American Urological Association

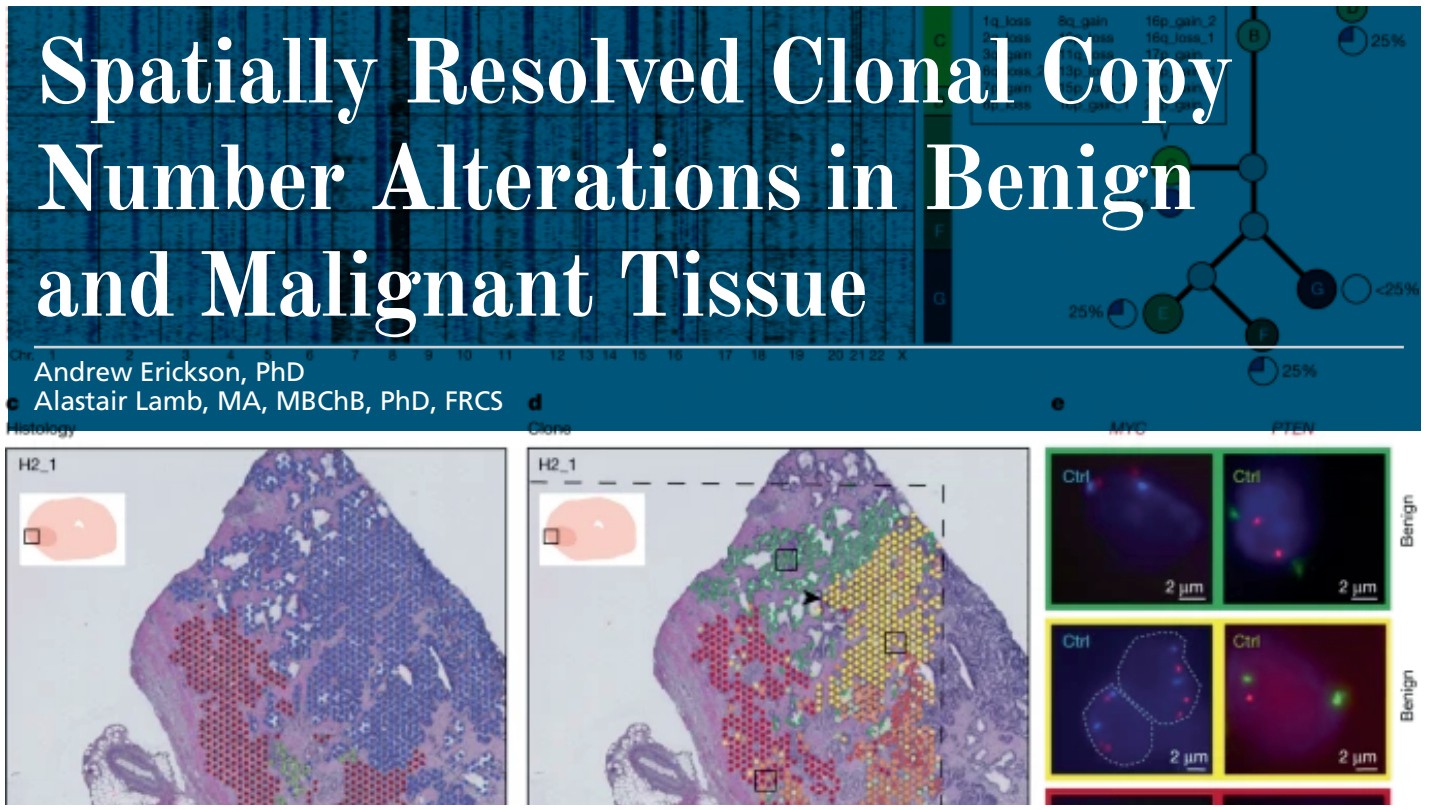
AUA News Extra

APRIL 2023
VOLUME 2
ISSUE 4

THE OFFICIAL NEWSMAGAZINE OF THE AMERICAN UROLOGICAL ASSOCIATION

Spatially Resolved Clonal Copy Number Alterations in Benign and Malignant Tissue

Andrew Erickson, PhD
Alastair Lamb, MA, MBChB, PhD, FRCS

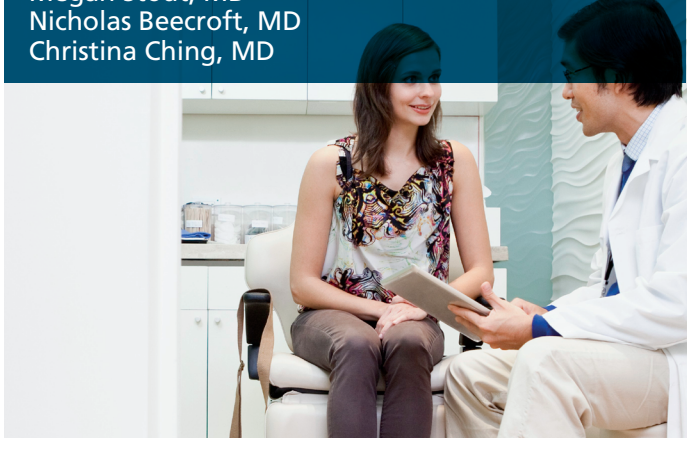


Patient-Advisors.com: Surgery from the Patient's Perspective

Bruce B. Garber, MD

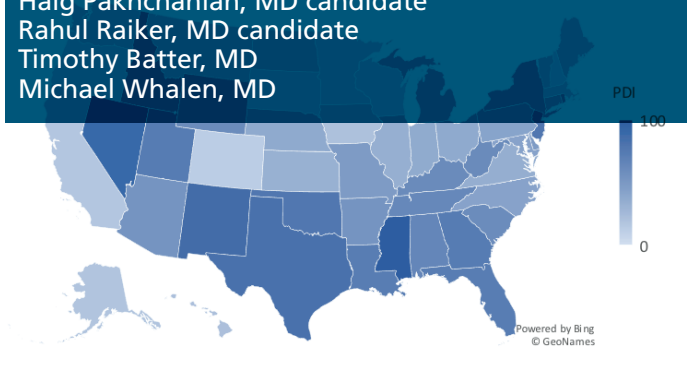
Hypospadias: Adult Sexual Function and Fertility Concerns After Pediatric Repair

Megan Stout, MD
Nicholas Beecroft, MD
Christina Ching, MD



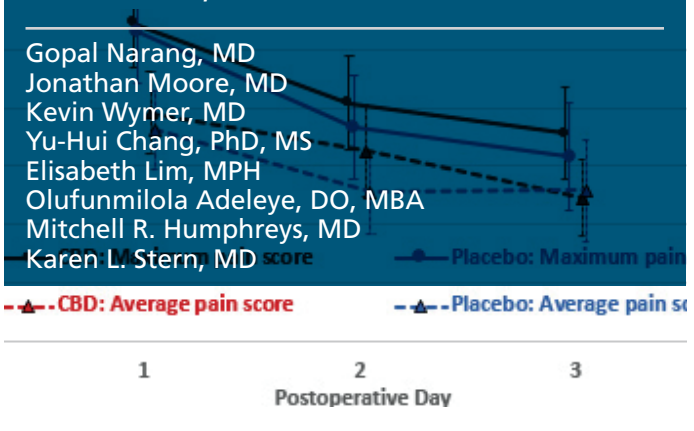
Patient Demand for Urologists in the United States: A Google Trends Analysis

Michael Wynne, MD candidate
Haig Pakhchanian, MD candidate
Rahul Raiker, MD candidate
Timothy Batter, MD
Michael Whalen, MD



Effect of Cannabidiol Oil on Post-ureteroscopy Pain for Urinary Calculi: A Randomized, Double-blind, Placebo-controlled Trial

Gopal Narang, MD
Jonathan Moore, MD
Kevin Wymer, MD
Yu-Hui Chang, PhD, MS
Elisabeth Lim, MPH
Olufunmilola Adeleye, DO, MBA
Mitchell R. Humphreys, MD
Karen L. Stern, MD



INSIDE THIS ISSUE

AUANews Extra
April 2023, Volume 2 | Issue 4

PUBLICATIONS DEPARTMENT
American Urological Association
publications@AUAnet.org

PRODUCTION
KnowledgeWorks Global Ltd.
2905 Byrdhill Road, Richmond, VA 23228

ADVERTISING SALES
The Walchli Tauber Group
(443) 512-8899
stephen.tauber@wt-group.com

Spatially Resolved Clonal Copy Number Alterations in Benign and Malignant Tissue

Andrew Erickson, PhD
University of Oxford, United Kingdom

Alastair Lamb, MA, MBChB, PhD, FRCS
University of Oxford, United Kingdom
Oxford University Hospitals NHS Foundation Trust, United Kingdom

The transition from benign to tumor tissue is poorly understood. Determining the molecular events that underpin tumor transformation will be fundamental to improving the early diagnosis of cancer. In our paper presented at AUA2022 and recently published in *Nature*, we report the first step to generate a view of the genome integrity in situ using spatial transcriptomics (video available at https://youtube/YdzF0-PFXhc).[1] This approach provides a high-resolution map of the entire transcriptome over thousands of areas (spots) at near–single cell resolution. We applied this approach to 10 patients' tissues, including 3 whole axial sections of prostates, to study clonal dynamics in heterogeneous multifocal prostate cancer.

Using the spatial transcriptomic information as input, we developed a computational framework to detect gains and losses of genomic information at near–single cell resolution. Surprisingly, not

→ Continued on page 3

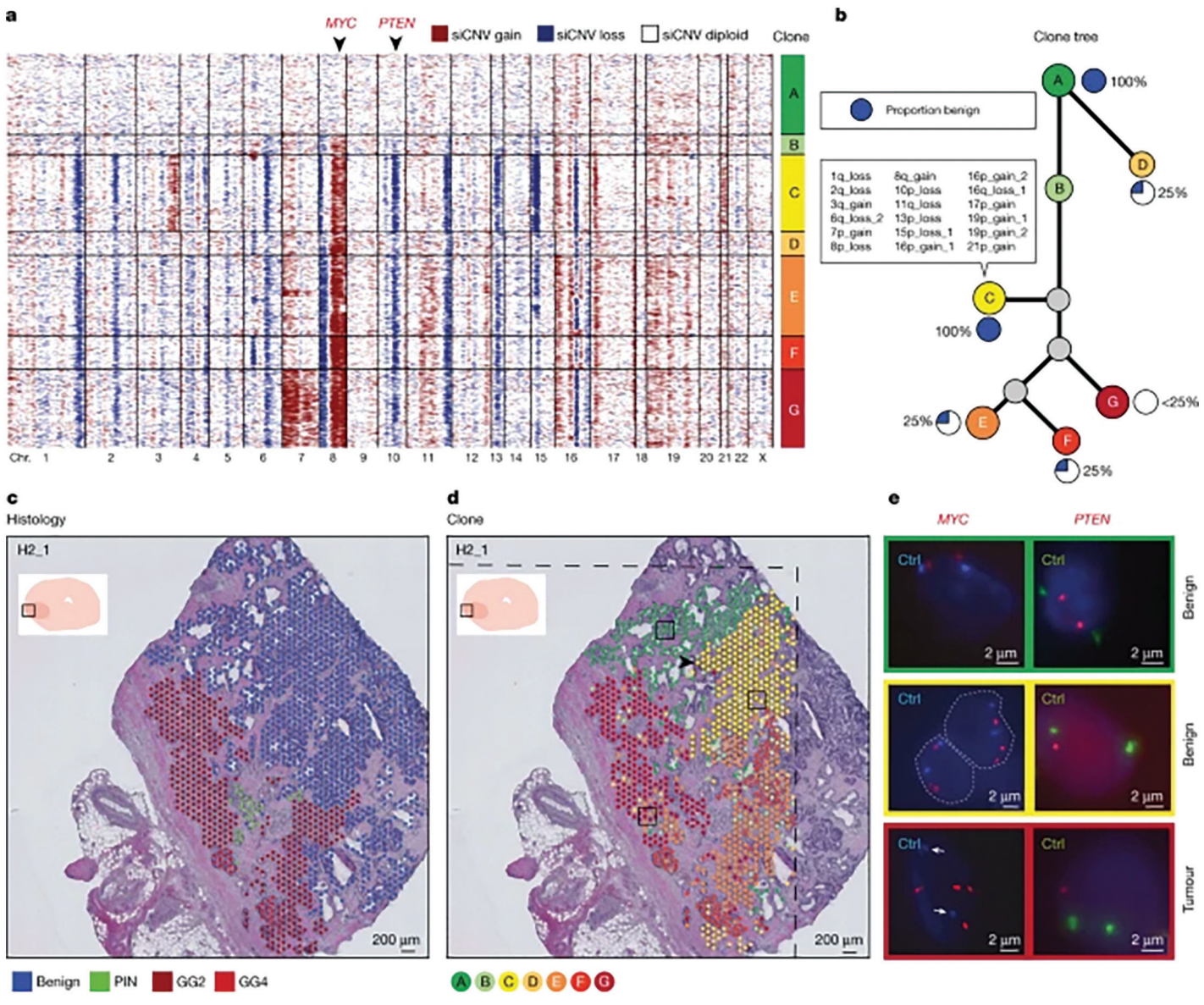


Figure. Ctrl indicates control; GG, Gleason grade; PIN, prostatic intraepithelial neoplasia; siCNV, spatial inferred copy number variations.
Reprinted with permission from Erickson et al, *Nature*. 2022;608:360-367, and used under CC BY 4.0 (http://creativecommons.org/licenses/by/4.0/).[1]

SPATIALLY RESOLVED CLONAL COPY NUMBER ALTERATIONS

→ Continued from page 2

only were we able to identify distinct clonal patterns within tumors, but also in nearby benign epithelia. This allowed us to construct evolutionary clone trees from healthy benign tissue, through altered benign to multiclonal tumors (see Figure). We were able to corroborate these findings in a separate patient's cutaneous squamous cell carcinoma which shared copy-number amplifications with nearby benign squamous epithelial cells.

> "Surprisingly, not only were we able to identify distinct clonal patterns within tumors, but also in nearby benign epithelia."

This unsupervised approach captures molecular and spatial continuums in a tissue context. Future studies could use this approach to determine primary clonal populations with metastatic potential, thereby informing prognosis and treatment selection. Further work will also investigate events leading to prostatic transformation, providing further insights for early detection and future screening trials. ■

> "This unsupervised approach captures molecular and spatial continuums in a tissue context."

1. Erickson A, He M, Berglund E, et al. Spatially resolved clonal copy number alterations in benign and malignant tissue. *Nature*. 2022;608(7922):360-367.

AUA ADVOCACY

Advocacy at the Office Door

Logan Galansky, MD
Johns Hopkins Brady Urological Institute, Baltimore, Maryland

Over the past 2 years, I've had the privilege of attending the AUA Annual Urology Advocacy Summit in Washington, DC. This conference is intended to bring urologists, advanced practice providers, patient advocates, and other stakeholders from across the country together to advocate for their patients, practices, and the future of urology. For myself and many others, the highlight of the Summit is meeting with members of Congress to discuss the AUA's legislative priorities.

As we waited to begin our congressional meetings, I felt the same sense of excitement and nervous anticipation that I experienced when I first walked through the heavy wooden doors of Capitol Hill years ago as a Senate intern and then later as a health policy consultant. In preparation, I had pored over the details of our policy asks. However, when it came time to discuss the AUA's legislative agenda with lawmakers, the conversations kept returning to the same question: how will this policy affect patients and providers?

I realized that while the specifics of proposed policy changes are important, what is most salient and influential in garnering support for legislative action is what drew me to medicine in the first place–the human connection so deeply ingrained in clinical care. And it is this emphasis on the real-world impact of policy that makes advocacy so very important.

As a urology resident at a large urban academic center, I've seen how policy, financial, and logistical factors can alter patient outcomes just as much as medical maladies. Frequently as residents, we are the primary point of contact for patients struggling within the confines of the health care system. Whether it's a patient without insurance coverage presenting to the emergency department after months of hematuria only to be diagnosed with a new bladder mass or a long-time clinic patient suffering from refractory overactive bladder who cannot receive treatment without prior authorization, I am brought back to the words of a speaker from last year's Summit, "Advocacy begins when the patient walks through your office door."

While my focus in residency has primarily been dedicated to learning medical management and surgical skills, the opportunities I've had through the AUA's Policy & Advocacy Resident Work Group and the AUA Public Policy Council's committees have been invaluable in enhancing my understanding of advocacy and, consequently, improving my insight and toolkit for caring for patients.

Finding extra time as a busy resident can often feel unattainable, but I would encourage not just those passionate about policy and advocacy, but anyone invested in providing their patients with high-quality, comprehensive care to take advantage of the various ways to become involved in the AUA's advocacy efforts. Even outside formal advocacy venues, it is critical that we recognize every patient encounter as an inherent opportunity for advocacy. By identifying pathologies as well as barriers to health, we can share patients' stories and add our voice as providers to the political milieu at a time when such representation is desperately needed.

> "The first step is welcoming a patient through that office door."

Policy, politics, and the health care system can seem like impenetrable institutions. Nevertheless, through employing our perspective gained from the unique position we have in the patient-provider relationship, I believe that we can inform policy and make a meaningful difference in the field of urology for years to come. The first step is welcoming a patient through that office door. ■

Patient-Advisors.com: Surgery from the Patient's Perspective

Bruce B. Garber, MD
Urologic Surgeons Inc, Bryn Mawr, Pennsylvania

Urologists are constantly scheduling patients for surgical procedures. As part of the informed consent process, it is necessary to discuss the details of the procedure, the rationale behind it, the risks and benefits of the procedure, and the alternatives, along with the expected convalescence and surgical outcomes. When discussing surgical outcomes, urologists are very familiar with reporting their results as assessed by validated questionnaires such as the International Index of Erectile Function,[1] Sexual Health Inventory for Men,[2] AUA Symptom Index,[3] etc. However, these questionnaires are not very useful when discussing surgical outcomes directly with patients. In my own practice as a busy penile implant surgeon, I was well-equipped to discuss surgical details. However, I found that there were many questions that I could not definitively answer, such as:

1. How much pain will I have postoperatively?
2. Will a partner be aware that I have an implant?
3. Will this implant affect penile sensation in any way?
4. Will I be able to play sports, ride a bike, etc, after an implant?
5. Will an implant enhance my sexual confidence?
6. Will the implant change the appearance of my genitalia?
7. Can I speak with someone who has already received an implant?

To fill this knowledge gap, I started using "patient advisors" (Advisors) for routine surgical procedures (eg, inflatable penile implant, vasectomy, prostate laser treatment). These Advisors were patients who had fully recovered from their procedure, and were willing to discuss their pre- and postoperative experiences with other patients. Initially I maintained a list of Advisors, and gave their phone numbers to prospective patients. These patients were very happy to be able to talk to someone who had already "been there, done that." The patient advisor program was so well received that I encouraged the Advisors to speak at my public health seminars and videotaped some of them for my urological practice website. It became clear to me that the Advisors could convey a wealth of information that a surgeon was unaware of, since most surgeons have not undergone the procedures that they perform. Consequently, I constructed a free website that would allow patients worldwide who had undergone virtually any surgical procedure (urological or nonurological) to permanently post their unvarnished, unedited surgical experiences, along with any relevant photos. This information is available to anyone, anywhere via the website: patient-advisors.com.

Patients who have recovered from a procedure are able to post their experiences, so that other patients can read and benefit from that information. Patients disclaim any privacy rights to information that they disclose, can be anonymous if they wish, and are able to message each other if they so desire. Patients who are considering an elective surgical procedure are now able to read the experiences posted by many other patients who have recovered from that procedure. Patients are also allowed to post information that they might not be comfortable disclosing to their surgeon (eg, postoperative side effects that their surgeon failed to mention). Surgeons can certainly benefit by reviewing the candid information written by postoperative patients.

In 2022, the AUA recognized the importance of this type of information via its AUA Patient Perspectives Program. The stated goals of this program are to "bring patient voices into the fold," to allow "patients living with urological conditions to share their own treatment journey," and to give patients the opportunity "to present their story…at the world's largest medical meeting in urology." The patient-advisors.com website is sparsely populated at this point. However, if urologists and other surgeons encourage their postoperative patients to record their experiences on patient-advisors.com, they can create permanent records available worldwide in virtually all languages. This information can help improve the informed consent process for surgical patients, and will help them become better informed about any upcoming surgical procedures. ■

"It became clear to me that the Advisors could convey a wealth of information that a surgeon was unaware of, since most surgeons have not undergone the procedures that they perform."

1. Rosen RC, Riley A, Wagner G, Osterloh IH, Kirkpatrick J, Mishra A. The International Index of Erectile Function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urology*. 1997;49(6):822-830.
2. Rosen RC, Cappelleri JC, Smith MD, Lipsky J, Pena BM. Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *Int J Impot Res*. 1999;11(6):319-326.
3. Barry MJ, Fowler FJ, O'Leary MP, et al. The American Urological Association Symptom Index for Benign Prostatic Hyperplasia. The Measurement Committee of the American Urological Association. *J Urol*. 1992;148(5 Pt 1):1549-1557.

MEDICAL STUDENT COLUMN

Exposure Makes a Vas Deferens: A Third-year Medical Student's Perspective on Her Urology Rotation

Megan D. Haney, BS
California University of Science and Medicine, Colton

Like many other medical students, my exposure to and knowledge of urology prior to starting my rotation was fairly limited. Urinary tract infection in a sexually active female–Staph saprophyticus. Sustained erection after taking Trazodone–priapism. Flank pain radiating to the groin–kidney stones. These were the buzzword scenarios I had seen repeatedly during Step 1 studying that formed the base of my limited understanding of urology. Working as a scribe in a nephrology clinic for 2 years before medical school, I would often see patients be referred to urology for bothersome lower urinary tract symptoms or obstructive stones. But I didn't fully understand what happened beyond the referral. Having now completed a 4-week urology rotation, my eyes have been opened to an entirely fascinating, challenging, and rewarding specialty that I feel more medical students should have the opportunity to learn about.

→ Continued on page 5

EXPOSURE MAKES A VAS DEFERENS

→ Continued from page 4

I arrived on my first day of the rotation with an open mind and no expectations besides an eagerness to learn and the hope that I wouldn't scrub in with a shoe cover for a scrub cap. I jumped into a radical orchiectomy, and I was immediately impressed by the friendly nature and eager-to-teach attitude of the attending and resident. We discussed testicular cancer, lymphatic drainage, and the preferred surgical approach for an orchiectomy. At the end of my rotation, in a full circle experience, I was able to follow up with this same patient, reassuring him that the cancer appeared to have been caught at an early stage and explaining the principles of active surveillance.

My second day of the rotation was a busy clinic day. I felt like a deer in headlights with the amount of terminology, acronyms, and procedures I had never heard of. I opened what felt like 20 tabs to google things like "URS/LL" and "PCNL." Luckily, the American Urological Association (AUA) has a very helpful PDF of common urology acronyms available on their website. This is also when I stumbled across the AUA medical student curriculum, which I found immensely helpful throughout my rotation. On this same clinic day, I helped to order suprapubic catheter supplies for a patient with neurogenic bladder, I talked to a patient about prostate cancer screening, and I observed how a transrectal prostate biopsy is performed. The following day in the operating room, we were able to perform a cystolitholapaxy for a patient who had an entombed ureteral stent. We also performed a vaginal repair for a patient with severe pelvic organ prolapse that was causing significant discomfort and urinary incontinence.

> "Over the course of my rotation, I came to develop a genuine respect and curiosity for urology—a field that most medical schools provide minimal exposure to."

Urology offers such a wide variety of pathologies, a diverse patient population, and the opportunity to make a significant impact on a patient's overall quality of life. It also allows for great continuity of care and meaningful long-term relationships with patients. After scrubbing into a prostatectomy during my second week, we followed up with this patient regularly in clinic to discuss his Gleason score, monitor his postoperative progress, and discuss future surveillance. Given that many urological cancers (such as prostate and testicular) are often detected early and have high 5-year survival rates, urology provides the opportunity to develop long-lasting, unique relationships with patients as you guide them through their cancer diagnosis, treatment, and subsequent follow-up over many years.

Over the course of my rotation, I came to develop a genuine respect and curiosity for urology—a field that most medical schools provide minimal exposure to. Urology is a specialty that offers extensive variability and a distinct mix of cutting-edge surgical, medical, and in-office procedures. This, combined with the opportunity to provide preventative care and develop long-term patient relationships, makes it a very appealing field that I would encourage fellow students to explore.

If your medical school does not have a home urology residency program or has limited educational exposure to urology, know that you are not alone!

> "If your medical school does not have a home urology residency program or has limited educational exposure to urology, know that you are not alone! You can reach out to nearby programs via email to express interest and to get involved in research."

You can reach out to nearby programs via email to express interest and to get involved in research. You may also be able to take a urology elective or create an individualized clinical opportunity during your clerkship years. As many medical schools transition to an 18-month preclinical curriculum, there is greater time to explore the field through shadowing or research opportunities before applying to residency. Moreover, networking and mentorship through conference attendance and social media are highly valuable tools to establish connections within the tight-knit field of urology—make sure to keep your CV updated! If your school has an academic advising department, meet regularly with an advisor, who can help you seek out opportunities and plan your fourth-year acting internship experiences with other urology departments.

At the medical school level, I believe there is further opportunity to increase early exposure to the field of urology. Urological topics are often sprinkled into preclinical courses during Renal or Reproduction blocks, but I believe greater clinical emphasis can be placed on urology as a distinct specialty with increased awareness of the variety of conditions a urologist treats. Additionally, there is opportunity for growth in the clinical skills portion of medical school curricula to expand training for medical students on essential skills such as Foley catheter placement, basic suturing, knot tying, and performing testicular and digital rectal exams. With all of this in mind, below are resources I found particularly helpful during my own rotation that I will continue to utilize during other clerkships. Beyond these resources, I would strongly encourage students to seek out clinical experiences in urology because firsthand exposure truly does make a vast difference.

Helpful Urology Resources for Medical Students

- AUA Medical Student Curriculum (also available in App store): https://www.auanet.org/meetings-and-education/for-medical-students/medical-students-curriculum.
- AUA Medical Student Resources: https://www.auanet.org/meetings-and-education/for-medical-students/medical-student-resources.
- AUANet Common Urology Acronyms: https://www.auanet.org/Documents/education/medical%20student%20curriculum/Urology-Abbreviations.pdf.
- AUA Inside Tract Podcast (also available on Apple Podcast): https://www.auanet.org/meetings-and-education/podcast.
- AUA University Podcast (also available on Apple Podcast): https://auau.auanet.org/podcast. ■

Advanced Practice Provider Urology Fellowships

Corinna Hughes, APRN, CNP, DNP
Mayo Clinic, Rochester, Minnesota

Advanced practice provider (APP) urology fellowships have emerged in response to the growing demand for APPs with specialized training in urology. These fellowships provide APPs (nurse practitioners and physician assistants) with the opportunity to gain hands-on experience and in-depth knowledge in the field of urology, helping to meet the increasing need for urological care. The APP urological fellowships are optional postgraduate programs for APPs to gain additional training and expertise in urology. They are not mandatory for practicing urology but can enhance skills and knowledge.

"The APP urological fellowships are optional postgraduate programs for APPs to gain additional training and expertise in urology."

Most fellowships are 12 months in length. The fellowships provide a comprehensive and intensive training experience, including clinical exposure to a wide range of urological conditions, surgeries, and procedures. During the fellowship, APPs receive mentorship from experienced urologists and APPs. The curriculum may include didactic sessions, conferences, procedural training, and research opportunities, and some offer hands-on training in the operating room. The APP fellowships offer a stipend or salary to cover living expenses during the fellowship period. The amount of compensation can vary depending on the fellowship program, location, and other factors. While the pay may not be as favorable as a job contract, it affords the candidate an additional year of practical experience akin to that of an "on-the-job" training program, unencumbered by the typical duties of a regular job. This experience can be leveraged to attain a head start in one's future professional endeavors.

There are several prestigious institutions offering APP urology fellowships, including Mayo Clinic, University of Virginia, The University of Texas Southwestern Medical Center, Vanderbilt University, and Emory University Hospital. These programs are highly competitive and offer a unique opportunity for APPs to gain the specialized knowledge and skills necessary to excel in the field of urology.

In 2021, I successfully completed the 12-month comprehensive Mayo Clinic School of Health Sciences APP Urology Fellowship in Rochester, Minnesota. The clinical experiences included general urology, endourology, oncology, urogynecology, neurourology, men's health, reconstructive urology, and pediatric urology. There were opportunities to shadow in radiology, radiation oncology, pelvic floor physical therapy, and sexual health counseling. The supplementary observations offered an extensive and balanced learning opportunity. The procedural training opportunities encompassed a range of procedures such as cystoscopies, ureteral stent removal, percutaneous tibial nerve stimulation, catheter exchanges, and prostate ultrasounds. The program featured specialized training that surpasses what is typically offered in graduate studies. The fellowship fostered a supportive and empowering atmosphere for personal development.

An APP urology fellowship can elevate a job application by demonstrating a commitment to personal and professional growth, as well as providing valuable hands-on experience in urology. The skills, knowledge, and networks the applicant gains from the fellowship can make them a more attractive candidate for relevant job opportunities. Upon completing the APP urology fellowship, I was confident in my ability to deliver safe and effective urological care.

Following a year of exposure to advanced medical therapies and pioneering research, I decided to advance my professional path at Mayo Clinic. The fellowship allowed me to specialize in urology and demonstrate my initiative, leadership skills, and teamwork abilities. I am now a nurse practitioner in the Urology Department at Mayo Clinic.

"This training can help advance their careers and prepare them for leadership positions in the field."

In conclusion, APP urology fellowships provide a unique opportunity for APPs to gain specialized knowledge and hands-on training in the field of urology. This training can help advance their careers and prepare them for leadership positions in the field. An APP urology fellowship enhances one's clinical skills and knowledge, provides comprehensive and intensive training in urology, and fosters a highly competent and confident provider. APP fellowship programs provide hands-on experience and exposure to a wide range of urological conditions, equipping the provider with the ability to diagnose, treat, and manage complex cases, ultimately leading to better patient outcomes. ■

FROM THE RESIDENTS & FELLOWS COMMITTEE

How to Improve Your Residency Experience: Lessons From a New Urology Training Program

Samuel J. Ivan, MD
Carolinas Medical Center, Charlotte, North Carolina

In a little over a year, I will become my program's fifth graduating resident. The unique opportunity to take part in the initial growth of a residency training program has led me to reflect on some of the positive features of this growth. In sharing my experience, I hope to contribute to conversations on resident education and promote collaboration between urology residencies for the betterment of all our training programs.

Culture Is Crucial

I cannot overstate the value of culture in a residency program. Although difficult to define, I think good culture in residency is mutual support between learners and educators, both personally and professionally. This is often thought of, and can occur, in a top-down manner. Program faculty and leadership can set a positive tone, but what I have found equally crucial in a new residency program is the power of

→ Continued on page 7

→ Continued from page 6

> "In sharing my experience, I hope to contribute to conversations on resident education and promote collaboration between urology residencies for the betterment of all our training programs."

residents to contribute to culture. Do you stay late when there is an opportunity to help? Do you take extra time to teach a junior resident or medical student? Do you support your coresidents outside of the hospital? If so, you are building a positive culture at your residency. Your coresidents and faculty will notice, and eventually follow suit.

Open to Opportunities

Throughout residency, there are many people you will work with—program coordinators, nursing staff, PhD faculty, and others—who want to contribute to your education. These supportive relationships can create opportunities that will enrich your residency experience. This became clear to me in our program by working with our many advanced practice providers (APPs). Before our residency program started, they assisted with consults, bedside assisting, weekend rounding, and call nights. As our residency has grown, we have been learning to integrate resident and APP responsibilities, and increasingly can champion APP involvement in resident education. In our experience, APPs have facilitated early opportunities in the operating room and have provided strategic call coverage for events like graduation and a resident retreat weekend. This creates space for self-directed resident education and helps tilt the scales of service vs education. Within our program, opportunities created by our APPs have been integral to both education and wellness. Your program may look quite different, but I encourage you to appreciate the unique resources available to you and engage them early to amplify their contribution to your residency experience.

Growth Mindset

Inertia develops in any organization as patterns develop. Eventually things happen because it's "the way it's always been done." In the early years of the residency, we haven't run into this inertia so much as we've watched it settle in. This real-time vantage point has led me to appreciate the intentionality and energy needed to pursue growth and combat inertia. Without willingness to seek feedback, embrace change, and learn from failure, meaningful growth will rarely occur. We've instituted biannual town halls with residents and program leadership to ensure that these growth-oriented conversations have a dedicated space. Whether rotation schedules, journal club, or buying protective lead for residents, we have seen many changes and improvements born of this initiative. If something is the way it's always been, it may be time for a change.

As residents and fellows, we can celebrate the breadth of excellent urology training programs. Even so, we should constantly look for ways to improve our own residency experience and the experience of others. Residency works best with active participation, and I hope these reflections have encouraged you to maximize your own. I would also love to hear the positive experiences at your program that we should adopt here! Send me an email: samuel.ivan@atriumhealth.org. ■

CASE REPORT

Urotheliectomy

Diego Barreiro, MD
Instituto de Investigaciones Medicas Alfredo Lanari, University of Buenos Aires, Argentina

Lázaro Deinys Rodríguez Borrego, MD
Hospital General Docente Iván Portuondo, Artemisa, Cuba

Castro Montiel Francisco, MD
Instituto de Investigaciones Medicas Alfredo Lanari, University of Buenos Aires, Argentina

Colicigno Mauricio, MD
Instituto de Investigaciones Medicas Alfredo Lanari, University of Buenos Aires, Argentina

Lafos Norberto, MD, PhD
Instituto de Investigaciones Medicas Alfredo Lanari, University of Buenos Aires, Argentina

Introduction

Renal carcinoma of the Bellini pathway is a very rare histological variant of renal tumor. It was first described in 1949 and recognized with its own identity in 1986. It is an aggressive form of renal neoplasia that accounts for 1% of malignant epithelial lesions of the kidney.[1]

Case Presentation

A 76-year-old male patient presented with a history of being functional monorenal due to hydronephrosis of unclear cause, chronic renal failure (usual creatinine between 1.5 and 1.7 mg/dL), with a diagnosis of upper urinary tract carcinoma in October 2020 performed by ureterorenoscopy but without biopsy at another center, and he had a history of urinary tract infections due to multidrug-resistant organisms.

He was admitted during the pandemic, presenting with gross hematuria with the presence of clots associated with intermittent dysuria and left low back pain, subsequently developing asthenia, hyporexia, and oliguria. He presented with deterioration of renal function (urea 192 mg/dL, creatinine 6.98 mg/dL) with hyponatremia (120 mEq/L), elevated lactate dehydrogenase and creatine phosphokinase (235 and 224 U/L, respectively), and positive urinary culture for multiresistant Klebsiella pneumoniae. Swab for SARS-CoV-2 was negative. CT was performed (Figures 1 and 2).

Emergency hemodialysis was performed after correction of hyponatremia and meropenem treatment. Given the possibility of a urothelial tumor in the left renal pelvis, with gross hematuria, a nonfunctioning contralateral kidney (patient on dialysis) and multiple urinary tract infections by multidrug-resistant organisms, it was decided in a multidisciplinary consultation to perform bilateral nephroureterectomy and cystoprostatectomy. This procedure (urotheliectomy) was described for the first time in 2006 and is an

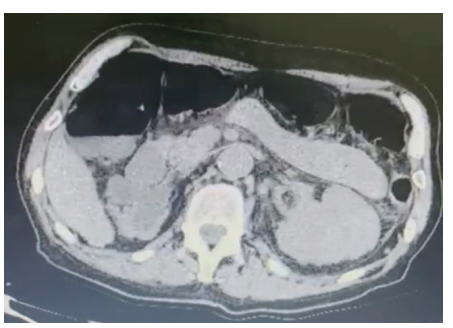


Figure 1. Atrophic right kidney, dilated left kidney with heterogeneous pelvic content (without contrast).

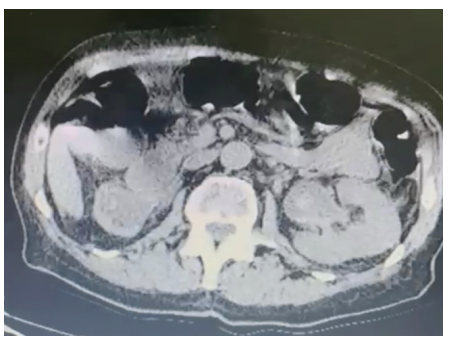


Figure 2. CT axial cut with heterogeneous content in left renal pelvis

→ Continued on page 8

UROTHELIECTOMY

→ Continued from page 7

option for multicentric urothelial carcinomas, and we considered it as a solution for this case. The term was first coined by Berglund et al to describe a surgical procedure in which both kidneys were resected with ureters and bladder.

The surgical specimen showed an atrophic and uronephrotic right kidney, bladder with chronic inflammation, and the left kidney with a large Bellini tumor (Figures 3-7).

The patient became anephric, performing triweekly dialysis, and had a post-surgical CT at 3 months without evidence of local or distant relapses (Figures 8 and 9).

The patient died 7 months after surgery without evidence of recurrence, and without systemic treatment, after suffering a bleeding vascular brain accident.

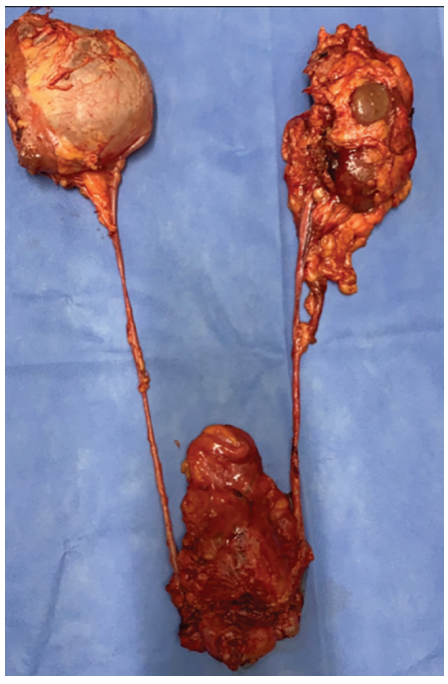


Figure 3. Urotheliectomy.

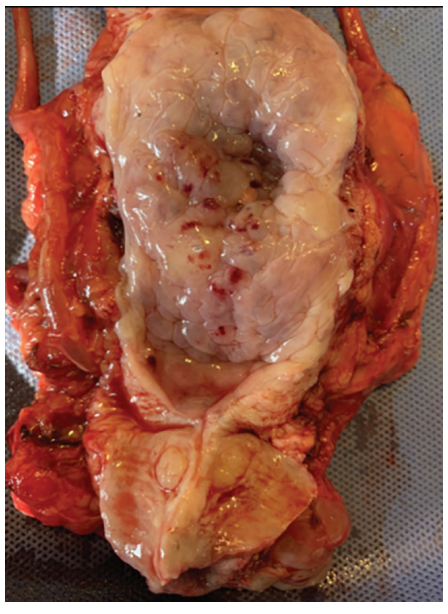


Figure 4. Bladder and prostate with conic infection.

Discussion

Bellini tumors usually mimic upper urothelium tumors (Figures 3 and 6),[2] so they are usually a diagnostic challenge.

Renal carcinomas of the Bellini collecting ducts are treated by surgery, systemic therapy, or both. They have an average survival time of 11 months, and only 1 patient survived more than 5 years after diagnosis.[3] Most cases are similar to our patient, who managed to achieve a shorter survival of 7 months after urotheliectomy, and die from other causes without recurrence.

The best treatment available today is based on surgical resection whenever possible, usually accompanied by systemic chemotherapy with the same regimen as urothelium tumors in cases of distant disease. However, in most cases, the prognosis is usually poor despite the treatment instituted,[4] so we agree on surgical performance and subsequent follow-up of the case presented in our study, performing urotheliectomy.

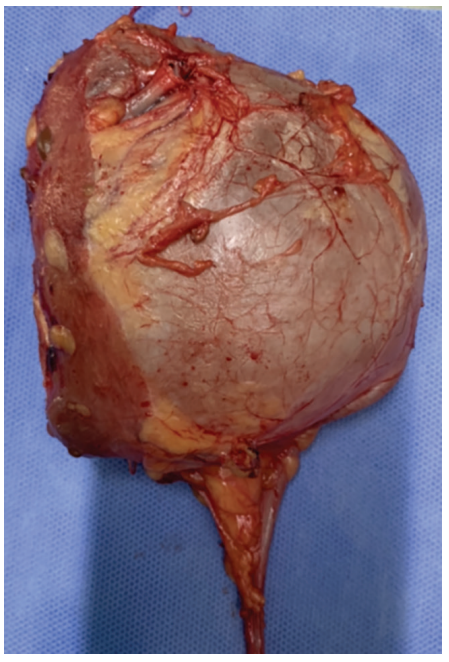


Figure 5. Right atrophic uronephrotic kidney.

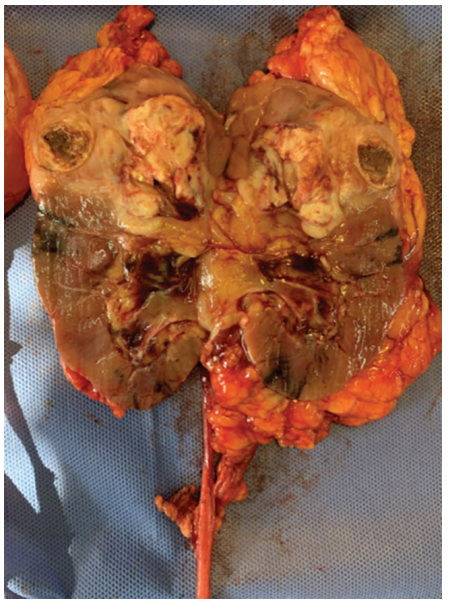


Figure 6. Left kidney Bellini tumor.

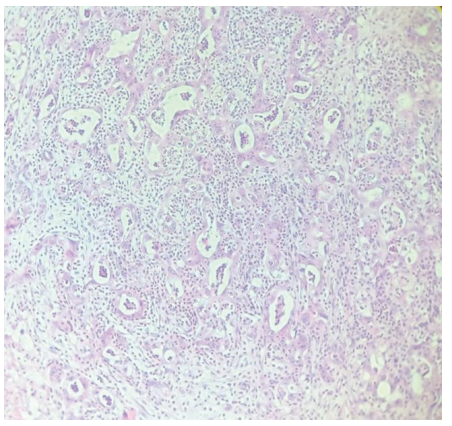


Figure 7. Microscopic aspect of Bellini tumor.

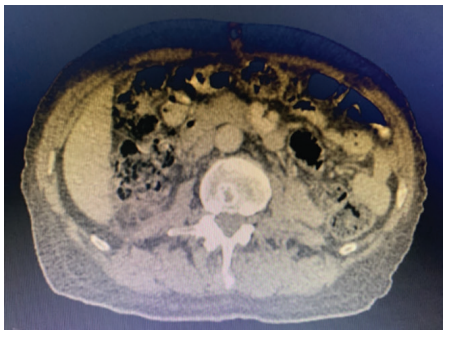


Figure 8. Axial cut after urotheliectomy. No evidence of local relapse at the abdominal level.

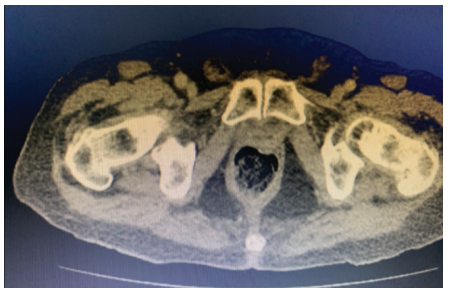


Figure 9. Three months after urotheliectomy, no evidence of disease.

> "Renal carcinoma of the Bellini pathway is a very rare histological variant of renal tumor. It was first described in 1949 and recognized with its own identity in 1986."

The authors of this study reported another case of urotheliectomy in 2014, where it was demonstrated once again that urotheliectomy[5] is a useful resource in this type of patient or in multicentric urothelial tumors.[6]

Conclusions

Urotheliectomy is a recently described therapeutic resource, rarely used, and with few publications. If we assumed that the lesion was a Bellini tumor, we would have managed it the same way, since leaving the patient on dialysis and with repeated infections could lead to bladder empyema or repeated urosepsis.

Conflicts of Interest

The Authors have no competing interests to disclose. ■

1. Gutiérrez-Domingo A, Gutiérrez-Domingo I, Gallardo-Rodríguez K, Rodríguez-Caulo A. Carcinoma of the collecting ducts of Bellini: a rare entity with a poor prognosis. *Rev Mex Urol.* 2017;77(3):244-246.
2. Genov PP, Kolev NH, Dunev VR. A rare case of Bellini duct carcinoma. *Urol Case Rep.* 2019;25:100899.
3. Qian X, Wang Z, Zhang J, et al. Clinical features and prognostic outcome of renal collecting duct carcinoma:12 cases from a single institution. *CancerManag Res.* 2020;12:3589-3595.
4. Gutiérrez-Zurimendi G, García de Casasola-RodríguezG,Urrestizala-PeñaI,Aizcorbe-Gómez M, Maldonado-De Sasia A, Urresola-Olabarrieta A. Renal carcinoma of Bellini's collecting ducts: presentation of two cases and review of the literature. *Rev Mex Urol.* 2022;82(1):1-10.
5. Barreiro D, Fernández VG, Castro Montiel F, Lafos N. Uroteliectomia. *Rev Arg Urol.* 2014;79(1):38-39.
6. Mebust WK, Valk WL, Foret JD, Haskins R. The pathophysiology and therapy of empyema in the isolated bladder. *J Surg Oncol.* 1973;5(2):89-95.

MEDICOLEGAL CONNECTION

Res Ipsa Loquitur... "The Thing That Speaks for Itself"

Glenn W. Dopf, JD, LL.M
DOPF, P.C.

Martin B. Adams, JD
DOPF, P.C.

Courts recognize that a bad result or unsuccessful result of medical care and treatment does not, by itself, prove that the physician committed medical malpractice. "The law will not hold a physician liable for every bad result; some evidence of a violation of an objective standard of care must be shown."[1]

There is an exception to the rule that bars a presumption of malpractice arising merely from an unsatisfactory medical procedure. That exception goes by the Latin name, "Res Ipsa Loquitur." As explained by a California court: "… the maxim res ipsa loquitur translated means simply 'the thing, or affair, speaks for itself,' and, so speaking, authorizes the inference of negligence in the absence of a showing to the contrary."[2]

Res Ipsa Loquitur is a legal principal that is applied in courts around the country. In some states, Res Ipsa Loquitur is enshrined in statutes. In other states, the doctrine has been developed by judges through caselaw.

Plaintiffs' counsel sometimes try to persuade the judge that plaintiffs are entitled to enjoy at trial an inference of negligence. Such a "Res Ipsa Inference" allows attorneys for plaintiffs to argue to juries that the jurors may infer, not must infer, negligence from the fact that the defendant-physicians were negligent because the medical outcome would not have occurred if the physicians had met the standard of care.

Defense counsel may offer expert testimony in response to show that, even with due care on the part of the physician, the patient's injury still could have occurred. A jury is not required to accept plaintiff's proposed Res Ipsa Inference. The jury may reject that inference if the jury finds that the medical facts and medical testimony (such as testimony from the defendant physician, a treating physician, or a medical expert) demonstrate that the unfortunate medical result, alone, does not show negligence.

I. Elements for Proving Res Ipsa Loquitur

Under the doctrine of Res Ipsa Loquitur, "a fact-finder may infer negligence merely from the happening of the event that caused the harm if: (1) the event is of a type that ordinarily would not occur in the absence of negligence; (2) it is caused by an agency or instrumentality under the exclusive control of the party charged with negligence; and (3) it is not due to any voluntary action or contribution on the part of injured party."[3] If plaintiff does not establish all 3 elements, then plaintiff will not be allowed to rely upon a Res Ipsa Inference.

II. The Medical Outcome Would Not Have Occurred Absent Negligence

The fact that a bad outcome resulted from medical care is not sufficient for plaintiff to rely upon Res Ipsa Loquitur. Instead, plaintiff must show that, based upon the nature and factual circumstance surrounding the bad outcome, the injury would not have occurred unless the physician was negligent. The rule of Res Ipsa Loquitur "simply recognizes what we know from our everyday experience: that some accidents by their very nature would ordinarily not happen without negligence…"[4]

III. Foreign Objects Inadvertently Left in a Patient's Body

A classic example of a situation where the Res Ipsa Inference may apply is where a foreign object, such as a scalpel blade or a sponge, is left in the patient's body after the patient is closed at the end of a surgical procedure.

"The very fact that [surgeon] reopened the incisions in his attempts to retrieve the missing [foreign object] once he discovered that [the object] had not been accounted for shows that there was no good purpose for leaving the" foreign object in the patient, explained a judge in a case in which a scalpel blade detached from its handle and lodged in the patient's knee joint because defendant surgeon inadvertently left the blade in the patient's knee when he closed the surgical incisions.[5]

IV. Injuries Remote From an Operative Site

An unexplained injury may arise in an area of the patient's body remote from the area that was being treated by a physician. In that case, a Res Ipsa Inference may be warranted.

A court found that Res Ipsa Loquitur applied in a case in which there was "no problem of negligence in treatment, but of distinct injury to a healthy part of the body not the subject of treatment, nor within the area covered by the operation… [S]uch circumstances raise the inference of negligence and call upon the defendant to explain the unusual result." In that case, the patient had undergone appendectomy for appendicitis. After the operation, the patient felt a sharp pain about halfway between his neck and his right shoulder. The court held that Res Ipsa Loquitur applied.[6] Another classic example would be a burn to a portion of the patient's body distant from the surgery itself.

V. Exclusive Control Over the Agent of Harm

Even if it is unknown precisely how a patient suffered harm, all of the medical providers who were involved in the medical procedure at issue may face a Res Ipsa Inference–unless each provider can show to a reasonable degree of medical certainty that he or she did not have any control of the procedure. A court may conclude that, "[a]lthough it is unknown how th[e] injury occurred, [the surgeon and physicians' assistants] and those in the operating room were in control of any instrumentality that could have caused it, and each owed a common duty to" plaintiff.[7]

> "Res Ipsa Loquitur applies only if the medical event that caused the patient's injury was not caused or contributed to by any negligence on the part of the patient."

VI. The Patient's Own Comparative Negligence

Res Ipsa Loquitur applies only if the medical event that caused the patient's injury was not caused or contributed to by any negligence on the part of the patient. A patient who is unconscious or anesthetized at the time of the medical care at issue will not be considered to be negligent or a contributing cause of his or her injury arising from that care during unconsciousness. In cases involving injuries arising during surgery, the evidence may "show[ ] that [plaintiff] did not play a voluntary role in the damage… because she was unconscious during her" surgery.[8] ■

1. *Thomas v. Lewis*, 289 So.3d 734 (Sup. Miss. 2019).
2. *O'Connor v.* Mennie, 169 Cal. 217, 146 P. 674 (Sup. 1915).
3. *Manhattan by Sail, Inc. v. Tagle*, 873 F.3d 177 (2d Cir. 2017).
4. *Dermatossian v. New York City Transit Authority*, 67 N.Y.2d 219, 492 N.E.2d 1200, 501 N.Y.S.2d 784 (1986).
5. *Ripley v. Lanzer*, 152 Wash.App. 296, 215 P.3d 1020 (2009).
6. *Ybarra v. Spangard*, 25 Cal.2d 486, 154 P.2d 687 (Sup. 1944).
7. *Mattison v. OrthopedicsNY*, LLP, 189 A.D.3d 2025, 137 N.Y.S.3d 814 (3rd Dep't 2020).
8. *Powell v. Methodist Health Care Jackson Hospitals*, 856 So.2d 353 (Ct. App., Miss. 2003).

CASE REPORT

Retained Nephrostomy Thread in a Transplanted Kidney With Atypical Calcification Causing Gross Hydronephrosis and Acute Renal Failure

Kaushik Prabhav Kolanukuduru, MBBS
Jawaharlal Institute of Post Graduate Medical Education and Research (JIPMER), Puducherry, India

Hangcheng Fu, MD
University of Louisville, Kentucky

Murali Krishna Ankem, MBBS
University of Louisville, Kentucky

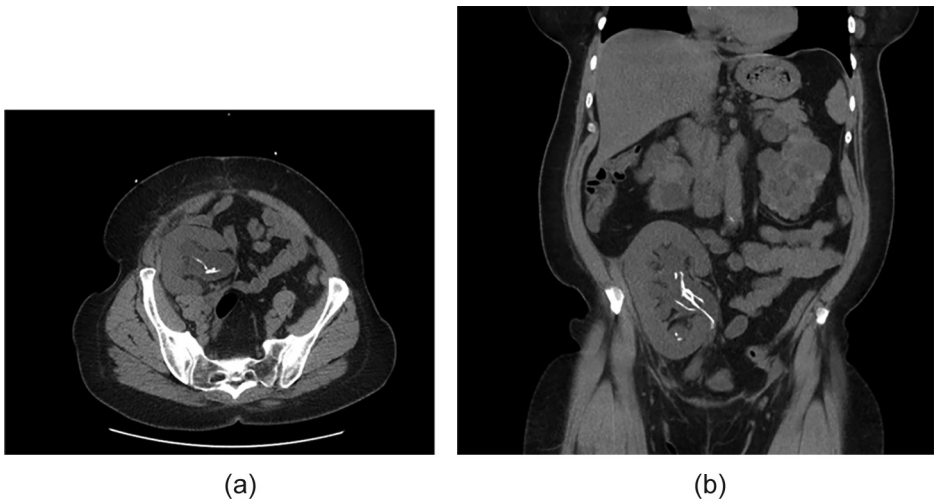
Since its first documented use in 1865, the use of nephrostomy tubes has diversified from emergency decompression of an obstructed collecting system and is now the initial step in interventions such as percutaneous nephrolithotomy (PCNL), renal biopsy, and ureteral stenting dilation. The devices used for the same have also evolved since their inception, from a simple trocar to the currently used locking devices anchored by a thread loop. However, improper retrieval of the nephrostomy tube or avulsion of the thread during removal can result in the retention of a foreign body in the collecting system, which can act as a nidus for calcification and infection. We present the case where a nephrostomy tube was placed in a transplanted kidney, and following incomplete removal of the thread loop, resulted in an atypical calcification on the thread in the renal pelvis and proximal ureter.

Case Details

A 57-year-old female patient presented to the emergency department in November 2021 with right lower quadrant abdominal pain, urinary frequency, painful urination, nausea, and vomiting. She denies flank pain, blood in the urine, or fevers.

She has a history of end-stage renal disease due to polycystic kidney disease, for which she has been on hemodialysis since July 2017. She underwent a deceased donor renal transplant in October 2018. She was admitted in October 2020 for a 5-mm ureteral stone in the transplant kidney, for which a nephrostomy tube insertion with antegrade stent placement was performed following an unsuccessful retrograde pyelogram. Urine cultures at the time grew Proteus and she was appropriately treated for the same. A repeat CT abdomen showed a stone of 2 mm diameter, suggesting that she possibly passed the previous one. Following the resolution of her symptoms and negative cultures, her nephrostomy tube and stent were removed in November 2020 in the office.

A physical examination revealed right lower quadrant abdominal tenderness but no costovertebral angle tenderness, clinically indicating a pathology in the transplanted kidney. Investigations at the time revealed an elevated serum creatinine (2.23 mg/dL), with a large number of red and white blood cells in the urine; 4+ bacteria were also noted in the urinalysis. An abdominal ultrasound showed hydronephrosis, following which an abdominal CT was performed. A calcified string-like structure was noted in the renal pelvis of the transplanted kidney, extending into the ureter (Figure 1, A and B).



(a) (b)

Figure 1. Non-contrast CT showing atypical renal calcification seen in renal pelvis of transplanted kidney due to retained nephrostomy thread. A, Axial view. B, Coronal view.

Subsequently, a nephrostomy tube was placed in the transplant kidney and her creatinine returned to baseline. PCNL with laser lithotripsy was done in December 2021. The access was obtained using a combination of ultrasound and fluoroscopy (Figure 3, A and B). The tract was dilated from 8Fr to 20Fr using a metal dilator, and an 18Fr mini-nephroscope was used in combination with a flexible cystoscope to visualize the renal pelvis. The procedure revealed the calcified structure to be the retained nephrostomy thread from her first nephrostomy tube placed in October 2020 (Figure 2). The nephrostomy tube was subsequently removed and her renal function has since returned to normal.

Figure 2. Renal calculus formation on retained nephrostomy thread.

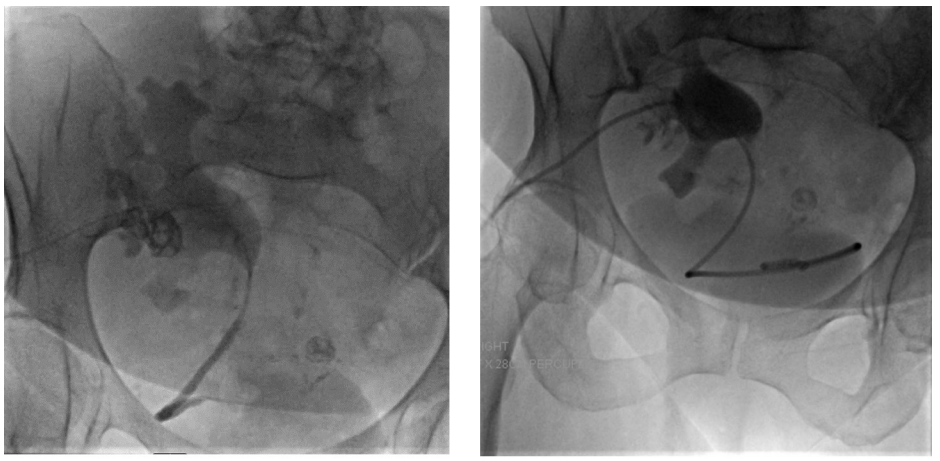
Discussion

Since the first description of percutaneous nephrostomy (PCN) as a treatment modality for hydronephrosis by Goodwin et al,[1] the use of percutaneous nephrostomy tubes has been widely accepted as a safe and effective means of draining an obstructed collecting system. In addition to this, PCNs are often used in PCNLs, removal of upper tract urothelial tumors, therapeutic instillations of chemotherapy and other drugs, treatment of hydrocalyx, and other renal surgeries which require a percutaneous approach. PCNs are also being

→ Continued on page 11

RETAINED NEPHROSTOMY THREAD IN A TRANSPLANTED KIDNEY

→ Continued from page 10



(a) (b)

Figure 3. Intraoperative fluoroscopic images during percutaneous nephrolithotomy while obtaining access to the transplant kidney.

used for diagnostic studies such as the Whittaker test and antegrade pyelography.[2,3]

Ureteral obstruction and leakage are the most common urological complications encountered in kidney transplant recipients. A number of studies have shown that the use of PCN in transplanted kidneys is safe and highly effective with a very low complication rate, and it has successfully been used as a sole therapy to treat obstruction in transplanted kidneys.[4-6]

The design of nephrostomy tubes has evolved over the years and the currently used nephrostomy tubes are self-retaining loop catheters. A synthetic suture runs on the inside of the catheter and leaves the catheter at the proximal end of the loop, only to reenter the lumen at the distal end. While removing the tube, the hub of the tube is cut off, releasing both ends of a locking suture.[7] Rarely, however, the suture does not come out with the catheter and may be held in the kidney by encrusting material or inflammatory tissue. The suture material may also be avulsed during removal. Retained suture material can provide a nidus for calcification or infection, as seen in our case. We were able to retrieve 3 fragments, with the longest fragment measuring 6 cm and 2 fragments measuring 2 cm each. Given the length of these fragments, we suspect that the nephrostomy thread was avulsed during removal. It is essential to check that the suture is retrieved intact during nephrostomy tube removal.

Funding

No funding was obtained to assist in the collection of information contained in this article.

Conflict of Interest

The authors whose names are listed certify that they have no affiliations with or involvement in any organization or entity with any financial interest or nonfinancial interest in the subject matter or materials discussed in this manuscript.

Ethics Statement

All information was collected with consent of the participant involved and health care information shall remain confidential. ■

1. Goodwin WE, Casey WC, Woolf W. Percutaneous trocar (needle) nephrostomy in hydronephrosis. *JAMA*. 1955;157(11):891-894.
2. Dagli M, Ramchandani P. Percutaneous nephrostomy: technical aspects and indications. *Semin Intervent Radiol*. 2011;28(04):424-437.
3. Stables DP, Ginsberg NJ, Johnson ML. Percutaneous nephrostomy: a series and review of the literature. *AJR Am J Roentgenol*. 1978;130(1):75-82.
4. Mostafa SA, Abbaszadeh S, Taheri S, Nourbala MH. Percutaneous nephrostomy for treatment of posttransplant ureteral obstructions. *Urol J*. 2008;5(2):79-83.
5. Saad WE, Moorthy M, Ginat D. Percutaneous nephrostomy: native and transplanted kidneys. *Tech Vasc Interv Radiol*. 2009;12(3):172-192.
6. Dyer RB, Regan JD, Kavanagh PV, Khatod EG, Chen MY, Zagoria RJ. Percutaneous nephrostomy with extensions of the technique: step by step. *Radiographics*. 2002;22(3):503-525.
7. Ahn J, Trost DW, Topham SL, Sos TA. Retained nephrostomy thread providing a nidus for atypical renal calcification. *Br J Radiol*. 1997;70(831):309-310.

FROM THE AUA PUBLIC POLICY COUNCIL

Prior Authorization: Playing the Long Game of Urology Advocacy

Eugene Y. Rhee, MD, MBA
Chair, AUA Public Policy Council

The burden of prior authorization (PA) for urologists and their patients is growing as health care reform continues to take shape. As the health care industry shifts to value-based care, insurers are increasingly instituting PA policies to ensure that expensive interventions and treatments are clinically appropriate and cost-effective.

Urologists report that they are spending inordinate time filling out PA forms, which leads to increased costs, decreased access to care, and lower quality of care. Many patients also find PA to be a stressful and disruptive obstacle to accessing their necessary care. According to the American Medical Association's 2022 physician survey on prior authorization, 56% of survey respondents reported that prior authorization always or often delays patient access to necessary care. In addition, one-third of doctors reported that prior authorization delays led to adverse consequences for their patients.[1] This impact included delays in care, an increase in paperwork, and added workload for urology practice staff. Additionally, 81% reported PA negatively impacting the care of their patients.[1] The lengthy and complex process of obtaining PA adds financial strain to a urology practice and limits access to care for patients.

→ Continued on page 12

This has led to efforts to enact policy changes related to the PA process by both Congress and the current Administration. Last year, the House of Representatives passed H.R. 3173, the Improving

Figure. AUA Public Policy Council chair Eugene Rhee, MD, MBA at prior authorization roundtable in Washington, DC.

PRIOR AUTHORIZATION

→ Continued from page 11

Seniors' Timely Access to Care Act, which would require the U.S. Department of Health & Human Services to establish an electronic PA process, including a real-time process for services that are routinely approved. While this legislation did not make it through the Senate, its unanimous passage in the House has shown that there is movement for finding a solution.

Most recently, as the AUA's Public Policy Council Chair, I advocated for urology at a closed-door meeting at the Department of Health & Human Services in Washington, DC, as part of the Alliance of Specialty Medicine to discuss proposed rules related to PA that the Biden Administration released late last year (see Figure). These proposed changes range from increasing transparency in the approval and denial process to shortening the allowable waiting period for approvals. Other stakeholders in attendance included the American Medical Association, American Hospital Association, and the Medical Group Management Association. Federal officials included U.S. Surgeon General Vivek H. Murthy, MD, CMS (Centers for Medicare and Medicaid Services) Administrator Chiquita Brooks-LaSure, and CMS Office of Burden Reduction & Health Informatics Director Mary Greene, MD.

Advocacy requires playing the long game, actively engaging Congress, the Administration, and the patient advocacy and provider groups, which has led to tremendous strides in finding a solution over the past year.

Moving forward, it's imperative that the AUA and our urologists continue to support efforts related to reforming the PA process and any regulatory burdens that hinder our ability to provide our patients with the care they need. That is why I ask that you attend the Annual Urology Advocacy Summit every year in our nation's capital.

It's clear that concrete legislative reforms are necessary to minimize the burden of PA on patients. As Representative Ami Bera, MD (D-CA-06) puts it, "Administrative burdens for providers should never get in the way of providing the best possible care for patients."[2] ■

1. American Medical Association. 2022 AMA prior authorization (PA) physician survey. 2023. https://www.ama-assn.org/system/files/prior-authorization-survey.pdf.

2. Suzan DelBene. Press Releases. Prior Auth Leaders Welcome Draft CMS Rule as Adding Momentum Passing Legislation. December 7, 2022. https://delbene.house.gov/news/documentsingle.aspx?DocumentID=3268.

CODING TIPS & TRICKS

Coding and Billing for Online Digital Evaluation and Management Services

Jonathan Rubenstein, MD, FACS
AUA Coding and Reimbursement Committee, Chair

There has been a proliferation in the use of HIPAA (Health Insurance Portability and Accountability Act)-compliant online patient portals, which allow practitioners and practices to communicate to patients and vice versa in a secure manner. There are benefits (such as practice and communication efficiencies) along with challenges with such portals. Portal messages can range from seemingly mundane requests such as scheduling visits or refilling prescription, to communicating results and providing medical updates, to seeking medical care. Providers may feel empowered with portals by having the ability to communicate without the need to reach out by phone, while others at times have described feeling overwhelmed with the number of messages received and expressing concerns about somewhat blurred boundaries regarding appropriate patient portal communications. Recent headlines state that some institutions are now charging for patient portal messages. This certainly has led to confusion among both practitioners and patients, with both questioning what those headlines mean and what can or cannot be charged to a patient. Clarification is needed to protect the patient, practice, and practitioner. So what is really going on and what can be coded and billed?

It is important to not take the headlines about charging for portal messages at face value, as one needs to read further into the details to see what is and what is not able to be charged. On a high level, most portal messages are not able to be billed. There are specific rules and limitations on what can be charged, and basically it is only when a practitioner provides true online Evaluation and Management (E/M) service through the online portal. Even E/M services that are provided comes with a number of restrictions and some limitations.

The 3 currently available CPT (Current Procedural Terminology) codes that describe and can be used to report online digital E/M services are:

99421 Online digital evaluation and management service, for an established patient, for up to 7 days, cumulative time during the 7 days; 5-10 minutes

> "Recent headlines state that some institutions are now charging for patient portal messages. This certainly has led to confusion among both practitioners and patients, with both questioning what those headlines mean and what can or cannot be charged to a patient. Clarification is needed to protect the patient, practice, and practitioner."

99422 …11-20 minutes
99423 …21 or more minutes

As per the descriptor, these online digital E/M services can be reported only when a provider performs a true E/M service using the online portal. Limitations include providing these services only to an established patient and when done in place of a face-to-face E/M encounter. The visit must be medically necessary, patient-initiated (such as in response to a new or worsening problem), and it must be for a condition or problems that can actually be managed by message/portal without needing a face-to-face visit. The service must take at least 5 minutes of physician time (note that office staff and clinical staff time does not count). What does not count: communication of test results, refilling medications, changing medications due to cost or formulary, scheduling appointments, and messages that can be handled by clinical staff and do not require clinician expertise, or even patient management that takes less than 5 minutes of a practitioner's time. Time is cumulative and additive for up to 7 days, meaning if multiple online portal messages are used for the E/M visit then 1 code with the summed time only

→ Continued on page 13

CODING AND BILLING FOR ONLINE DIGITAL EVALUATION

→ Continued from page 12

should be reported. It cannot be reported on a day when the provider reports other E/M services on the same patient. Also, if the online communication results in an in-person visit within 7 days then the time or complexity of the portal message work is incorporated to the code selection (time or medical decision-making) of the in-person visit and the online service is not reported. One should not report these services if within a global period a surgical procedure, unless the service is medically necessary and unrelated.

Chart documentation is mandatory to support medical necessity and code selection. Documentation should describe the medical necessity for the visit, a medically appropriate history, a review of any results of testing, and the management plan for the condition including the tests ordered and treatments provided. Documentation should also include the total amount of time spent by the practitioner(s) for the service. As with any billable service, one should strongly consider obtaining and documenting patient consent for such as service. There are some institutions that post their billing policies online, while others put them in their offices. Best practice is documentation that the patient is aware that the service is billable to their insurance company so they are not surprised when they see a bill or a charge, as patients may also be responsible for a deductible and/or co-pay based upon their insurance. Note that for Medicare these services are typically covered albeit patients may be responsible for 20% of the cost if they do not have a secondary insurance. One should also consider offering (and documenting) that the patient was given an option of a face-to-face visit and they chose to proceed with the portal visit.

As with any billable service, there is also a risk of being accused of fraudulent billing and/or breaking a contract with a private insurer. One could certainly put themselves at risk of audits and take-backs for incorrect use of these codes. Therefore, understanding what is and is not reportable and having documentation to back up the submitted codes is of utmost importance. Additionally, there is a medicolegal risk to performing online E/M services. Online E/M services do not afford a provider of either verbal or visual communication that often is so vital to a productive visit. One should strongly consider recommending an in-person visit with nearly any patient interaction, especially if a patient should be seen and/or examined for their concern.

In summary, the proliferation of portal messages has positive and negative implications and its own set of benefits and challenges. There are significant time and communication benefits and practice efficiencies gained from such communication, but can also come at a cost. In urology, there are likely certain patients that may qualify for online E/M services. If charging patients for online E/M services, one has to remember that it needs to serve as a substitution for an in-person E/M visit. Documentation of such can protect both the patient and the practice. One needs to have a true understanding of what is billable and not billable. A practice must consider how they acquire a patient's consent for this service along with offering an in-person evaluation and proving the patient is choosing to receive their care by portal messaging. ■

PATIENT PERSPECTIVES

Self-advocacy for Sexual Health Concerns in Patients With Cystic Fibrosis

Patient Story ID: 1414619

Reuben Samuels (he/him/his)
University of Miami, Florida

Katherine Campbell, BS (she/her/hers)
Desai Sethi Urology Institute, Miller School of Medicine, Miami, Florida

Ranjith Ramasamy, MD (he/him/his)
University of Miami, Florida

Background

Historically, the lifespan of cystic fibrosis (CF) patients was early adulthood, so CF specialist physicians were not well trained in the sexual health aspects of the disease. As a result, patients were not fully educated and were left to advocate for themselves for sexual health concerns. As a patient born with CF, I knew from adolescence that I was likely infertile, but was not aware about the additional sexual/hormonal challenges. Even after seeking information, I received poor information and ignored by my health care team as the problem wasn't deemed "life-threatening."

Approach

Despite 30 years of research on the topic, it is not routine to investigate reproductive hormone abnormalities in CF patients. As a young adult, my complaints of brain fog, weakness, and low energy were dismissed as part of my CF. Only when I became a certified personal trainer and was surrounded by men using illicit performance-enhancing therapies did I understand that muscle wasting, poor recovery, and fatigue might not just be due to respiratory pathology.

As my lung function and health declined, my symptoms (lethargy, comprehension, muscle wasting, and osteoporosis) were pushed to the extreme. I pushed for testing and was found to have low testosterone. After being refused treatment by an endocrinologist, I sought hormone replacement therapy from another provider, and my symptoms rapidly improved. In April 2019 I received a double lung transplant and was instructed by my transplant team to stop hormones. With no taper, I crashed, and 5 weeks post-op, I restarted testosterone against medical advice. My hormone treatment continues to be done outside of my CF care team.

Maintenance

About 3 years post-transplant, my lung function is outstanding. I have reversed bone loss, gained >20 lbs of skeletal muscle, and maintain a high level of physical fitness. Contrary to expert opinion, my success cannot be attributed only to new lungs. I do feel let down that fertility preservation options prior to lung transplant were not financially feasible. However, I am thankful for this renewed life. As I know my experience is not unique, I hope that everything I learn helps another man with CF avoid these difficulties.

Quality of Life

The battle for information around sexual health optimization for men with CF remains difficult. As I continue my health care journey as a patient, peer mentor, and professional educator, I see the conversation around hormonal function to be key. Health care doesn't work unless patients and providers can speak as equals through open dialogue and trust. It will forever be my goal to fill the knowledge gap to move health care from the practice of surviving to one of truly thriving. ■

Hypospadias: Adult Sexual Function and Fertility Concerns After Pediatric Repair

Megan Stout, MD
The Ohio State University Wexner Medical Center, Columbus

Nicholas Beecroft, MD
The Ohio State University Wexner Medical Center, Columbus

Christina Ching, MD
Nationwide Children's Hospital, Columbus, Ohio

Hypospadias is one of the most common congenital anomalies in boys, with an estimated prevalence of 1 in 150-300 live births.[1] It consists of the classic triad of a dorsally hooded foreskin, an ectopic urethral meatus, and ventral penile curvature. Hypospadias can present in a wide clinical spectrum. With mild presentation, consisting of a meatus located on the glans penis and no chordee present, surgical intervention can be potentially avoided with minimal functional impairment. On the severe end, patients can have debilitating sexual and voiding function that is significantly impaired and, if left uncorrected, can suffer from shorter penile length, painful erections, inability to direct urine stream, and poor body image through adulthood. Traditional classification of hypospadias is based on location of the urethral meatus; utilizing this criterion alone, the majority of boys (70%-85%) have a distal variant, while a small subset have a more severe proximal hypospadias. Other important anatomical considerations consist of degree of penile curvature, degree of glans anomaly, and associated penile shaft skin deficiencies. The anatomical findings present can correlate with future complication development.[2]

The goals of penile reconstruction in hypospadias repair are to allow the patient to void upright with normal speed/flow, to obtain satisfactory sexual function with a straight penis, and to create an orthotopic meatus with a well-approximated glans for both cosmetic and reproductive motivations. The phenotypic heterogeneity of the condition makes achieving these goals surgically a challenge. Over the past 50 years, there have been advances in hypospadias repair, vastly improving postoperative appearance and function. Techniques such as meatal advancement with glanuloplasty, glans approximation procedures, and tubularized incised plate urethroplasty have all contributed to high success rates in distal repairs. Proximal repairs have historically had less satisfying outcomes, with a high incidence of complications and need for reoperation in adolescence and adulthood.

It is critical to understand the ramifications of childhood hypospadias repair on adult sexual function and fertility potential. The cumulative number of patients having undergone prior hypospadias repair is substantial, and warrants an understanding even in the adult urology practice setting. In regard to future sexual function of this patient population, recent literature suggests that patients with hypospadias have comparable experiences of sexual debut, interest in sex, libido, and satisfaction with sexual experiences comparable to age-matched controls.[3] From an initial surgical technique perspective, every effort is made to preserve erectile function: neurovascular bundles are avoided and erectile bodies preserved in ventral lengthening and dorsal plication repairs. On the other hand, the prevalence of erectile dysfunction (ED) is difficult to interpret due to the commonly multifactorial nature of ED predisposition. When considering all hypospadias repairs, multiple studies have shown no difference between patients and controls–though these are limited by small study cohorts.[4]

Those with a history of proximal hypospadias repair may have a 2-4 times increased risk of mild to moderate ED compared to distal repairs, and an estimated one-third of patients with a history of multiple failed repairs suffer from ED.[5] However, there is evidence that the majority of patients may respond to oral pharmacological therapy. Husmann found in a retrospective review of 100 patients with multiple failed hypospadias repairs that 62% of patients with moderate to severe ED responded favorably to an oral phosphodiesterase inhibitor.[5] Largely, it seems that patient dissatisfaction as it relates to sexual function appears to stem from the perception of decreased penile length following surgery. Rynja et al reported that patients who underwent proximal repair had significantly shorter mean stretched penile length compared to age-matched controls, while those with distal repairs had no significant difference.[6] Perceived decreased penile length was the most influential factor when dissatisfaction in cosmesis and ED was reported. Adult urologists should be aware of patient concerns for decreased penile length and the impact on psychosexual health for appropriate counseling on expectations.

> "It is critical to understand the ramifications of childhood hypospadias repair on adult sexual function and fertility potential."

Overall, patients and their partners seem to be far more satisfied with penile appearance than surgeons.[4] Surgeons themselves may place a greater emphasis on meatal position than patients do. Andersson et al reported that all patients were "satisfied" or "very satisfied" with meatal position despite only 11% actually having a distal glanular meatus.[3] In another study of women asked to rate penile appearance, meatal position or location on the penile shaft was rated as the least important factor.[7]

Ejaculatory dysfunction can also occur with hypospadias repairs, with an estimated incidence of 12.3% in one study.[3] Post-orgasmic milking of the urethra for ejaculate expression may be required of patients with long, reconstructed neourethras. Anejaculation can be related to the reconstructed neourethra, bladder neck incompetence in the individual, or a persistent prostatic utricle.[8] A prostatic utricle is an embryological remnant of the müllerian duct; it is found more commonly in boys with proximal hypospadias (estimated 11%-14%). Excision of the remnant can be technically difficult and therefore is reserved for those with refractory bothersome lower urinary tract symptoms, recurrent urinary tract infections, and incomplete emptying rather than ejaculatory dysfunction alone.

In regard to fertility, these patients may have underlying testicular dysfunction with abnormalities in hormone production and/or semen parameters. Thorough evaluation of the patient should include a semen analysis, a physical exam (including Tanner staging, meatal location, testicular size/position, presence of curvature), and a detailed history. In general, adult men following hypospadias repair as a child do not have impaired semen parameters compared to the general population. When stratified by variant severity, those with isolated distal hypospadias have better fertility parameters than those with proximal hypospadias or those associated with other genital disorders.[9] Kumar et al found that in men with proximal hypospadias classification, semen analyses had decreased semen volume, sperm concentration, sperm motility, and normal morphology compared to distal variants and controls.[9]

Several studies have suggested that patients with hypospadias had a lower probability of having a biological child, which was demonstrated in a population-based cohort study of 1.2 million Swedish men with both distal and proximal hypospadias.[10] Lower rates of biological children were reported in men with proximal hypospadias compared to those with distal variants or controls. Overall, it is still uncertain whether the decreased paternity rate is a direct result of subfertility and testicular dysgenesis in this population, or related to the concurrent psychosocial factors

→ Continued on page 15

HYPOSPADIAS: ADULT SEXUAL FUNCTION

→ Continued from page 14

or body image perception leading to sexual dysfunction.

In conclusion, it is imperative for urologists to be able to identify and diagnose long-term urological complications related to pediatric hypospadias repair. These individuals can present as adult patients in practice with various issues related to sexual and reproductive function in which appropriate evaluation and counseling are imperative. Objective data, validated questionnaires, and consistent long-term follow-up are essential to adequately diagnose these complications that could lead to interventions in adulthood. ■

1. Nelson CP, Park JM, Wan J, Bloom DA, Dunn RL, Wei JT. The increasing incidence of congenital penile anomalies in the United States. *J Urol.* 2005;174(4 Pt 2):1573-1576.
2. Merriman LS, Arlen AM, Broecker BH, Smith EA, Kirsch AJ, Elmore JM. The GMS hypospadias score: assessment of inter-observer reliability and correlation with post-operative complications. *J Pediatr Urol.* 2013;9(6):707-712.
3. Andersson M, Sjöström S, Wängqvist M, Örtqvist L, Nordenskjöld A, Holmdahl G. Psychosocial and sexual outcomes in adolescents following surgery for proximal hypospadias in childhood. *J Urol.* 2018;200(6):1362-1370.
4. Tack LJW, Springer A, Riedl S, et al. Psychosexual outcome, sexual function, and long-term satisfaction of adolescent and young adult men after childhood hypospadias repair. *J Sex Med.* 2020;17(9):1665-1675.
5. Husmann DA. Erectile dysfunction in patients undergoing multiple attempts at hypospadias repair: etiologies and concerns. *J Pediatr Urol.* 2021;17(2):166.e1-166.e7.
6. Rynja SP, Wouters GA, Van Schaijk M, Kok ET, De Jong TP, De Kort LM. Long-term followup of hypospadias: functional and cosmetic results. *J Urol.* 2009;182(4 Suppl):1736-1743.
7. Ruppen-Greeff NK, Weber DM, Gobet R, Landolt MA. What is a good looking penis? How women rate the penile appearance of men with surgically corrected hypospadias. *J Sex Med.* 2015;12(8):1737-1745.
8. Jiao C, Wu R, Xu X, Yu Q. Long-term outcome of penile appearance and sexual function after hypospadias repairs: situation and relation. *Int Urol Nephrol.* 2011;43(1):47-54.
9. Kumar S, Tomar V, Yadav SS, Priyadarshi S, Vyas N, Agarwal N. Fertility potential in adult hypospadias. *J Clin Diagn Res.* 2016;10(8):PC01-PC5.
10. Örtqvist L, Fossum M, Andersson M, et al. Sexuality and fertility in men with hypospadias; improved outcome. *Andrology.* 2017;5(2):286-293.

UPJ INSIGHT

Patient Demand for Urologists in the United States: A Google Trends Analysis

Michael Wynne, MD candidate
George Washington University School of Medicine and Health Sciences, Washington, District of Columbia

Haig Pakhchanian, MD candidate
George Washington University School of Medicine and Health Sciences, Washington, District of Columbia

Rahul Raiker, MD candidate
West Virginia University School of Medicine, Morgantown

Timothy Batter, MD
George Washington University Hospital, Washington, District of Columbia

Michael Whalen, MD
George Washington University School of Medicine and Health Sciences, Washington, District of ColumbiaGeorge Washington University Hospital, Washington, District of Columbia

Wynne M, Pakhchanian H, Raiker R, Batter T, Whalen M. Patient demand for urologists in the United States: a Google trends analysis. *Urol Pract.* 2023;10(2):155-160.

Study Need and Importance

An expanding, aging population in the United States poses a substantial challenge to the urology workforce. Adults age 65 years and older account for one of the most rapidly growing segments of the population and utilize urological services at a higher rate than the general population. Exacerbating the increasing need for urological services is an aging urology workforce and shortage of urologists. Quantifying and tracking patient demand on a geographic basis will help urologists determine how to best meet health care needs across the nation as we face this unprecedented challenge.

What We Found

Through analysis of Google Trends data, we found that the urologist demand index was highest in Mississippi, Nevada, New Mexico, Texas, and Oklahoma. The states with the lowest calculated demand indices were South Dakota, Minnesota, Wisconsin, Oregon, and New Hampshire.

Limitations

A single search term, "urologist," was used to determine search volumes utilized in the demand index calculation. Urological condition-focused search terms were not included. This study may overestimate demand as Internet searches including "urologist" are not limited to individuals seeking urological care. On the other hand, this study may underestimate demand in populations adversely affected by the digital divide. Finally, while most Americans utilize the Internet, variation in Internet access and usage across states may bias the demand calculations.

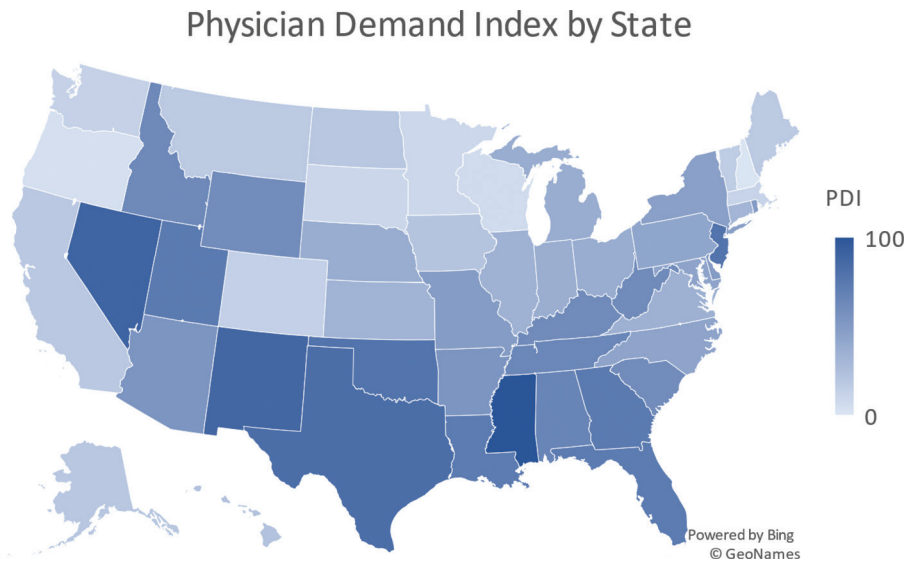


Figure. State-by-state demand for urologists. PDI indicates physician demand index.

Interpretation for Patient Care

The states of highest demand highlighted in this study may represent areas with an unmet need for urological care. Interventions to expand access to care may be best focused in these regions of high demand. Furthermore, these findings may aid urologists in determining where to establish practice and policy makers in determining where to allocate resources in order to provide equitable, accessible, and high-quality urological care throughout the United States (see Figure). ■

JU INSIGHT

Effect of Cannabidiol Oil on Post-ureteroscopy Pain for Urinary Calculi: A Randomized, Double-blind, Placebo-controlled Trial

Gopal Narang, MD
University of North Carolina, Chapel Hill

Jonathan Moore, MD
Dalhousie University, Halifax, Nova Scotia, Canada

Kevin Wymer, MD
Mayo Clinic Phoenix, Arizona

Yu-Hui Chang, PhD, MS
Mayo Clinic Scottsdale, Arizona

Elisabeth Lim, MPH
Mayo Clinic Scottsdale, Arizona

Olufunmilola Adeleye, DO, MBA
Mayo Clinic Alix School of Medicine, Scottsdale, Arizona

Mitchell R. Humphreys, MD
Mayo Clinic Phoenix, Arizona

Karen L. Stern, MD
Mayo Clinic Phoenix, Arizona

Narang G, Moore J, Wymer K, et al. Effect of cannabidiol oil on post-ureteroscopy pain for urinary calculi: a randomized, double-blind, placebo-controlled trial. *J Urol.* 2023;209(4):726-733.

Study Need and Importance

As advanced as the surgical management of stones has become, postoperative ureteral stent discomfort continues to pose a significant challenge to providers. Cannabinoid receptors are found throughout the urinary system, with lab studies showing modulation in bladder smooth muscle contractility when targeted. While activation of the cannabinoid system has shown efficacy in treating some lower urinary tract dysfunction and pain, there has not been any previous work on the effect of cannabinoids on ureteral stent discomfort. This study was a prospective, randomized, double-blind, placebo-controlled trial assessing the effect of a Food and Drug Administration–approved cannabidiol (CBD) oil (Epidiolex, Jazz Pharmaceuticals Inc) on post-ureteroscopy pain.

> "There were no significant differences in maximum pain score on day 3 (primary outcome; see Figure) or any of the secondary outcomes including Ureteral Stent Symptoms Questionnaire, perioperative and rescue narcotic administration, study drug compliance, discharge medication usage, adverse drug reactions, and postoperative complications."

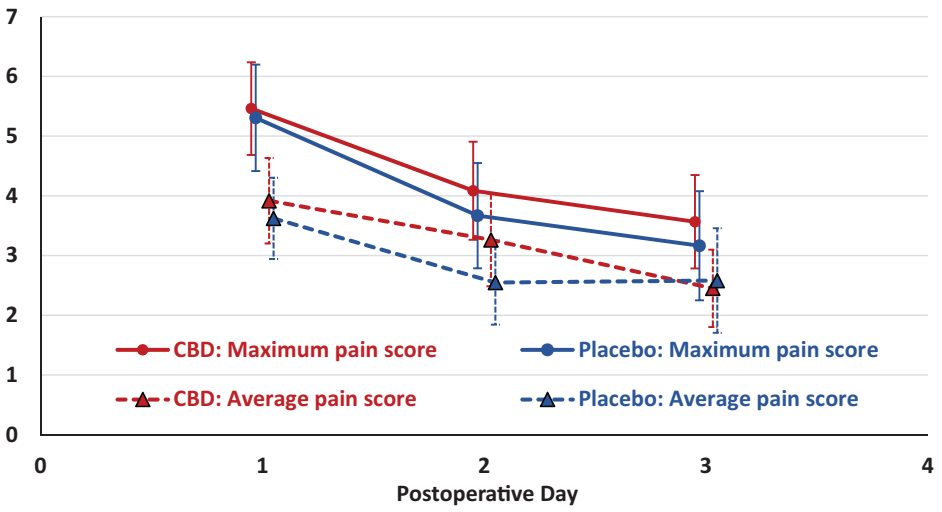


Figure. Postoperative maximum and average pain scores. CBD indicates cannabidiol.

What We Found

Ninety patients in total were included in the final analysis. Overall, adherence to the medication in both groups was excellent with >90% of patients taking their allocated trial medication. There were no significant differences in maximum pain score on day 3 (primary outcome; see Figure) or any of the secondary outcomes including Ureteral Stent Symptoms Questionnaire, perioperative and rescue narcotic administration, study drug compliance, discharge medication usage, adverse drug reactions, and postoperative complications. There were no significant side effects of the CBD oil, and aside from a short period of postoperative dizziness, the medication was well tolerated.

Limitations

Limitations include that we utilized the lowest dose of CBD oil available to establish safety. In addition, our formulation did not contain tetrahydrocannabinol, which is known to have a stronger affinity to endocannabinoid receptors than CBD alone.

Interpretation for Patient Care

Despite this being a negative study in terms of intervention efficacy, it is the first of its kind. Further work evaluating the effect of CBD oil in the post-ureteroscopy setting would benefit from dose escalation and evaluating alternative analogs–such as those with a combination of CBD and tetrahydrocannabinol. ■

Dominoes and Doctors

Neil Baum, MD
Tulane University School of Medicine, New Orleans, Louisiana

I saw an exhibit at a museum that demonstrated how a small vertical tile standing knocked over another larger tile, which knocked over a still larger tile, until a large brick, nearly 500 times as large as the first small tile, could tip over (see Figure). This is a metaphor for how small actions can create large results.

How does this apply to a urology practice? I have built my career not with 3-color, trifold brochures, a website, or a social media presence on Facebook, Twitter, or Instagram. Instead, I focused on making small gestures to enhance the patient experience. My goal was to see that these small, incremental examples on my part and the work of my staff ensured that every patient had a positive experience with me and my practice.

These gestures began when the patient contacted the practice on the telephone to make an appointment. A human answered the phone in less than 3 rings. There was no phone tree to confuse patients; they could speak to a human. Patients were usually seen within 15 minutes of their designated appointment. The patient received a 3×5 card to write down what questions they would like answered during their visit. The patient completed a health questionnaire before coming to the office, reception, or exam room. A scribe met with the patient and conducted a history of present illness, a past medical history, and a review of systems before I entered the exam room. The scribe entered in the electronic medical record any comments I made in addition to what the scribe discovered before I met the patient. This process allowed me to be eyeball-to-eyeball with the patient instead of looking at a computer screen. At the end of each visit, I asked the patient, "Do you have any additional questions you would like answered on your visit today?"

Figure. Example of a small domino knocking down a large domino.

The importance of patient satisfaction impacts the fall of our dominoes.

Patient satisfaction is another metric that has been studied in relation to the quality of care we provide. Patient satisfaction scores have been reviewed regarding complications, 30-day readmissions, adverse events, and medical errors. The patient experience data are collected from patient satisfaction surveys as previously described. Measures of patients' self-reported experience may impact patient outcomes. For example, in one study, patients who reported a high level of participation in their care during hospitalization were found to be less likely to suffer an adverse event.

The expression says, "It takes a lifetime to build a reputation but only seconds to destroy it." That is truer today than ever before. A patient with access, a mouse, and just a few clicks can go to an online review site and create a scathing comment about you and the care you provided.

When you start your clinical practice, you won't have any credibility built up with patients and colleagues. As far as they're concerned, you're nobody from nowhere. You've got to build up your reputation, and that takes time. So, how do you do it?

Newton's First Law of Motion states, "An object in motion tends to stay in motion unless acted on by an outside force." It's very difficult to change your reputation once it has been created in your patient's mind, and that process happens quickly.

I have learned that you start creating a sterling reputation with the first patient you care for.

The reputation you build early in your career will be your reputation until you retire. If you develop a reputation for being rude or indifferent, that's all anyone will see. However, suppose people see you as kind, caring, empathetic, helpful, and hard-working. In that case, you'll find that people will love having you as their doctor.

Usually, it's not the last large brick in the domino chain that solidifies your reputation with your staff and patients–it's being excellent at small, ordinary things, or that small tile in the front of the chain that starts the chain reaction and builds your reputation.

I walked past the patient's restroom and saw tissues on the floor and urine specimen cups on the back of the toilet. I picked up the tissues and took the cups to the lab. One of my medical assistants told me that I was the only physician that would help them clean the patient's restroom. My example motivated the rest of the staff to take ownership of the cleanliness of the patient's restroom. The medical assistant appreciated it and said it made them respect me more.

This emphasized how important it is to set an example, and that if you set an example, you don't have to worry about the rule. I have tried to practice with attention to small details, like the small tile at the beginning of the domino chain, which ultimately will create a stellar experience for patients and move that huge block at the end.

Bottom line: Knocking down a large domino at the end of the chain is no accident. It requires excellence in each patient encounter, each clinic note, each business transaction, and each hiring and firing of staff. Building a sterling reputation happens one day at a time, one moment at a time, one patient at a time. If you consistently pay attention to the little dominoes, the large one will easily fall. ■

Have You Read?

Craig Niederberger, MD, FACS
College of Medicine and College of Engineering, University of Illinois at Chicago

Kozomara M, Birkhäuser V, Anderson CE, et al. Neurogenic lower urinary tract dysfunction in the first year after spinal cord injury: a descriptive study of urodynamic findings. *J Urol.* 2023;209(1):225-232.

Special thanks to Drs Andrew Lai and Omer Acar at the University of Illinois at Chicago.

Patients sustaining spinal cord injuries often enter the urological sphere due to development of neurogenic lower urinary tract dysfunction. Although baseline lower urinary tract assessment is performed when they arrive in our offices, there are no clear recommendations on the time point for the first urodynamic assessment nor the frequency of testing in the first year. These authors recruited nearly 100 patients to perform urodynamic investigation at multiple time points in the first year after spinal cord injuries. They detected at least 1 unfavorable parameter in 90% of patients that increased the risk of upper tract deterioration. More concerning is that three-quarters of these patients manifested at least 1 unfavorable parameter at their 1-month assessment. This challenges the assumption that the

→ Continued on page 18

HAVE YOU READ?

→ Continued from page 17

detrusor remains acontractile early after injury and suggests that earlier assessments by urologists should be made to avoid urological comorbidities of an often life-changing injury.

Prunty M, Rhodes S, Rivero MJ, et al. National adherence to guidelines for antimicrobial prophylaxis for patients undergoing radical cystectomy. *J Urol.* 2023;209(2):329-336.

Special thanks to Drs Andrew Lai and Omer Acar at the University of Illinois at Chicago.

An adherence rate of 28% is rarely acceptable in any medical circumstance. Yet for antibiotic prophylaxis at the time of radical cystectomy with ileal conduit diversions, that's the proportion of adherence to the American Urological Association guidelines. These authors performed regression analysis using a database from 2015-2020 to highlight a potential area of improvement in our specialty. Guidelines-based antibiotic usage was associated with lower odds of infection events, including urinary tract infections, pyelonephritis, and pneumonia. Surprisingly, 28% is double the adherence reported between 2003 and 2013. While this study certainly has its limitations, the rise of pathogens with difficult-to-treat resistance is undeniable and has only amplified the call for responsible antibiotic stewardship.

Aboukhshaba A, Punjani N, Doukakis S, Zaninovic N, Palermo G, Schlegel PN. Testicular sperm characteristics in men with nonobstructive azoospermia and their impact on intracytoplasmic sperm injection outcome. *Fertil Steril.* 2022;117(3):522-527.

Special thanks to Drs Catherine Gu and Martin Kathrins at the Brigham and Women's Hospital.

Microsurgical testicular sperm extraction is a procedure performed for men with azoospermia due to spermatogenic dysfunction, a condition that affects about 1% of men. Since testicular sperm lack progressive motility, determination of which extracted sperm are viable and appropriate for intracytoplasmic sperm injection (ICSI) remains a major clinical challenge.

The sperm characteristics of 198 men treated at a single high-volume institution who successfully underwent microsurgical testicular sperm extraction were retrospectively reviewed, including their subsequent fertilization and clinical pregnancy rates. Sperm characteristics were examined for motility and morphology. On uni- and multivariable analyses, use of motile sperm yielded significant advantages regarding fertilization rate (48%) and clinical pregnancy rate (44%) compared to nonmotile sperm, with rates of 20% and 19%, respectively. The only morphological sperm characteristic that resulted in a difference in fertilization and clinical pregnancy rates was the presence of a normal acrosome, with fertilization and pregnancy rates of 49% vs 35% and 44% vs 27%, respectively.

Sperm were variably exposed to pentoxyifylline to induce motility. Given the observation of in vitro fertilization cell culture toxicity with pentoxyifylline exposure, it is difficult to ascertain the exact effect it may have had on subsequent fertilization and clinical pregnancy rates. Would the results of ICSI with nonmotile sperm have been even better than published if the sperm were simply injected, and not exposed to this chemical?

These findings support the use of nonmotile testicular sperm when necessary. They provide insight into the effects of various sperm characteristics on fertilization and pregnancy rates, areas where research is still incomplete. It should be noted that the authors' institution is known for using almost exclusively fresh sperm for ICSI. Though this may affect the results' generalizability for those institutions that utilize frozen-thawed testicular sperm for ICSI, these findings may still ultimately expand beyond the borders of men with azoospermia due to spermatogenic dysfunction to help identify the best sperm for all couples undergoing ICSI. ■

WHAT I LEARNED FROM DR DENSTEDT

John Denstedt, a True Gentleman

Alejandro R. Rodriguez, MD
Wake Forest University School of Medicine, Winston-Salem, North Carolina

In 2013, the 65th Annual Meeting of the Northeastern Section of the AUA was held in Saratoga Springs, New York. It was my first year in upstate New York and my first meeting in this section since I had transferred from the Southeastern Section. For those who have never transferred sections, I can tell you that it is tough to start all over again and meet new colleagues. During that same meeting, I was one of the last ones to climb onto a bus that was taking us to a social night event. The bus was full; however, all of the sudden, a friendly colleague moved toward the

→ Continued on page 19

Figure 1. AUA New Orleans 2022: Dr John Denstedt (Secretary General AUA) and Dr Alejandro R. Rodríguez (Secretary General CAU).

Figure 2. CAU Buenos Aires 2019: Dr John Denstedt and Dr Alejandro R. Rodríguez.

JOHN DENSTEDT, A TRUE GENTLEMAN

→ Continued from page 18

window seat and offered me the only seat left in that bus. Then, he said, "Nice to meet you. I am John Denstedt." I had read his publications but had never met him in person. There he was, "the legend." That bus ride to the event was a real great one. We got to know each other for the first time. Who would have guessed that many years later, he would become the Secretary General of the AUA and I would become the Secretary General of the Confederación Americana de Urología (CAU).

In 2019, I had the great honor of becoming the Editor of AUA*News* in Spanish. Since then, we have worked together and made this educational online tool the most read by CAU members on a monthly basis. During the 2 hard years of the pandemic, his leadership and friendship strengthened even more academic collaborations between the AUA and the CAU. The CAU held 2 successful virtual congressional seminars (CAU Guayaquil 2020 and CAU Peru 2021), a result of his support and AUA's academic collaboration. During those 2 years, he attended every webinar or virtual congress of the national societies affiliated with CAU. Once he was connected, we could chat or see him "Live" and talk to him. Finally, one great quality that Dr Denstedt has is when he is invited to an in-person meeting, he is there from beginning to end. I have to say that this is highly respected in the CAU region. He is an available and approachable leader. In October of 2020, I had the privilege of giving Professor John Denstedt the "Honorary Membership Award" of the CAU–a recognition he very well deserved because of his endless contributions to continue medical education in urology in Latin America.

Figure 3. Sociedad Peruana de Urología Congress—Cuzco, Peru 2018: Dr John Denstedt, Dr Jose Karam, Dr Hendrick Van Poppel, Dr Simon Tanguay, and Dr Alejandro R. Rodríguez.

Finally, I would say that to be a true gentleman in the 21st century is a joyful thing to aspire to. After all, a gentleman embodies all the very best qualities a man can strive to possess: courtesy, respect, kindness, a firm handshake, and a great many other traits. As philosopher Confucius once said, "A gentleman would be ashamed should his deeds not match his words." This quote emphasizes the ultimate importance of actions over words. Professor John Denstedt is a true gentleman. Thank you, John, for all your actions! ■

JU INSIGHT

Safety and Tolerability of OnabotulinumtoxinA in Children With Neurogenic Detrusor Overactivity

Israel Franco, MD
Yale New Haven Children's Hospital, Connecticut

Piet B. Hoebeke, MD
Ghent University Hospital, Belgium

Eric Dobremez, MD, PhD
Hôpital Pellegrin Enfants, Bordeaux, France

Wilson Titanji, PhD
AbbVie Inc, Irvine, California

Till Geib, PhD
AbbVie Inc, Irvine, California

Brenda Jenkins, BS
AbbVie Inc, Irvine, California

Irina Yushmanova, MD
AbbVie Inc, Irvine, California

Paul F. Austin, MD
Texas Children's Hospital, Houston

Franco I, Hoebeke PB, Dobremez E, et al. Long-term safety and tolerability of repeated treatments with onabotulinumtoxinA in children with neurogenic detrusor overactivity. *J Urol.* 2023;209(4):774-784.

Study Need and Importance

Studies on intradetrusor botulinum toxin A injections in pediatric patients with neurogenic detrusor overactivity (NDO) have been limited in size and duration. This long-term extension study was conducted to establish the safety of onabotulinumtoxinA (50 U, 100 U, or 200 U; not to exceed 6 U/kg) following repeat treatment on an as-needed basis for up to 60 weeks in eligible patients (aged 5-17 years) with NDO from a previous 48-week, single-treatment, phase 3 study (potential overall follow-up of ~2 years). This study complements the initial single-treatment study and supports the Food and Drug Administration approval of onabotulinumtoxinA for the treatment of children aged ≥5 with NDO.

What We Found

The safety profile was similar across doses and after repeat treatments. The most common treatment-emergent adverse event during cycles 1, 2, and 3 was urinary tract infection (UTI; 31%, 34%, 22%). Annualized UTI rates for each treatment group following onabotulinumtoxinA treatment in successive cycles were similar to the rates during the 24 weeks before study entry. The lack of a dose-response effect, and similar annualized UTI rates prescreening and posttreatment, suggests that onabotulinumtoxinA did not contribute to UTIs. There were no cases of autonomic dysreflexia, neutralizing antibodies, and treatment-emergent adverse events related to distant spread of toxin.

Limitations

The study lacked a placebo control group due to ethical concerns in children, and it was only possible to use descriptive statistics for the efficacy analysis, which precluded the reporting of any statistically significant improvements.

Interpretation for Patient Care

Taken together with the efficacy findings from the initial dose-finding study, these long-term safety results suggest that repeat treatments with onabotulinumtoxinA 200 U (not to exceed 6 U/kg), the approved dose in the United States, are well tolerated and effective, and fulfill the unmet need in pediatric patients with NDO who had not been adequately managed with anticholinergics. ■

JU INSIGHT

Evolution of Bosniak IIF Renal Cysts and Impact of the 2019 Bosniak Classification

Félix Couture, MD
Centre Hospitalier de l'Université de Montréal, Quebec, Canada
Centre Hospitalier Universitaire de Sherbrooke, Quebec, Canada

Sarah Hadj-Mimoune, MD
Centre Hospitalier Universitaire de Sherbrooke, Quebec, Canada

Stéphane Michael, MD
Centre Hospitalier de l'Université Laval, Quebec, Canada

Teodora Boblea Podasca, MD
Centre Hospitalier Universitaire de Sherbrooke, Quebec, Canada

Maxime Noël-Lamy, MD
Centre Hospitalier Universitaire de Sherbrooke, Quebec, Canada

Patrick O. Richard, MD
Centre Hospitalier Universitaire de Sherbrooke, Quebec, Canada

Couture F, Hadj-Mimoune S, Michael S, Podasca TB, Noël-Lamy M, Richard PO. Evolution of Bosniak IIF renal cysts and impact of the 2019 Bosniak classification. *J Urol.* 2023;209(4): 694-700.

Study Need and Importance

Bosniak IIF (BIIF) renal cysts currently require cumbersome radiological follow-up, given a risk of upgrading to more complex cysts traditionally reported at around 10%-15%. Recent studies have suggested that the risk of upgrading may be lower than previously thought. Also, the impact of the revised 2019 Bosniak classification on the diagnosis and follow-up of such lesions has yet to be assessed in a real-world population.

What We Found

Through a cohort of 181 BIIF renal cysts with a median follow-up of approximately 4 years, we identified only 4 radiological progressions (2%), of which only 1 was found to be a malignant cyst (see Table). No malignant or suspicious progression occurred beyond 36 months of follow-up. When applying the 2019 Bosniak classification to our cohort, we reduced the amount of initial BIIF diagnoses by 76%, without any detrimental impact on the diagnosis and follow-up of suspicious lesions.

> "Many renal cysts (76%) classified as BIIF using the previous Bosniak classification could be classified as Bosniak II using the 2019 classification and be spared from imaging follow-up, avoiding important costs, radiation, and patient anxiety."

Table. Radiological and Clinical Outcomes of Bosniak IIF Cysts

Radiological evolution	
Cyst size	
Increased, No. (%)	73 (45)
Size increase, median (IQR), mm	4 (2-9)
Decreased, No. (%)	63 (38)
Size decrease, median (IQR), mm	3 (1-7)
Stable, No. (%)	28 (17)
Cyst classification, No. (%)	
Stable BIIF	140 (85)
Downgrade to BI	2 (1.1)
Downgrade to BII	16 (10)
Upgrade to BIII	2 (1.1)
Upgrade to BIV	2 (1.1)
Spontaneous involution	1 (0.55)
Clinical outcomes	
Symptomatic cyst, No. (%)	
Pain	1 (0.55)
Hematuria	1 (0.55)
Surgical excision, No. (%)	
Partial nephrectomy	3 (1.7)
Radical nephrectomy	2 (1.1)
Benign pathology	4 (2.2)
Malignant pathology	1 (papillary type 1 RCC, F2, pT1a)

Abbreviations: B, Bosniak; IQR, interquartile range; RCC, renal cell carcinoma.

Limitations

Limitations include the lack of assessment of interobserver agreement between radiologists, as well as the varying imaging quality throughout the 18-year study period. A total of 55 patients were excluded because of insufficient follow-up. Given the retrospective nature of our study, there was no standardized follow-up protocol in our cohort.

Interpretation for Patient Care

Many renal cysts (76%) classified as BIIF using the previous Bosniak classification could be classified as Bosniak II using the 2019 classification and be spared from imaging follow-up, avoiding important costs, radiation, and patient anxiety. No BIIF cyst had a significant progression beyond 36 months, which may help physicians decide how long to pursue follow-up. The very low rate of upgrading in BIIF cysts (2%) should also guide the counseling of patients diagnosed with such lesions. ■

JU INSIGHT

Impact of Prostate Urethral Lift Device on Prostate Magnetic Resonance Image Quality

Tarik Benidir, MD
Glickman Urological Kidney Institute, Cleveland Clinic, Ohio

Ethan Austhof, MD
Glickman Urological Kidney Institute, Cleveland Clinic, Ohio

Ryan D. Ward, MD
Imaging Institute, Cleveland Clinic, Ohio

Justin Ream, MS
Imaging Institute, Cleveland Clinic, Ohio

Jenifer Bullen, MD
Quantitative Health Sciences, Cleveland Clinic, Ohio

Baris Turkbey, MD
National Cancer Institute, National Institutes of Health, Bethesda, Maryland

Peter A. Pinto, MD
National Cancer Institute, National Institutes of Health, Bethesda, Maryland

Francesco Giganti, MD, PhD
University College London Hospital NHS Foundation Trust, United Kingdom
University College London, United Kingdom

Eric A. Klein, MD
Glickman Urological Kidney Institute, Cleveland Clinic, Ohio

Andrei S. Purysko, MD
Glickman Urological Kidney Institute, Cleveland Clinic, Ohio
Imaging Institute, Cleveland Clinic, Ohio

Benidir T, Austhof E, Ward RD, et al. Impact of prostate urethral lift device on prostate magnetic resonance image quality. *J Urol.* 2023;209(4) 752-761.

Study Need and Importance

Prostatic urethral lift (UroLift) is a minimally invasive treatment option for men with lower urinary tract symptoms secondary to benign prostatic hypertrophy. This device causes artifacts on prostate MRI. As prostate MRI is increasingly utilized in the workup of men with suspected or confirmed prostate cancer, understanding the impact of UroLift in terms of MRI readability and interpretation remains highly important. Our aim was thus to evaluate the impact of UroLift on prostate MRI quality.

What We Found

On qualitative assessment, 19% of graded areas had at least moderate UroLift artifact and poor image quality in 9% of graded areas. The transitional zone was more affected than the peripheral zone (15% vs 3%), the base and mid regions were more affected than the apex (13%, 9%, and 5%, respectively), and diffusion-weighted images were more affected than T2-weighted images (27% vs 0.3%; all *P* values $< .001$). Overall, readers scored poor diagnostic quality (Prostate Image Quality <3) for 20.3% of exams. On quantitative assessment, a higher proportion of the gland was obscured by UroLift artifact on the apparent diffusion coefficient maps (mean 32%) and dynamic contrast-enhanced images (mean 9%) than T2-weighted images (mean 6%; $P < .001$)

> "The UroLift device causes significant artifacts on prostate MRI, which can result in poor image quality and limit the diagnostic capabilities."

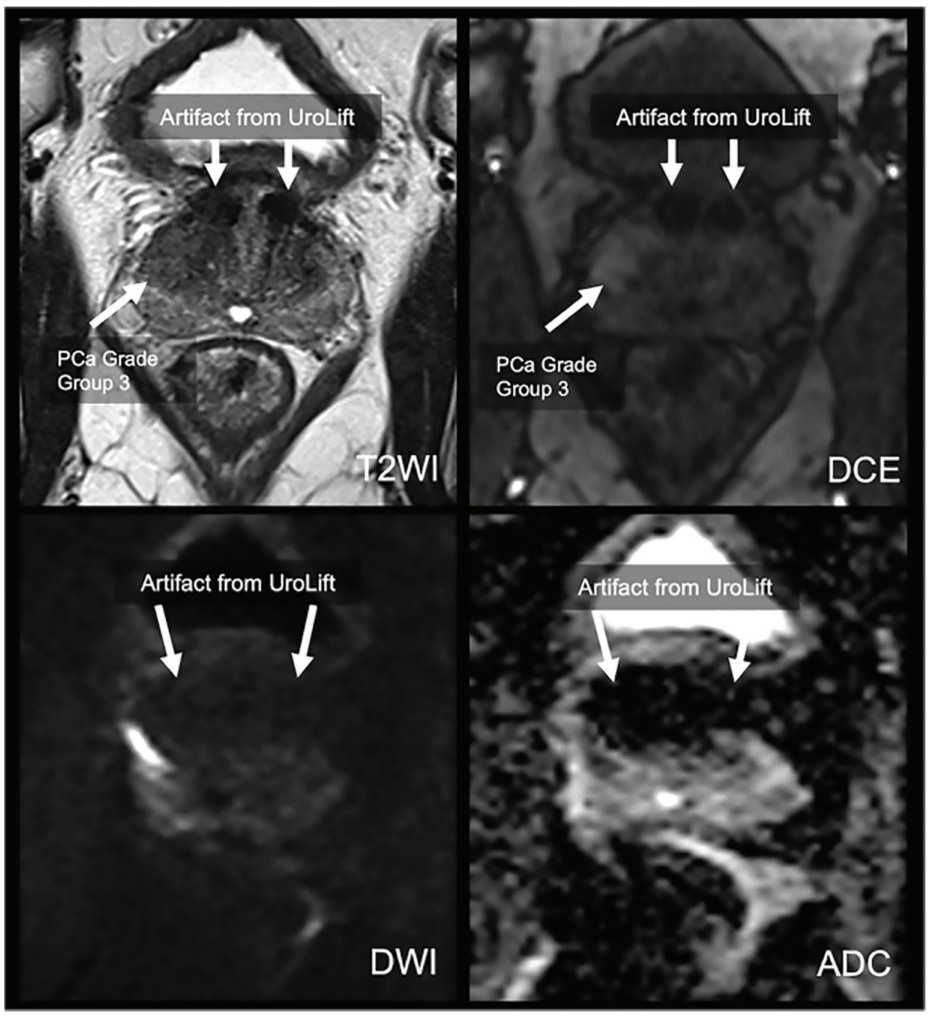


Figure. Example of the impact of UroLift device on magnetic resonance image quality. On T2-weighted images (T2WI) and dynamic contrast-enhanced (DCE) images, the artifact is seen as small areas of signal void in the transition zone. On diffusion-weighted images (DWI) and apparent diffusion coefficient (ADC) map, the susceptibility artifact results in a larger area of signal void with distortion of the image, obscuring a focal lesion in the right anterior peripheral/transition zone seen on T2WI and DCE. MRI-guided biopsy of the lesion revealed prostate cancer grade group 3. PCa indicates prostate cancer.

Limitations

This study was limited by its single-center retrospective nature. Furthermore, we did not evaluate the correlation between the severity of the artifact and the MRI accuracy for prostate cancer diagnosis or staging. Our sample size was modest.

Interpretation for Patient Care

The UroLift device causes significant artifacts on prostate MRI, which can result in poor image quality and limit the diagnostic capabilities. Patients should be counseled about this correlation and its potential implications for subsequent prostate cancer workup using MRI. ■

JU INSIGHT

Urological Chronic Pelvic Pain Syndrome Symptom Flares, Illness Impact, and Health Care Seeking

Siobhan Sutcliffe, PhD, ScM, MHS
Washington University School of Medicine, St Louis, Missouri

Craig Newcomb, MS
Center for Clinical Epidemiology and Biostatistics, Perelman School of Medicine, University of Pennsylvania, Philadelphia

Catherine S. Bradley, MD, MSCE
Carver College of Medicine, University of Iowa, Iowa City

J. Quentin Clemens, MD
University of Michigan, Ann Arbor

Bradley Erickson, MD, MS
Carver College of Medicine, University of Iowa, Iowa City

Priyanka Gupta, MD
University of Michigan, Ann Arbor

H. Henry Lai, MD
Washington University School of Medicine, St Louis, Missouri

Bruce Naliboff, PhD
Geffen School of Medicine, University of California Los Angeles

Eric Strachan, PhD, MA
University of Washington School of Medicine, Seattle

Alisa Stephens-Shields, PhD, AM
Center for Clinical Epidemiology and Biostatistics, Perelman School of Medicine, University of Pennsylvania, Philadelphia

Sutcliffe S, Newcomb C, Bradley CS et al, for the MAPP Research Network. Associations between urological chronic pelvic pain syndrome symptom flares, illness impact, and health care seeking activity: findings from the Multidisciplinary Approach to the Study of Chronic Pelvic Pain Symptom Patterns study. *J Urol.* 2023; 209(4):719-725.

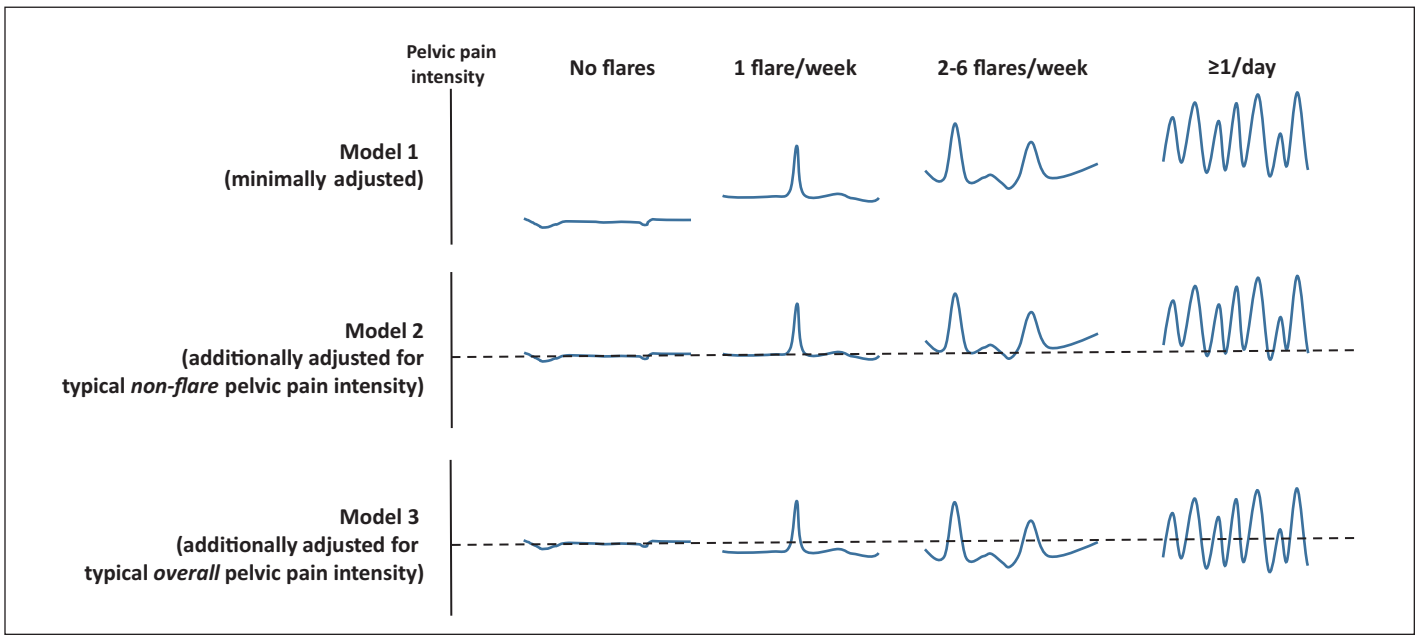


Figure. Illustration of confounding by and adjustment for typical pelvic pain intensity.

Study Need and Importance

Urological chronic pelvic pain syndrome (UCPPS) symptom exacerbations or "flares" are often painful and debilitating, yet little is known about how to prevent and/or treat them. One possible reason for this dearth of information is the paucity of studies that have included flares as their outcome. Instead, most studies use patient-reported "typical" or "average" levels of pelvic pain as their outcome. These could potentially be sufficient to study flares if typical pain levels tend to capture pain intensity during flares or if the impact of flares is explained by the co-occurrence of worse nonflare pain levels and greater flare frequency (ie, confounding by typical pain levels; see Figure, model 1). However, no studies, to our knowledge, have investigated the effect of flares on illness impact independent of typical pain levels (see Figure, models 2-3) to inform the value of including flares as an additional outcome in UCPPS research.

> "Our findings suggest that patients may derive benefit from preventive and therapeutic strategies that reduce flare frequency even if they do not reduce "typical" pelvic pain levels."

What We Found

In the Multidisciplinary Approach to the Study of Chronic Pelvic Pain Network Symptom Patterns Study (N=613), we found that participants who experienced ≥2 flares/wk had significantly worse condition-specific illness impact and greater health care seeking activity than those without flares, even after comparing participants with similar typical nonflare and overall pelvic pain levels. We also found that participants who experienced ≥1 flare/d had significantly worse general illness impact or disability.

Limitations

Our analysis was limited to flare frequency, but additional flare characteristics, such as duration, pain intensity, and predictability, may be worth considering in future studies.

Interpretation for Patient Care

Our findings suggest that patients may derive benefit from preventive and therapeutic strategies that reduce flare frequency even if they do not reduce "typical" pelvic pain levels. Therefore, we recommend including flare frequency as an additional outcome measure in UCPPS research to support the development of new flare strategies. ■

JU INSIGHT

Characterization of Patients With Metastatic Renal Cell Carcinoma Experiencing Complete Response

Kosuke Takemura, MD, PhD, MPH
Tom Baker Cancer Centre, University of Calgary, Alberta, Canada

Vishal Navani, MD
Tom Baker Cancer Centre, University of Calgary, Alberta, Canada

Matthew S. Ernst, MD
Tom Baker Cancer Centre, University of Calgary, Alberta, Canada

J. Connor Wells, MD
BC Cancer Agency, Vancouver, British Columbia, Canada

Luis Meza, MD
City of Hope Comprehensive Cancer Center, Duarte, California

Sumanta K. Pal, MD
City of Hope Comprehensive Cancer Center, Duarte, California

Jae-Lyun Lee, MD, PhD
Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea

Haoran Li, MD, PhD
Huntsman Cancer Institute, University of Utah, Salt Lake City

Neeraj Agarwal, MD
Huntsman Cancer Institute, University of Utah, Salt Lake City

Ajjai S. Alva, MD
University of Michigan Rogel Cancer Center, Ann Arbor

Aaron R. Hansen, BSc, MBBS, FRACP
Princess Margaret Cancer Centre, University of Toronto, Ontario, Canada

Naveen S. Basappa, MD
Cross Cancer Institute, University of Alberta, Edmonton, Canada

Bernadett Szabados, MD
Barts Cancer Institute, Queen Mary University of London, United Kingdom

Thomas Powles, MBBS, MRCP, MD
Barts Cancer Institute, Queen Mary University of London, United Kingdom

Ben Tran, MBBS, FRACP
Peter MacCallum Cancer Centre, Melbourne, Australia

Christopher M. Hocking, MBBS, FRACP
Lyell McEwin Hospital, Adelaide, Australia

Benoit Beuselinck, MD, PhD
Leuven Cancer Institute, KU Leuven, Belgium

Takeshi Yuasa, MD, PhD
Cancer Institute Hospital, Japanese Foundation for Cancer Research, Tokyo, Japan

Toni K. Choueiri, MD
Dana-Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts

Daniel Y. C. Heng, MD, MPH, FRCPC
Tom Baker Cancer Centre, University of Calgary, Alberta, Canada

Takemura K, Navani V, Ernst MS, et al. Characterization of patients with metastatic renal cell carcinoma experiencing complete response to first-line therapies: results from the International Metastatic Renal Cell Carcinoma Database Consortium. *J Urol.* 2023;209(4):701-709.

Study Need and Importance

Traditionally, complete response (CR) was an uncommon event in patients with metastatic renal cell carcinoma (mRCC) treated with tyrosine kinase inhibitor (TKI). Several clinical trials demonstrated that contemporary immuno-oncology (IO)–based combination therapy had a higher CR rate than TKI monotherapy. However, there has been limited real-world evidence on the baseline characteristics and outcomes of patients who experience CR to first-line therapies.

> "Several clinical trials demonstrated that contemporary immuno-oncology (IO)–based combination therapy had a higher CR rate than TKI monotherapy. However, there has been limited real-world evidence on the baseline characteristics and outcomes of patients who experience CR to first-line therapies."

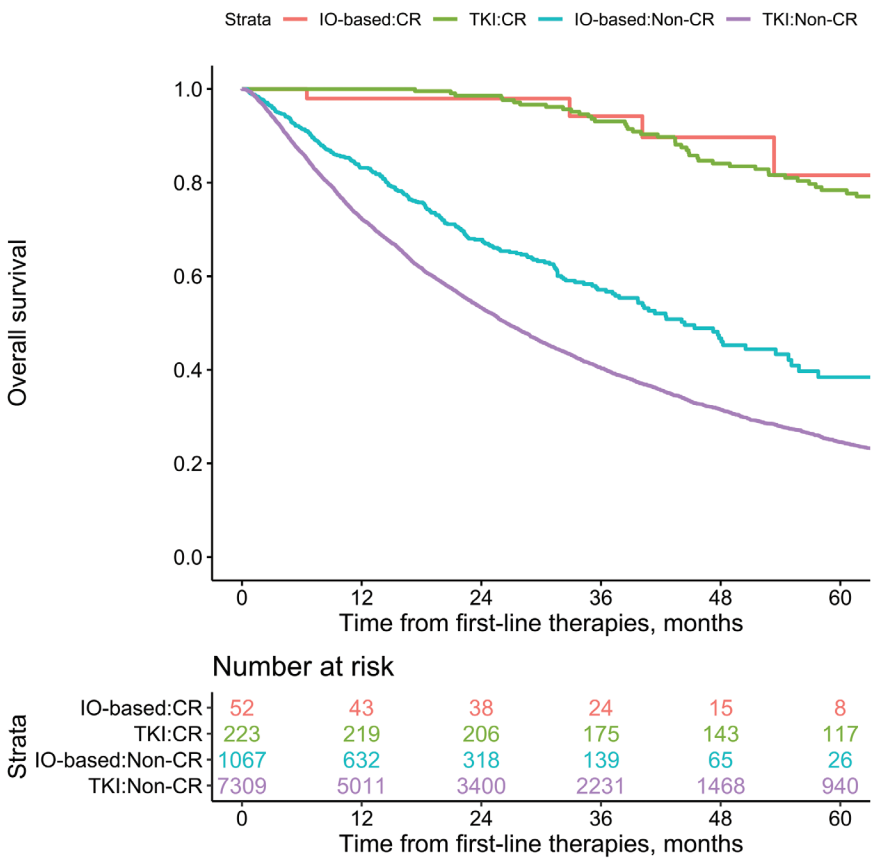


Figure. Kaplan-Meier curves for overall survival by the type of first-line therapies received and best overall response. CR indicates complete response; IO, immuno-oncology; TKI, tyrosine kinase inhibitor.

What We Found

In this study, we used the IMDC (International mRCC Database Consortium) and identified 52 (4.6%) of 1,126 and 223 (3.0%) of 7,557 patients who experienced CR to IO-based and TKI therapies, respectively. Favorable- or intermediate-IMDC risk and absence of bone metastasis were associated with CR regardless of first-line therapies. Among patients who experienced CR, adverse clinicopathological features such as non–clear cell histology, sarcomatoid dedifferentiation, and multiple sites of metastases were more frequently observed in the IO-based cohort than in the TKI cohort. Median overall survival time for the IO-based cohort with CR and non-CR was not reached and 44.4 months, respectively, whereas median overall survival time for the TKI cohort with CR and non-CR was 125.5 months and 26.5 months, respectively (see Figure). CR was an independent favorable prognostic factor after adjustment for other covariates.

Limitations

Although the sample size is among the largest reported to date, this study is limited by its retrospective design, clinician assessment of best overall response rather than blinded independent central review, and a selected patient population from high-income countries.

Interpretation for Patient Care

This study characterized patients with mRCC who did or did not experience CR to first-line therapies. These results suggest that CR rates may not be as high in the real-world population as in the clinical trial population and that contemporary IO-based combination therapy may have a potential to overcome aggressive phenotypes of mRCC. ■

JU INSIGHT

Urinary Analysis of *FGFR3* and *TERT* Gene Mutations Enhances Performance of Cxbladder Tests and Improves Patient Risk Stratification

Yair Lotan, MD
University of Texas Southwestern, Dallas

Jay D. Raman, MD
Penn State Health Milton S. Hershey Medical Center, Hershey, Pennsylvania

Badrinath Konety, MD
Allina Health Cancer Institute, Minneapolis, Minnesota

Siamak Daneshmand, MD
USC/Norris Comprehensive Cancer Center, University of Southern California, Los Angeles

Florian Schroeck, MD
White River Junction Veteran Affairs Medical Center, Vermont

Shahrokh F. Shariat, MD
Comprehensive Cancer Center, Medical University of Vienna, Austria
Weill Cornell Medical College, New York, New York
University of Texas Southwestern, Dallas
Charles University, Prague, Czech Republic
Hourani Center for Applied Scientific Research, Al-Ahliyya Amman University, Jordan

Peter Black, MD
University of British Columbia, Vancouver, Canada

Michel de Lange, PhD
Pacific Edge Ltd, Dunedin, New Zealand

Scott Asroff, MD
New Jersey Urology, Mount Laurel Township

Evan Goldfischer, MD
Premier Medical Group, Poughkeepsie, New York

Mitchell Efros, MD
Accumed Research Associates, Garden City, New York

Kian Tai Chong, MD
Surgi-TEN Specialists, Farrer Park Hospital, Singapore
PanAsia Surgery, Mount Elizabeth Novena Specialist Centre, Singapore

Eugene Huang, MD
KK Women's and Children's Hospital, Singapore

Hong Liang Chua, MD
KK Women's and Children's Hospital, Singapore

Qing Hui Wu, MD
National University Hospital, Singapore

Siying Yeow, MD
Khoo Teck Puat Hospital, Singapore

Weida Lau, MD
Khoo Teck Puat Hospital, Singapore

Jin Yong, MD
Singapore General Hospital, Singapore

Molly Eng, MD
Khoo Teck Puat Hospital, Singapore

Lotan Y, Raman JD, Konety B, et al. Urinary analysis of *FGFR3* and *TERT* gene mutations enhances performance of Cxbladder tests and improves patient risk stratification. *J Urol.* 2023;209(4):762-772.

Study Need and Importance

Most bladder cancer patients have hematuria but few hematuria patients have cancer, resulting in many evaluations with normal cystoscopy. Noninvasive tests with high negative predictive value could spare patients unnecessary discomfort and cost of cystoscopy. We hypothesized that adding DNA single nucleotide polymorphisms to the mRNA genomic markers of current Cxbladder urinary tests Triage and Detect resulting in an enhanced Cxbladder-Triage ($CxbT^+$) and enhanced Cxbladder-Detect ($CxbD^+$) would improve their accuracy and ability to risk stratify hematuria patients for bladder cancer risk.

> "Noninvasive tests with high negative predictive value could spare patients unnecessary discomfort and cost of cystoscopy."

What We Found

In 804 patients, $CxbT^+$ had significantly improved specificity (78% vs 63%; $P < .001$) and $CxbD^+$ had significantly improved sensitivity (97% vs 74%; $P < .001$) and specificity (90% vs 82%; $P < .001$) compared

Table. Comparison of Diagnostic Performance Characteristics of Enhanced Cxbladder-Triage and Enhanced Cxbladder-Detect Compared With the First-generation Cxbladder-Triage and Cxbladder-Detect Tests

Parameter	U.S. cohort (n=344)		Singaporean cohort (n=460)		Pooled cohort (n=804)	
Cxbladder-Triage	CxbT	$CxbT^+$	CxbT	$CxbT^+$	CxbT	$CxbT^+$
Sensitivity, % (95% CI)	93 (77-99)	97 (82-100)	84 (67-95)	94 (79-99)	89 (78-95)	95 (86-99)
$CxbT^+$ vs CxbT incremental difference, %	+4		+10		+6	
Specificity, % (95% CI)	38 (33-44)	58 (53-64)	81 (77-84)	93 (90-95)	63 (59-66)	78 (75-81)
$CxbT^+$ vs CxbT incremental difference, %	+20		+12		+15	
Rule-out rate, % (95% CI)	35 (30-41)	54 (48-59)	76 (72-80)	87 (83-90)	59 (55-62)	73 (69-76)
$CxbT^+$ vs CxbT incremental difference, %	+19		+11		+14	
Cxbladder-Detect	CxbD	$CxbD^+$	CxbD	$CxbD^+$	CxbD	$CxbD^+$
Sensitivity, % (95% CI)	69 (49-85)	97 (82-100)	78 (60-91)	97 (84-100)	74 (61-84)	97 (89-100)
$CxbD^+$ vs CxbD incremental difference, %	+28		+19		+23	
Specificity, % (95% CI)	74 (69-79)	85 (81-89)	88 (85-91)	94 (91-96)	82 (79-85)	90 (88-92)
$CxbD^+$ vs CxbD incremental difference, %	+11		+6		+8	
Rule-out rate, % (95% CI)	70 (65-75)	78 (73-82)	84 (80-87)	87 (84-90)	78 (75-81)	83 (81-86)
$CxbD^+$ vs CxbD incremental difference, %	+8		+3		+5	

Abbreviations: CI, confidence interval; CxbD, first-generation Cxbladder-Detect; $CxbD^+$, enhanced Cxbladder-Detect; CxbT, first-generation Cxbladder-Triage; $CxbT^+$, enhanced Cxbladder-Triage.

→ Continued on page 25

URINARY ANALYSIS OF *FGFR3* AND *TERT* GENE MUTATIONS

→ Continued from page 24

with the respective first-generation tests (see Table). The negative predictive value for CxbD+ was 99.7% and the only 2 false-negative tests were in patients with low-grade Ta tumors (see Table). Eighty-three percent of patients were CxbD+-negative and could therefore have been spared cystoscopy. The incidence of bladder cancer was 44% in CxbD+-positive patients in the pooled cohort, compared with 7.7% of patients who were at intermediate or high risk based on the American Urological Association hematuria guidelines.

Limitations

Pooled data sets from different countries were used, with differences in patient demographics and clinical characteristics, as well as differences in test performance. The results may have been affected by referral and selection bias, and some of the study samples had also been used during the development of the enhanced Cxbladder tests. External validation is needed and ongoing.

Interpretation for Patient Care

The enhanced Cxbladder tests were analytically validated in an ethnically diverse population of hematuria patients. Use of these tests may improve risk stratification and allow more patients without cancer to avoid cystoscopy. ■

JU INSIGHT

Use of Monitoring Tests Among Patients With Localized Prostate Cancer Managed With Observation

Michael S. Leapman, MD
Yale School of Medicine, New Haven, Connecticut
Yale Cancer Outcomes, Public Policy, and Effectiveness Research Center, New Haven, Connecticut
Yale School of Public Health, New Haven, Connecticut

Rong Wang, PhD
Yale Cancer Outcomes, Public Policy, and Effectiveness Research Center, New Haven, Connecticut
Yale School of Public Health, New Haven, Connecticut

Stacy Loeb, MD
New York University Langone Health, New York
Manhattan Veterans Affairs Medical Center, New York

Tyler M. Seibert, PhD, MD
University of California San Diego, La Jolla

Franklin D. Gaylis, MD
Genesis Healthcare, San Diego, California

Ben Lowentritt, MD
Chesapeake Urology, Baltimore, Maryland

Gordon A. Brown, DO
New Jersey Urology, Bloomfield

Ronald Chen, MD, MPH
University of Kansas Medical Center, Kansas City

Daniel Lin, MD
University of Washington, Seattle
Fred Hutchinson Cancer Research Center, Cancer Prevention Program, Public Health Sciences, Seattle, Washington

John Witte, MS, PhD
Stanford University, Palo Alto, California

Matthew R. Cooperberg, MD, MPH
University of California San Francisco

William J. Catalona, MD
Northwestern University Feinberg School of Medicine, Chicago, Illinois

Cary P. Gross, MD
Yale Cancer Outcomes, Public Policy, and Effectiveness Research Center, New Haven, Connecticut
Yale School of Medicine, New Haven, Connecticut

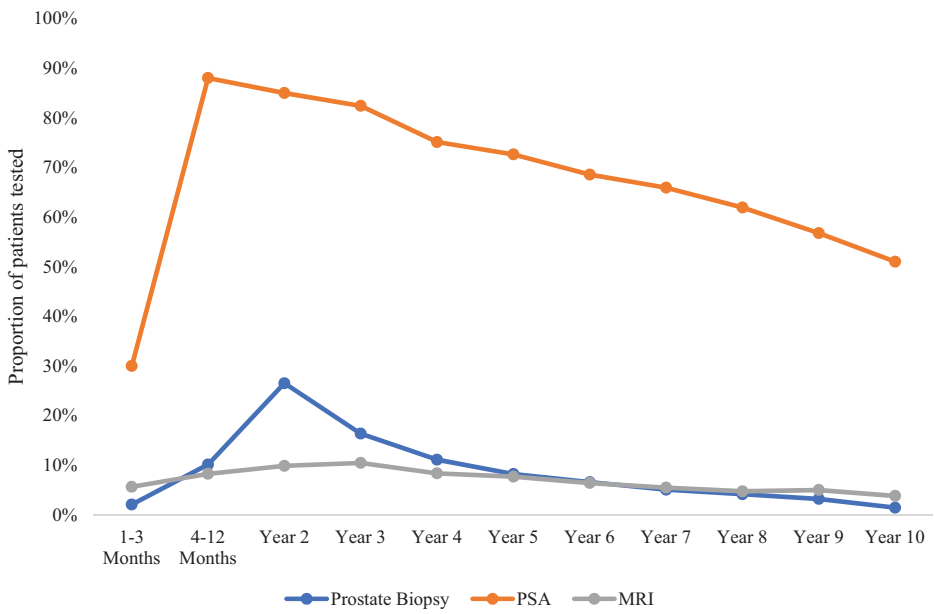


Figure. Proportion of patients receiving repeat prostate biopsy, PSA tests, and prostate MRI during observation for low- and intermediate-risk prostate cancer.

Xiaomei Ma, PhD
Yale Cancer Outcomes, Public Policy, and Effectiveness Research Center, New Haven, Connecticut
Yale School of Public Health, New Haven, Connecticut

Leapman MS, Wang R, Loeb S, et al. Use of monitoring tests among patients with localized prostate cancer managed with observation. *J Urol.* 2023;209(4):710-718.

Study Need and Importance

Active surveillance is the recommended initial strategy for patients with low-risk prostate cancer and is increasingly selected by patients with intermediate-risk disease. Despite increased uptake in the United States, little is known about compliance with recommended monitoring tests used to identify disease reclassification during active surveillance including PSA testing, prostate biopsy, and prostate MRI.

What We Found

We performed a retrospective cohort study of low- and intermediate-risk Medicare beneficiaries in the Surveillance, Epidemiology, and End Results (SEER) database. Among 10,639 patients diagnosed with prostate cancer between 2004 and 2016 and followed with observation for at least 12 months, most (98%) had at least 1 PSA test, 48% underwent a repeat prostate biopsy, and 31% underwent a prostate MRI. Rates of PSA and biopsy increased over time (per calendar year: RR 1.02, 95% CI: 1.02-1.03 and RR 1.10, 95% CI: 1.08-1.11, respectively; see Figure).

Limitations

In this administrative claims–based analysis, we were unable to assess whether observation for prostate cancer was undertaken in the context of active surveillance or intended watchful waiting.

Interpretation for Patient Care

In this national study of Medicare beneficiaries with prostate cancer, we found that use of recommended monitoring tests including repeat prostate biopsy increased over time but remain low. These findings can help refine strategies to improve the safety, tolerability, and outcome of patients with prostate cancer managed with active surveillance. ■

JU INSIGHT

Peroneal Electrical Transcutaneous Neuromodulation vs Solifenacin in Overactive Bladder

Jan Krhut, MD, PhD
University Hospital, Ostrava, Czech Republic
Faculty of Medicine, Ostrava University, Czech Republic

Michal Rejchrt, MD
2nd Faculty of Medicine of Charles University and Motol University Hospital, Prague, Czech Republic

Martin Slovak, MSc, PhD
StimVia, Ostrava, Czech Republic

Roman V. Dvorak, MD, PhD
StimVia, Ostrava, Czech Republic

Lukas Peter, MSc, PhD
StimVia, Ostrava, Czech Republic
Faculty of Science, University of Hradec Králové, Czech Republic

Bertil F. M. Blok, MD, PhD
Erasmus Medical Center, Rotterdam, The Netherlands

Peter Zvara, MD, PhD
University of Southern Denmark, Odense
Odense University Hospital, Denmark

"Peroneal eTNM is safe and, if the efficacy trends suggested by these results are confirmed in a larger study, it may be considered as an alternative to pharmacotherapy, which is often discontinued due to significant side effects."

Krhut J, Rejchrt M, Slovak M, et al. Prospective, randomized, multicenter trial of peroneal electrical transcutaneous neuromodulation vs solifenacin in treatment-naïve patients with overactive bladder. *J Urol.* 2023;209(4): 734-741.

Study Need and Importance

Overactive bladder is a prevalent chronic condition that has severe impacts on patients' quality of life for which a universally effective treatment is not yet available. Neuromodulation has shown significant therapeutic promise. It is currently applied through sacral nerve or tibial nerve neurostimulation. Peroneal electrical transcutaneous neuromodulation (eTNM) using the URIS neuromodulation system represents a new method based on selective stimulation of the peroneal nerve (see Figure). It is noninvasive, it does not cause pain, and is suitable for self-treatment at home. In previous studies, we presented initial data demonstrating its efficacy and safety. This study reports outcomes of a multicenter, prospective, randomized, active-controlled study comparing peroneal eTNM to solifenacin, a widely used pharmacological treatment of overactive bladder.

What We Found

Peroneal eTNM is well tolerated and has a significantly lower incidence of treatment-related adverse events (TRAEs), with 4 times as many TRAEs observed in the solifenacin group. Although this study was not primarily designed to compare efficacy, peroneal eTNM was shown to be similarly effective to solifenacin in the majority of assessed efficacy endpoints, showing a clinically meaningful response in number of severe urgency and urgency incontinence episodes in 87% of subjects.

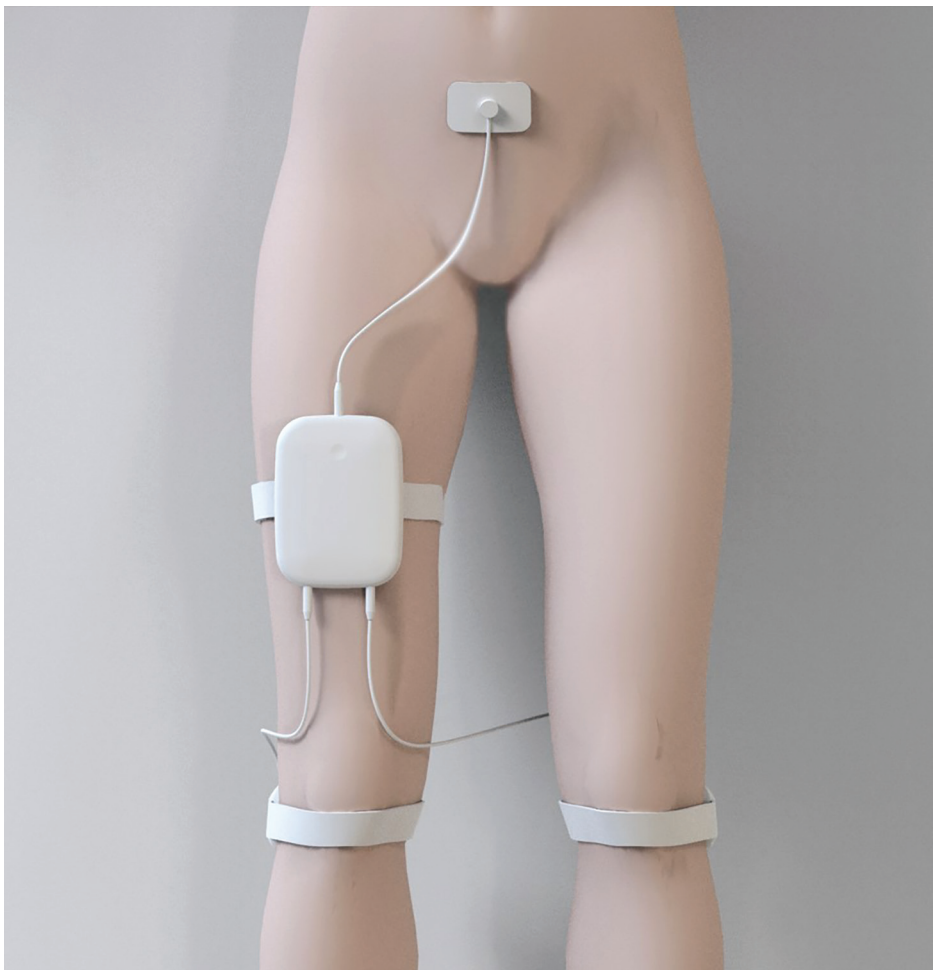


Figure. The URIS neuromodulation system for peroneal electrical transcutaneous neuromodulation is attached to the mid-thigh and connected to the ground and active electrodes. The biofeedback closed-loop system attached to both feet is not displayed.

Limitations

The study evaluates a cohort of 77 patients with heterogeneous baseline characteristics. Although it provides convincing safety data, it does not allow for definitive conclusions with regard to the comparison of efficacy between the 2 treatment methods.

Interpretation for Patient Care

Peroneal eTNM is safe and, if the efficacy trends suggested by these results are confirmed in a larger study, it may be considered as an alternative to pharmacotherapy, which is often discontinued due to significant side effects. When compared to other neuromodulation techniques, this modality has the potential for better accessibility because it can be self-administered at home without severe TRAEs. ■

JU INSIGHT

Artificial Urinary Sphincter Cuff Downsizing Improves Continence Cases of Sub-cuff Atrophy

Kevin Krughoff, MD
Oregon Urology Institute, Springfield

Brent D. Nosé, MD
Duke University Medical Center, Durham, North Carolina

Andrew C. Peterson, MD
Duke University Medical Center, Durham, North Carolina

Krughoff K, Nosé B, Peterson AC. Artificial urinary sphincter cuff downsizing improves continence and patient satisfaction in cases of sub-cuff atrophy. *J Urol.* 2023;209(4):742-751.

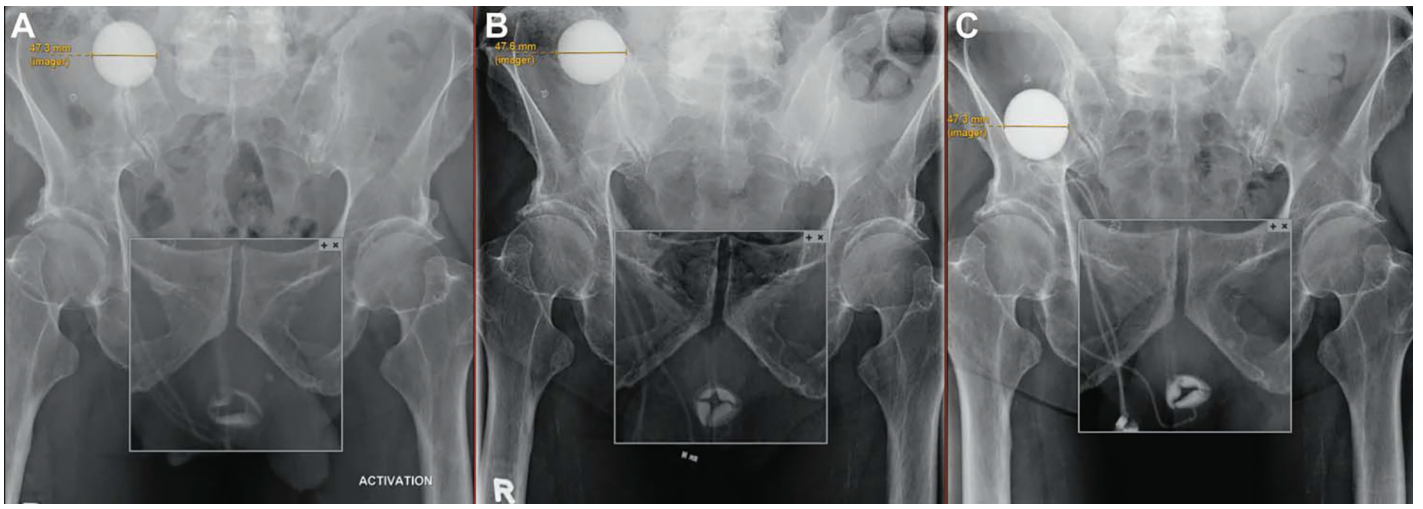


Figure. Baseline after artificial urinary sphincter activation (A), increased cuff fullness 14 months later (B), and baseline activation after cuff downsizing (C).

Study Need and Importance

The artificial urinary sphincter (AUS) is the reference standard for high-volume stress urinary incontinence (SUI). The need for surgical revision is often required. Sub-cuff atrophy is a commonly attributed indication; however, the workup, management, and theory remain controversial owing to loose definitions and under-reported outcomes.

What We Found

We report continence and satisfaction outcomes when AUS cuff downsizing is performed, using an objective set of criteria for sub-cuff atrophy. We fill the AUS with isotonic contrast solution and obtain baseline radiographs at the activation appointment. In the event of recurrent SUI, sub-cuff atrophy is defined by the appearance of an incompletely coapting cuff on cystoscopy and an increase in cuff fullness on x-ray (see Figure). From 2011-2021, complete data were available for 31 men with post-prostatectomy incontinence and recurrent SUI attributed to sub-cuff atrophy alone. Downsizing took place after a median of 6.1 years. Fifteen (44%) patients had a history of pelvic radiation, and 3.5-cm cuffs were used in 8 (23.5%) cases. Nearly all reported improved continence, with one-quarter completely out of pads. Decreases in American Urological Association Symptom Score bother scores and pad counts were statistically significant. After a median of 3.4 years, 24 (70.6%) of downsized AUSs remained in situ, 2 (5.9%) were further downsized, 2 (5.9%) required replacement for mechanical failure, 4 (11.8%) were removed for erosion, and 2 (5.9%) were replaced for pressure regulating balloon herniation.

> "Sub-cuff atrophy is a commonly attributed indication; however, the workup, management, and theory remain controversial owing to loose definitions and under-reported outcomes."

Limitations

Lack of a continence-focused questionnaire is a weakness of our data, and retrospective cohorts are subject to bias toward more compliant and/or motivated patients who elect to undergo AUS downsizing. The follow-up interval after downsizing was shorter than the typical interval to replacement among native devices.

> "AUS cuff downsizing restores continence and improves patient satisfaction when cystoscopy and radiography are used to diagnose sub-cuff atrophy."

Interpretation for Patient Care

AUS cuff downsizing restores continence and improves patient satisfaction when cystoscopy and radiography are used to diagnose sub-cuff atrophy. ■

JU INSIGHT

Pathological/Clinical Outcomes in a Large Intervention Cohort of Radiographically Cystic Renal Masses

Randall A. Lee, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Robert G. Uzzo, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Jordan Anaokar, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Ashanth Thomas, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Shuanzeng Wei, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Benjamin T. Ristau, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Andrew McIntosh, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Matthew Lee, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

David Y. T. Chen, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Richard E. Greenberg, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Rosalia Viterbo, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Marc C. Smaldone, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Andres Correa, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Jared Schober, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Kevin Ginsburg, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Laura Bukavina, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Diana Magee, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Nicole Uzzo
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Phyllis Parkansky, BS
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Karen Ruth, MS
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Alexander Kutikov, MD
Fox Chase Cancer Center, Philadelphia, Pennsylvania

Lee RA, Uzzo RG, Anaokar J, et al. Pathological and Clinical Outcomes in a Large Surveillance and Intervention Cohort of Radiographically Cystic Renal Masses. *J Urol.* 2023;209(4): 686-693.

Study Need and Importance

Radiographically cystic renal masses are heterogeneous and may harbor cystic renal cell carcinoma (cRCC). The current literature highlights that pathologically verified cRCC exhibits indolent biology. Yet these data are limited by the fact that cRCC outcomes are largely indexed based on pathological, not radiographic, findings. Thus, distinguishing preoperatively between indolent cRCC and more biologically aggressive tumors remains a clinical challenge. To this end, we set out to examine our large institutional experience with renal masses classified on presentation as radiologically "cystic."

What We Found

We identified 387 radiographically confirmed cystic lesions that underwent immediate intervention vs active surveillance (AS) ± delayed intervention. On pathological review, 23% demonstrated high-grade (HG) pathology, with cystic features explicitly reported in only 18% of pathology reports. Linear growth rate did not correlate with presence of HG pathology. Despite nearly1 in 4 patients harboring HG pathology at resection, AS in our cohort was extremely safe. Cancer-specific survival was indistinguishable between intervention and AS at 5 years (99% vs 100%, $P = .2$; see Figure).

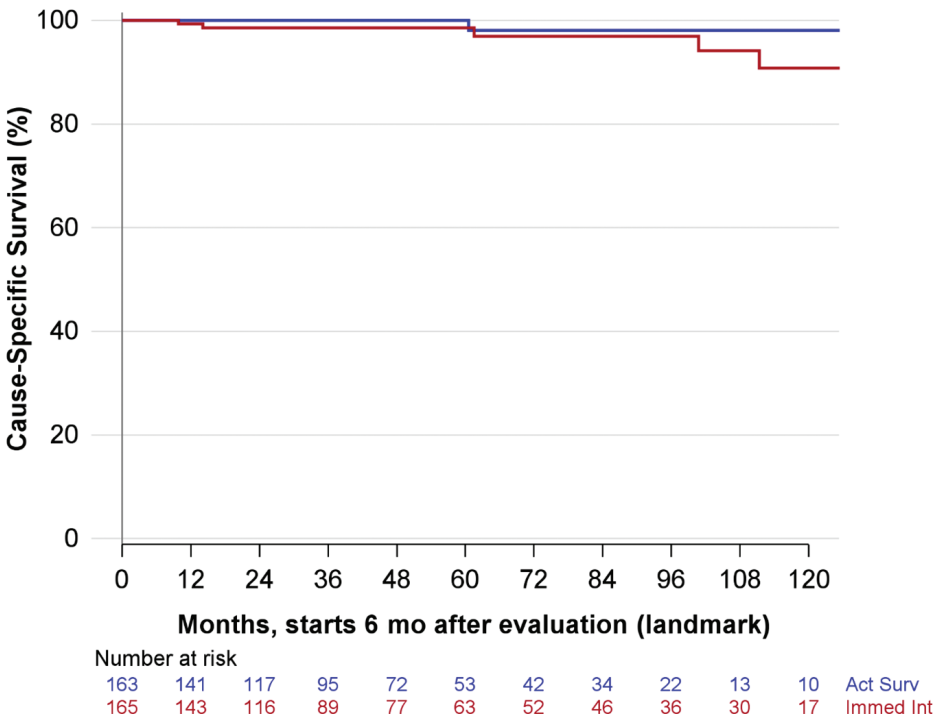


Figure. Kaplan-Meier curves for cause-specific survival in active surveillance (Act Surv, blue) vs immediate intervention (Immed Int, red) initial treatment groups as a landmark analysis starting 6 months after initial evaluation (log-rank test, $P = .2$).

> "Limitations of our study include its retrospective design, and likely strong selection bias given our institution's commitment to AS. Over the 20-year period, rates of AS varied as support for AS continued to emerge."

Limitations

Limitations of our study include its retrospective design, and likely strong selection bias given our institution's commitment to AS. Over the 20-year period, rates of AS varied as support for AS continued to emerge. Additionally, linear growth rates were calculated based on total lesion diameter rather than intralesional solid component, which may dictate aggressive biology in these masses.

Interpretation for Patient Care

Pathologically confirmed cRCC carries low oncologic risks; yet, radiographic and pathological characterization of cRCC markedly differs. Although 23% of radiographically cystic lesions that were resected in our cohort harbored HG pathology, our data continue to support the use of AS for patients with cRCC. To minimize overtreatment of cRCC, further study is needed to identify predictors of aggressive pathology in patients with radiographic cRCC. ■

UPJ INSIGHT

Advanced Urology Boot Camp: A Simulation-based Curriculum to Enhance Student Procedural Competency

Megan Stout, MD
The Ohio State University Medical Center, Columbus

Jennifer Ballinger, MD
The Ohio State University Medical Center, Columbus

Tasha Posid, MA, PhD
The Ohio State University Medical Center, Columbus

Cheryl Lee, MD
The Ohio State University Medical Center, Columbus

John Cooper, MD
The Ohio State University Medical Center, Columbus

Justin Rose, BA
The Ohio State University Medical Center, Columbus

Fara Bellows, MD
The Ohio State University Medical Center, Columbus

Stout M, Ballinger J, Posid T, et al. Advanced urology boot camp: a simulation-based curriculum to enhance fourth-year medical student procedural competency. *Urol Pract.* 2023;10(2):195-201.

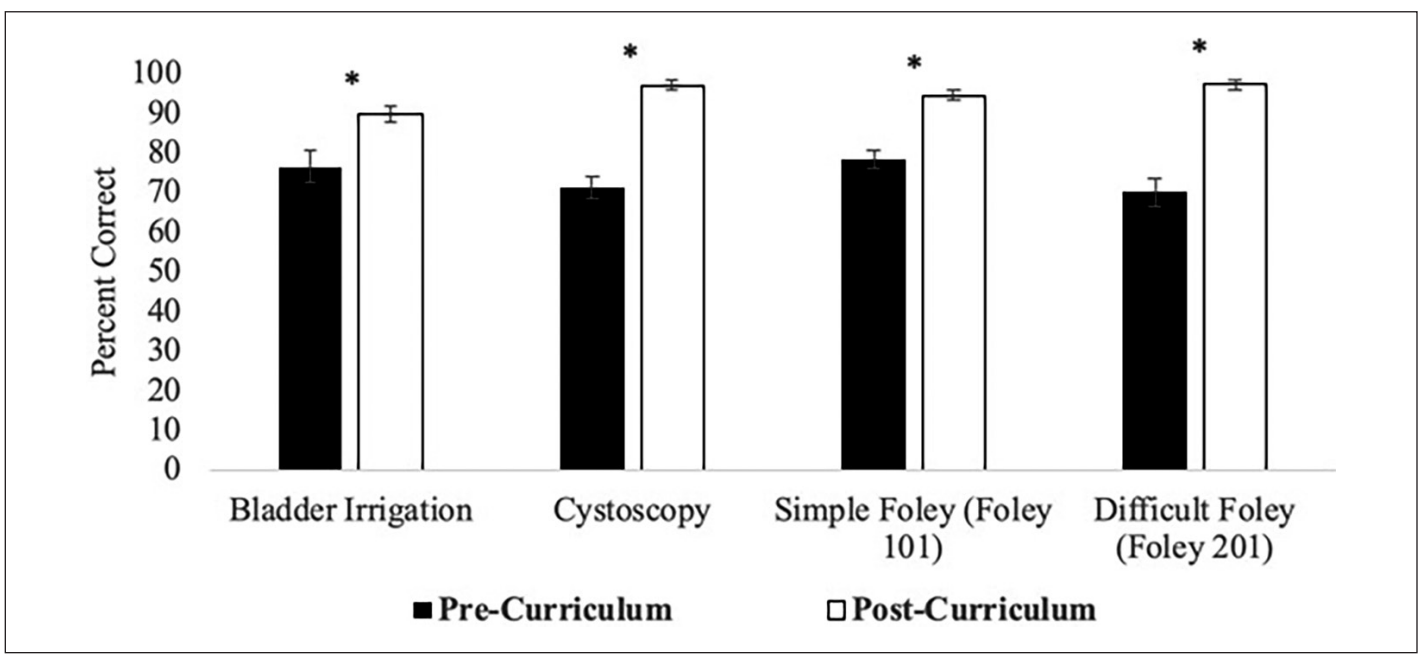


Figure. Medical students demonstrated significant gains in knowledge (*) from pre-test to post-test, which was consistent across each simulation procedure.

Study Need and Importance

Simulation-based medical education continues to gain popularity as the clinical environment requires exemplary patient safety while simultaneously maximizing the learner's educational experience. There is a current lack of urology-focused medical student education curricula in the literature. Here, we present the findings of a didactic and simulation-based medical student advanced "urology boot camp" curriculum, which was designed for learners interested in pursuing careers in urology.

What We Found

Medical students demonstrated significant gains in knowledge from pre-test to post-test, which was consistent across each simulation procedure (see Figure). Participants self-reported significant improvement in confidence with the procedures from before to after the educational intervention. Students also found the curriculum to be beneficial to their understanding of the subject matter, would recommend this curriculum to other medical students, and thought it better prepared them to meet expected ACGME (Accreditation Council for Graduate Medical Education) milestones.

Limitations

Our study is not without limitations. Our main limitation was sample size. The small number of fourth-year medical students participating in a urology subinternship inherently limited the number of participants. A longer-duration study would allow for a larger sample size and the ability to evaluate reproducibility of results between groups. We were also unable to assess how curriculum skills translated to urology intern and junior level performance; therefore, a survey-based follow-up evaluation for all participants during their intern year could contribute to the validity of the outcomes.

> "Our study demonstrated objective gains in knowledge and self-reported confidence following a simulation-based curriculum for commonly performed urological bedside procedures."

Interpretation for Patient Care

Our study demonstrated objective gains in knowledge and self-reported confidence following a simulation-based curriculum for commonly performed urological bedside procedures. We believe that advanced "boot camp" can improve preparation for urology residency, with the potential for sustained benefit over the course of one's urology career and individual patient care. ■

UPJ INSIGHT

Factors Influencing Underrepresented in Medicine Urologist Recruitment to Academic Institutions

David Barquin, MD
Duke University, Durham, North Carolina

David Tella, MD
University of Virginia, Charlottesville

Mei Tuong, MD
University of Virginia, Charlottesville

Kirsten L. Greene, MD
University of Virginia, Charlottesville

Tracy Downs, MD
University of Virginia, Charlottesville

Nora G. Kern, MD
University of Virginia, Charlottesville

Barquin D, Tella D, Tuong M, Greene KL, Downs T, Kern NG. Factors influencing underrepresented in medicine urologist recruitment to academic institutions. *Urol Pract.* 2023;10(2):186-194.

Study Need and Importance

The intent of our study was to characterize factors associated with recruitment of underrepresented in medicine (URiM) urology residents and faculty to academic institutions given the excessive disparity of URiMs in urology compared to other fields. Because urology only has demographic data available in census form, we felt this study would be important as it individualizes the data and attempts to identify where URiMs are training/practicing. By identifying these factors, we hope to bring awareness to institutions regarding who may be disadvantaged based on program location and prestige. This may encourage additional recruitment methods to strengthen the pool of URiMs in the urology workforce.

What We Found

URiM residents and faculty were more likely to be women compared to non-URiMs (see Table). Specifically, the woman-to-man ratio was 1:4 for non-URiMs residents and closer to 1:1 for URiM residents. URiM urologists were found to practice predominantly in the South Central AUA section and in medium metro areas. URiM residents were found to train mostly in medium metro areas and in top 10 training programs based on *U.S. News and World Report* rankings. We did not find any associations for URiM faculty regarding location or prestige. There was also no correlation between presence of URiM faculty and URiM residents.

Table. Demographics by Underrepresented in Medicine Status for Faculty and Residents Combined

	Non-URiM, No. (%) N=3,447	URiM, No. (%) N=328	*P* value
Title			.85
Faculty	1,948 (91.4)	183 (8.6)	
Resident	1,499 (91.2)	145 (8.8)	
Gender			**< .001**
Men	2,713 (92.3)	225 (7.7)	
Women	734 (87.7)	103 (12.3)	
AUA section			.05
Northeastern	174 (94.6)	10 (5.4)	
New England	294 (90.7)	30 (9.3)	
New York	388 (90.9)	39 (9.1)	
Mid-Atlantic	405 (92.5)	33 (7.5)	
Southeastern	587 (91.1)	57 (8.9)	
South Central	375 (88.0)	51 (12.0)	
North Central	775 (93.5)	57 (6.9)	
Western	449 (89.8)	51 (10.2)	
Census statistical areas			**.04**
Small metro (<1.5 million)	1,237 (35.9)	95 (29.0)	
Medium metro (1.5-6 million)	1,181 (34.3)	129 (39.3)	
Large metro (>6 million)	1,029 (29.9)	104 (31.7)	
USNWR rankings			.18
>50	2,209 (64.1)	208 (63.4)	
26-50	433 (12.6)	38 (11.6)	
11-25	428 (12.4)	34 (10.4)	
1-10	377 (10.9)	48 (14.6)	

Abbreviations: AUA, American Urological Association; CI, confidence interval; OR, odds ratio; Ref, reference; URiM, underrepresented in medicine; USNWR, *U.S. News and World Report*.
P values in bold are statistically significant.

"Because urology only has demographic data available in census form, we felt this study would be important as it individualizes the data and attempts to identify where URiMs are training/practicing."

Limitations

Our greatest challenge was characterization of urologists for race. We used biographical information from websites, name of origin, and photo to define URiM status. We recognize the flaws in this; however, we believe our margin of error is insignificant given our overall percentage of URiM urologists (8.7%) matched census data (8%) in a sample size of >3,000 individuals. We do not know how these data could be more accurately obtained otherwise.

Interpretation for Patient Care

By increasing URiM recruitment into institutions, patient care can be improved to accommodate the vastly diverse U.S. population. ■

UPJ INSIGHT

Stent Omission in Pre-stented Patients Undergoing Ureteroscopy Decreases Unplanned Health Care

John Michael DiBianco, MD
University of Florida, Gainesville

Stephanie Daignault-Newton, MS
University of Michigan, Ann Arbor

Ajith Dupati
University of Michigan, Ann Arbor

Spencer Hiller, MD
AdventHealth, Orlando, Florida

Naveen Kachroo, MD
Henry Ford Hospital, Detroit, Michigan

Brian Seifman, MD
Michigan Institute of Urology, Rochester Hills

David Wenzler, MD
Comprehensive Urology, Detroit, Michigan

Casey A. Dauw, MD
University of Michigan, Ann Arbor

Khurshid R. Ghani, MD
University of Michigan, Ann Arbor

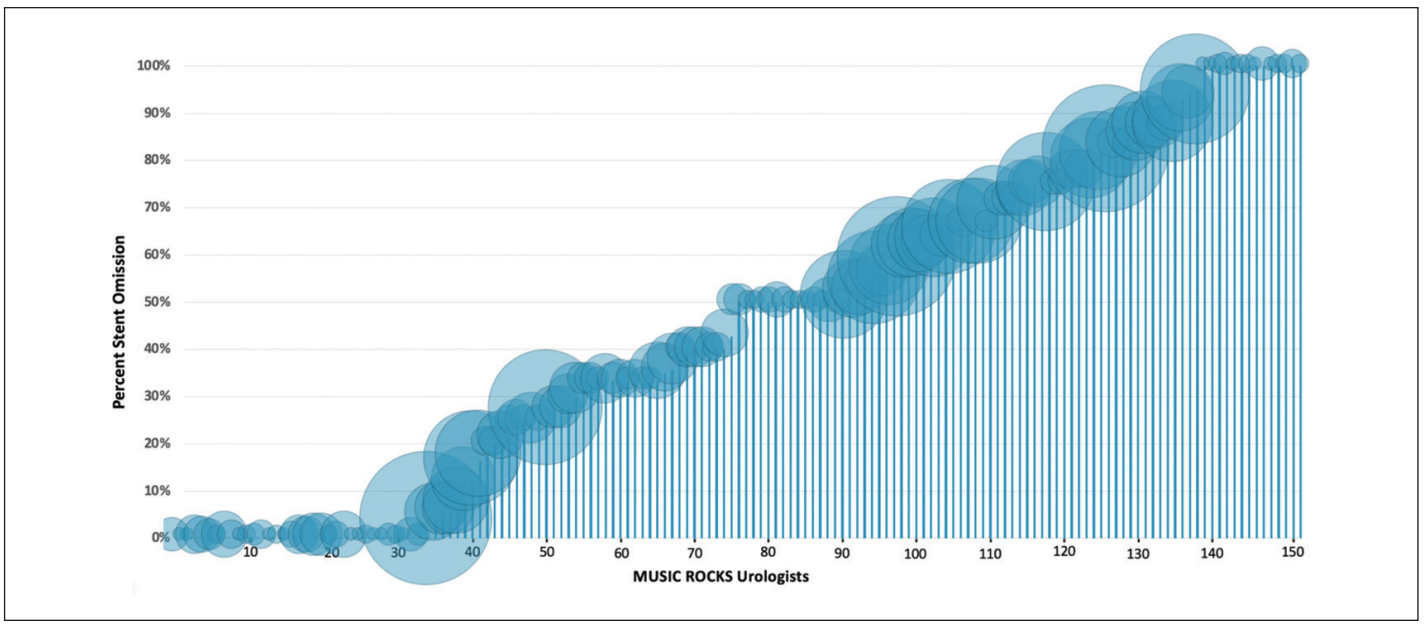


Figure. Variation in rates of stent omission for pre-stented patients undergoing ureteroscopy by urologists in Michigan Urological Surgery Improvement Collaborative (MUSIC) Reducing Operative Complications from Kidney Stones (ROCKS) practices with ≥5 uncomplicated cases. Total ureteroscopy case volume indicated by bubble size.

DiBianco JM, Daignault-Newton S, Dupati A, et al. Stent omission in pre-stented patients undergoing ureteroscopy decreases unplanned health care utilization. *Urol Pract.* 2023;10(2):162-169.

Study Need and Importance

To reduce the morbidity associated with ureteral stents, the AUA stone management guidelines describe a selective approach to stenting after ureteroscopy, stating they may be omitted after uncomplicated procedures. However, the guidelines do not consider pre-stented status in these criteria. Therefore, we sought to characterize the practice of stent omission following uncomplicated ureteroscopy in pre-stented and non–pre-stented patients and its impact on postoperative health care utilization in Michigan.

What We Found

Pre-stented patients represent 36% of ureteroscopy cases in MUSIC (Michigan Urological Surgery Improvement Collaborative). While pre-stented patients more frequently have stents omitted compared to non–pre-stented patients, there was substantial variation in practice, with nearly a quarter of urologists never omitting a stent (see Figure). After adjusting for risk factors, we found that stent omission in pre-stented patients was associated with a significant reduction in postoperative emergency department visits and hospitalizations. Collectively, these findings demonstrate that pre-stented patients are ideal candidates to consider a strategy of stent omission.

> "While pre-stented patients more frequently have stents omitted compared to non–pre-stented patients, there was substantial variation in practice, with nearly a quarter of urologists never omitting a stent (see Figure)."

Limitations

The MUSIC registry includes a variety of urology practices, which enables representation of real-world data; however, the registry does not capture data on renal impairment or laboratory results, and these are thus absent from our uncomplicated ureteroscopy definition. Additionally, we do not capture the reason for stent placement or dwell time prior to ureteroscopy, and it is possible this may have impacted the urologist's decision surrounding stenting.

Interpretation for Patient Care

There is wide variation in stent omission after ureteroscopy in pre-stented patients, and many urologists never perform it. Pre-stented patients have lower postoperative unplanned health care utilization. As such, the pre-stented patient may serve as an ideal target group for quality improvement pathways to increase the use of stent omission, with the goal to improve the patient outcomes after ureteroscopy. ■

> "After adjusting for risk factors, we found that stent omission in pre-stented patients was associated with a significant reduction in postoperative emergency department visits and hospitalizations."

UPJ INSIGHT

Potential for Urolithiasis-related Research Using the Novel Medicare-Litholink Database

Noah A. Krampe, BS
University of Michigan Medical School, Ann Arbor

Mary K. Oerline, MS
University of Michigan Medical School, Ann Arbor

John R. Asplin, MD
Litholink Corporation, Laboratory Corporation of America Holdings, Itasca, Illinois

Ryan S. Hsi, MD
Vanderbilt University Medical Center, Nashville, Tennessee

Joseph J. Crivelli, MD
University of Alabama at Birmingham Heersink School of Medicine

Vahakn B. Shahinian, MD
University of Michigan Medical School, Ann Arbor

John M. Hollingsworth, MD, MS
University of Michigan Medical School, Ann Arbor

Krampe NA, Oerline MK, Asplin JR, et al. Potential for urolithiasis-related research using the novel Medicare-Litholink database. *Urol Pract.* 2023;10(2):146-153.

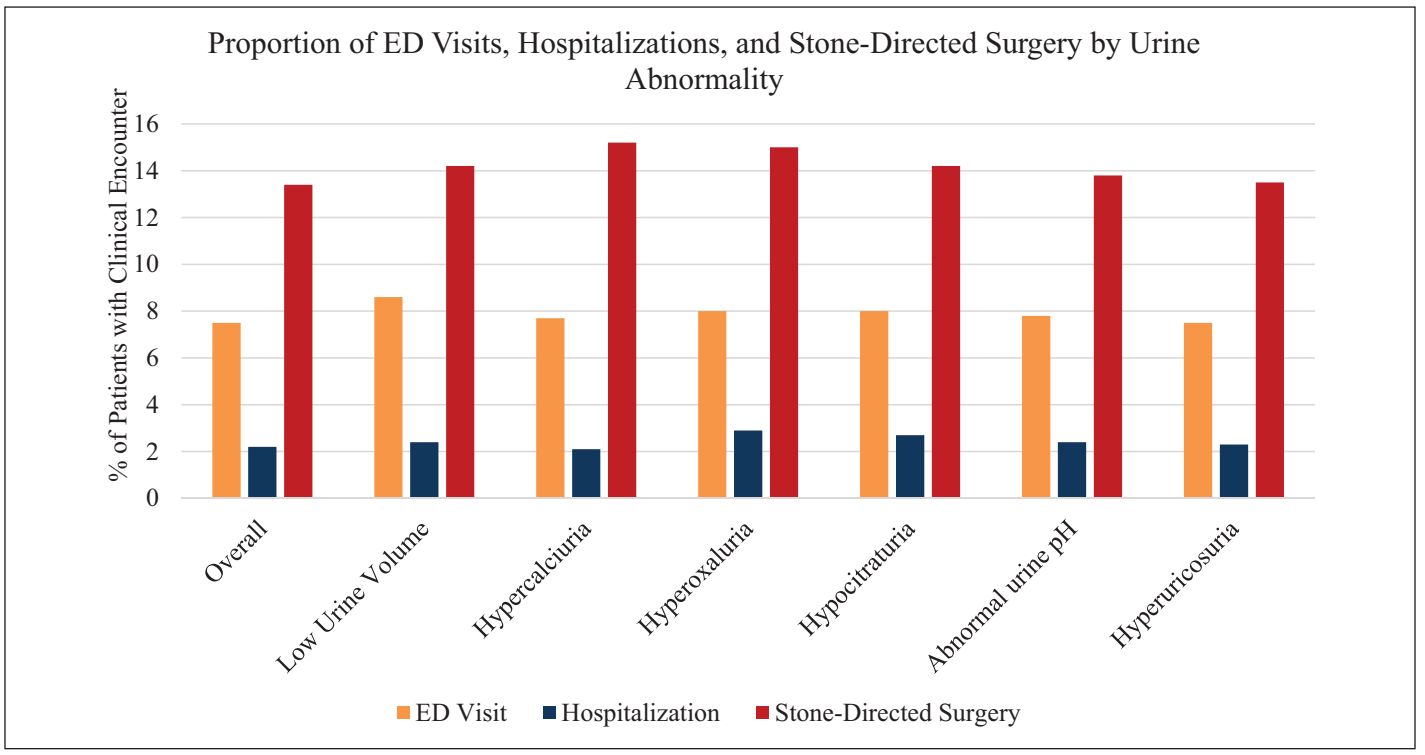


Figure. Frequency of symptomatic stone events by urine abnormality. ED indicates emergency department.

Study Need and Importance

Currently, there is a lack of large databases that contextualize the state of urolithiasis care and the use of 24-hour urine collection tests for the diagnosis and treatment of kidney stone patients with urinary metabolic abnormalities. To overcome this data availability hurdle, we linked Medicare claims data with 24-hour urine collection results from a large cohort of adults with urolithiasis. This database contains the sample size, clinical granularity, and long-term follow-up needed to study urolithiasis on a broad level.

What We Found

This novel linkage resulted in a cohort of 11,460 patients who performed 18,922 urine collections over a 5-year period. Most patients were male (57%), White (93.2%), and lived in a metropolitan county (51.5%). The most common urine abnormality in the cohort was abnormal urine pH (77.2%), followed by low urine volume (63.8%), and hypocitraturia (45.6%). Thirty percent of patients were prescribed preventive pharmacological therapy within 180 days after their first 24-hour urine collection. At 2 years of follow-up, 23.1% of patients had a symptomatic stone event either as surgery, emergency department visit, or hospitalization (see Figure).

Limitations

First, the average age of this cohort is high (69.1). Though urolithiasis is a disease that commonly affects the elderly, this cohort may not be fully representative of the urolithiasis population in the United States. Second, this database lacks stone composition data and prevents us from answering questions about how effective medical or dietary therapy is at preventing specific types of stones.

Interpretation for Patient Care

We successfully linked Medicare claims with results from 24-hour urine collections performed by adults that were processed by Litholink. The resulting database is a unique resource for future studies on the clinical effectiveness of stone prevention strategies and urolithiasis care, more broadly. ■

> "We successfully linked Medicare claims with results from 24-hour urine collections performed by adults that were processed by Litholink."

UPJ INSIGHT

Employment and Labor Force Participation Among Prostate Cancer Survivors

David H. Howard, PhD
Emory University, Atlanta, Georgia

Ingrid J. Hall, PhD, MPH
Centers for Disease Control and Prevention, Atlanta, Georgia

Howard DH, Hall IJ. Employment and labor force participation among prostate cancer survivors. *Urol Pract.* 2023;10(2):178-185.

Study Need and Importance

Employment can help cancer patients maintain and improve physical and mental health. Prior studies on the employment effects of a prostate cancer diagnosis have found mixed results. We sought to analyze the effect of prostate cancer on employment using more recent data.

What We Found

Employment rates were similar between prostate cancer survivors and matched controls (60%), but survivors were slightly more likely to be not working due to disability (see Table). Survivors had more bed days than comparison males and missed more workdays.

Limitations

Differences in outcomes between prostate cancer survivors and men in the control group may be biased by unobserved differences in characteristics related to employment. The data capture the employment outcomes of the sample at a single point in time, and we were not able to adjust estimates for pre-diagnosis employment or describe individuals' trajectory of employment outcomes relative to the date of diagnosis.

> "The downstream effects of prostate cancer and cancer-directed treatment do not substantially impair men's ability to continue to work."

Interpretation for Patient Care

The downstream effects of prostate cancer and cancer-directed treatment do not substantially impair men's ability to continue to work. Employment considerations need not be a major factor in screening- and treatment-related decisions. ■

Table. Differences in Employment-related Outcomes Between Prostate Cancer Survivors and Comparison Males

	Prostate cancer survivors, %	Comparison males, %	Adjusted difference[a] (95% CI)
Employed[b]	60.4	60.6	0.6 (–5.2, 6.3)
Not employed			
Retired	15.4	17.9	–2.8 (–6.9, 1.3)
Disabled	16.7	13.3	2.7 (–1.2, 6.5)
Other[b]	7.5	8.2	–0.6 (–3.5, 2.3)
Labor force participation	67.3	67.3	0.7 (–4.7, 6.1)
Bed days[c]	8.0	5.7	2.8 (2.0, 3.6)
Missed workdays[d]	7.4	3.3	4.5 (3.6, 5.3)

Abbreviation: CI, confidence interval.
Results are weighted to be representative of the civilian, noninstitutionalized population.
[a]Adjusted for comorbidities.
[b]Worked for pay in the week prior to the survey. The "Other" category includes men who are looking for work and on family leave.
[c]Respondents were asked, "How many days did illness or injury keep you in bed more than half of the day?" in the prior year.
[d]Only includes respondents who worked last week.