 Research Scholars, more than a third will be working on projects aimed at developing novel prostate cancer diagnostic and treatment strategies, as well as a better understanding of the underlying mechanisms of the disease.

Because of the generous support of donors like you, we are able to provide funding to help the brightest minds conduct the best urology research. Foundation-funded research has led to advancements in such areas as the detection of aggressive prostate cancer by combining magnetic resonance imaging techniques with urine biomarkers in patients with newly diagnosed prostate cancer. It is these developments that make us proud to support the research journeys of many talented scientists of diverse backgrounds, including:

• **Timothy Daskivich, MD.** Dr. Daskivich, a Foundation Rising Star, is conducting research to improve the quality of life for men with advanced prostate cancer and further fine-tune the shared decision-making process between patients with advanced prostate cancer and their physicians in hopes of reducing any overtreatment of the disease.

• **Yash Soni.** Mr. Soni is a third-year medical student and recipient of the Foundation’s Nathiram Lalchandani Medical Student Fellowship award. Under mentorship from Dr. Himanshu Arora and Ramjith Ramasamy, Mr. Soni’s study will explore the therapeutic potential of tadalafil on castration-resistant prostate cancer to determine its therapeutic applicability as an anti-prostate cancer drug.

• **Ashanda Esdaille, MD.** Dr. Esdaille is a new Foundation Research Scholar whose research will offer a better understanding of the impact of racial differences in the pharmacological modulation of the androgen deprivation therapy response on a systemic level and within prostate cancer microenvironments.

• **Deborah Kaye, MD.** Dr. Kaye’s research is aimed at finding breakthroughs in patient care, including decreasing the financial burden for patients with advanced prostate cancer by further understanding provider decision making.

• **Keyan Salari, MD.** Dr. Salari’s research will examine recombination deficiency as a determinant of prostate cancer progression to better guide precision therapy in patients with prostate cancer. Dr. Salari and Dr. Kaye (above) are both continuing the legacy of our Research Scholar Award in advancing prostate cancer research.

Further Educating Patients

As the world’s leading nonprofit urological health foundation, the Urology Care Foundation maintains one of largest and most dynamic libraries of urological patient education. With everything from fact sheets and brochures to videos, podcasts and blogs, the Foundation is proud to offer multiple forms of information, and in multiple languages, about this disease to men and their loved ones for free.

Please make sure to direct your patients to UrologyHealth.org/PCInfoCenter and ensure they receive these trusted resources during this crucial awareness month.
SASP
SELF-ASSESSMENT STUDY PROGRAM

CUSTOMIZE YOUR LEARNING WITH THE NEW SASP APP!

The brand new app provides a more personalized, interactive, and convenient learning experience. SASP Online+App subscribers have access to all new features, including:

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- **Rankings and Leaderboard**
- **Universal Spaced Learning**
- **Links to References**

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AUANET.ORG/SASP!
Congratulations to the 2021 Humanitarian Grant Recipients!

UNA JEANIE LEE, MD
*Medicine for Humanity*

Dr. Lee’s collaboration with Medicine for Humanity (MFH) and Mbarara University of Science and Technology began in 2011 as a fellow, then in 2013 as an attending surgeon, and more recently in 2019 as trip medical director for MFH. Support through the UCF/AUA Humanitarian grant will help develop the care model for obstetrical fistula into a self-sufficient, year-round repair, recovery, and reintegration program for low-income East African women.

DAVID E. RAPP, MD
*Global Surgical Expedition*

In 2012, Dr. Rapp founded Global Surgical Expedition (GSE), a global charity that delivers urologic care to underserved nations. GSE has a long-standing history of comprehensive initiatives to not only provide surgeries, but also make a greater impact through research, education, and infrastructure growth. The UCF/AUA Humanitarian grant will support work in conjunction with GSE, specifically to support the delivery of urologic surgeries in Belize.

Learn more at UrologyHealth.org/Humanitarian
IN

advanced prostate cancer,
ARE YOU SEEING
the risks, such as cardiovascular?

Patients with advanced prostate cancer are at risk for other serious conditions, such as cardiovascular disease, diabetes, and osteoporosis—risks that may increase with androgen deprivation therapy.1-5


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