Ureteral avulsion during contemporary ureteroscopic stone management: “the scabbard avulsion”
Ordon M, Schuler TD, Honey RJ
Division of Urology, St. Michael’s Hospital, Toronto, Ontario, Canada

Ureteral avulsion during ureteroscopic stone management is extremely rare. To date, many publications reporting avulsion have been associated with “blind basket extraction” under fluoroscopy and the use of the Dormia stone basket. Fortunately, despite the significant rise in the numbers of ureteroscopic cases being performed, the rate of ureteral avulsion remains low. This is likely in part because of improvements in ureteroscope technology and stone manipulation devices. We present three recent cases of ureteral avulsion referred to our center for further management. To our knowledge, these cases represent the first published description of avulsion where the ureteroscope became wedged in the intramural ureter, resulting in full-length avulsion of the ureter. The avulsion occurs both proximally and distally with a resultant length of ureter left attached to the ureteroscope. We dub this mechanism the “scabbard” avulsion. We describe the most likely mechanism of this injury, with suggestions on how to prevent it and how to release the ureteroscope should it become wedged in the intramural ureter.

Editorial Comment
The authors have identified a new mechanism of injury to the ureter during semi-rigid ureteroscopy. The authors propose that excessive upward force on the semi-rigid ureteroscope lead to impaction of the scope in the intramural ureter. Withdrawal of the scope then led to avulsion of the intramural ureter at the bladder, followed by avulsion of the UPJ with further extraction of the scope, leaving the ureteral segment as a “scabbard on a sword”. The authors discuss the potential that this complication could occur with the use of larger ureteral access sheaths. They comment that the hydrophilic coating may prevent such an injury. However, it is feasible that if the ureteral access sheath is “tight” on the way up, by the end of a lengthy procedure at which point the hydrophilic coating may no longer be “wet”; significant resistance may be encountered on withdrawal of the sheath. The authors propose that the use of a safety wire may help prevent “impaction” of the scope in the ureter. They propose liberal use of a flexible ureteroscope above the iliac vessels, and lubrication of the proximal shaft of the semi-rigid ureteroscope if plans are to advance it beyone the iliac vessels. The authors also emphasize that excessive upward force with the semi-rigid ureteroscope should be avoided. Lastly, they propose that if an impacted ureteroscope is encountered, one attempt placement of a second endoscope alongside it an utilize a holmium laser to incise the ureteral orifice.

Dr. Manoj Monga
Director, Stevan B. Streem Center for Endourology & Stone Disease
Glickman Urological & Kidney Institute
The Cleveland Clinic
Cleveland, Ohio, USA
E-mail: endourol@yahoo.com
The clinical research office of the endourological society percutaneous nephrolithotomy global study: staghorn versus nonstaghorn stones
Department of Urology, Muljibhai Patel Urological Hospital, Nadiad, India
J Endourol. 2011; 25: 1263-8

Purpose: The study compared characteristics and outcomes in patients with staghorn or nonstaghorn stones who were treated with percutaneous nephrolithotomy (PCNL) within the Clinical Research Office of the Endourological Society (CROES) PCNL Global Study.

Patients and Methods: Data over a 1-year period from consecutively treated patients from 96 centers worldwide were collated. The following variables in patients with staghorn or nonstaghorn stones were compared: National prevalence, patient characteristics, access method, puncture frequency and outcomes, including bleeding rates, operative time, and duration of hospital stay.

Results: Data from 5335 eligible patients were collated; 1466 (27.5%) with staghorn and 3869 (72.5%) with nonstaghorn stones. Staghorn stone presentation varied between centers from 67% in Thailand to 13% in Argentina. The frequencies of previous procedures were similar between groups, but shockwave lithotripsy was less frequent in patients with staghorn stones compared with nonstaghorn (16.8% vs 22.6%) and positive preoperative urine cultures were more frequent in patients with staghorn than nonstaghorn stones (23.4% vs 13.1%). Patients with staghorn stones underwent multiple punctures more frequently than those with nonstaghorn stones (16.9% vs 5.0%). Postoperative fever, bleeding, and the need for blood transfusion were more frequent, the median operative time and duration of hospital stay were longer, while the proportion of patients remaining stone free was lower (56.9% vs 82.5%) in patients with staghorn than nonstaghorn stones.

Conclusions: The proportion of patients with staghorn stones varies widely between centers. Stone-free rates were lower, complications more frequent, and operative time and hospital stay were longer in patients with staghorn stones.

Editorial Comment
The findings of this study are not unexpected; staghorn calculi present a unique challenge to the endourologist; with anticipated higher rates of complications and lower rates of success. However, the study demonstrates clearly that though the rates of complications were higher and hospital stay and OR times longer, they were not prohibitively so; PCNL remains a high standard of care for staghorn calculi. The information provided is useful for counseling patients on the contemporary risks of PCNL and the anticipated success and recuperation. Though the authors report that staghorn calculi are more common in women and have a higher rate of positive urine cultures, they did not report the stone analyses on these patients. It would be useful to evaluate whether the risk of infectious complications is higher in patients with struvite calculi. The relatively low utilization of multiple accesses for staghorn calculi alludes to a high utilization of flexible endoscopes and adjunctive procedures such as flexible ureteroscopy and SWL. The authors do not report the percentage of patients who indeed underwent these procedures. Advocates of the multiple access approach would likely conclude that the low stone free rate of 57% could have been improved had multiple accesses been employed.

Dr. Manoj Monga
Director, Stevan B. Streem Center for Endourology & Stone Disease
Glickman Urological & Kidney Institute
The Cleveland Clinic
Cleveland, Ohio, USA
E-mail: endourol@yahoo.com
Laparoendoscopic Single-site Surgery in Urology: Worldwide Multi-institutional Analysis of 1076 Cases
Glickman Urological & Kidney Institute, Cleveland Clinic, Cleveland, OH, USA
Eur Urol. 2011; 60: 998-1005

Background: Laparoendoscopic single-site surgery (LESS) has gained popularity in urology over the last few years.
Objective: To report a large multi-institutional worldwide series of LESS in urology.
Design, Setting, And Participants: Consecutive cases of LESS done between August 2007 and November 2010 at 18 participating institutions were included in this retrospective analysis.
Intervention: Each group performed a variety of LESS procedures according to its own protocols, entry criteria, and techniques.
Measurements: Demographic data, main perioperative outcome parameters, and information related to the surgical technique were gathered and analyzed. Conversions to reduced-port laparoscopy, conventional laparoscopy, or open surgery were evaluated, as were intraoperative and postoperative complications.
Results and Limitations: Overall, 1076 patients were included in the analysis. The most common procedures were extirpative or ablative operations in the upper urinary tract. The da Vinci robot was used to operate on 143 patients (13%). A single-port technique was most commonly used and the umbilicus represented the most common access site. Overall, operative time was 160 ± 93 min. and estimated blood loss was 148 ± 234 mL. Skin incision length at closure was 3.5 ± 1.5cm. Mean hospital stay was 3.6 ± 2.7 d with a visual analog pain score at discharge of 1.5 ± 1.4. An additional port was used in 23% of cases. The overall conversion rate was 20.8%; 15.8% of patients were converted to reduced-port laparoscopy, 4% to conventional laparoscopy/robotic surgery, and 1% to open surgery. The intraoperative complication rate was 3.3%. Postoperative complications, mostly low grade, were encountered in 9.5% of cases.
Conclusions: This study provides a global view of the evolution of LESS in the field of minimally invasive urologic surgery. A broad range of procedures have been effectively performed, primarily in the academic setting, within diverse health care systems around the world. Since LESS is performed by experienced laparoscopic surgeons, the risk of complications remains low when stringent patient-selection criteria are applied.

Editorial Comment
Laparoendoscopic Single-site Surgery in Urology has evolved and this manuscript demonstrates the fast pace of implementation of this new minimally invasive surgical technique worldwide.

A total of 1076 patients were included in the analysis between August 2007 and November 2010 at 18 participating institutions. Different ports and instrumentations were used but the common theme seems to be the evolution of surgical technique and experience of urological laparoscopists that can perform these procedures.

Overall operative time was 160 ± 93 min and estimated blood loss was 148 ± 234 ml. Skin incision length at closure was 3.5 ± 1.5 cm. Mean hospital stay was 3.6 ± 2.7 d with a pain VAS at discharge of 1.5 ± 1.4.

A single-port technique was chosen in 77% of cases and the umbilicus was the predominant site of access (71% of cases). In cases in which a single-port platform was used, 46% involved a homemade device and 54% used a commercially available device. An additional port was used in 23% of cases. In 34% of these, a 2- to 3-mm extra port was used, whereas in the remaining 66% of cases, an extra 5- to 12-
mm additional port was required. The overall conversion rate was 20.8%, with 15.8% of cases converting to reduced-port laparoscopy, 4% to conventional laparoscopy or robotic surgery, and 1% to open surgery. Reasons for conversion were difficult dissection (37% of converted cases), failure to progress (21%), bleeding (25%), difficult suturing (11%), difficult retraction (3%), and difficult access (3%).

The intraoperative complication rate was 3.3%, with need for conversion to open surgery occurring in three cases and laparoscopy in five cases.

As the authors concluded the Outcomes demonstrate that a broad range of procedures can be effectively and safely done by applying different LESS techniques in a variety of hospital settings. Undeniably, a solid laparoscopic surgical background and stringent patient-selection criteria are critical for successful LESS.

Dr. Fernando J. Kim
Chief of Urology, Denver Health Med. Ctr.
Associate Professor, Univ. Colorado Health Sci. Ctr.
Director of Minimally Invasive Urol. Oncology, UCHSC
Denver, Colorado, USA
E-mail: fernando.kim@dhha.org

Contemporary trends in nephrectomy for renal cell carcinoma in the United States: results from a population based cohort
Kim SP, Shah ND, Weight CJ, Thompson RH, Moriarty JP, Shippee ND, Costello BA, Boorjian SA, Leibovich BC
Department of Urology, Mayo Clinic, Rochester, Minnesota
J Urol. 2011; 186: 1779-85

Purpose: Despite benefits in functional renal outcome and the similar oncological efficacy of partial nephrectomy for renal cell carcinoma, previous studies show marked underuse of partial nephrectomy. We describe national trends in partial and radical nephrectomy using a contemporary, population based cohort.

Materials and Methods: Using the 2003 to 2008 Nationwide Inpatient Sample we identified 188,702 patients treated with partial or radical nephrectomy for renal cell carcinoma at a total of 1,755 hospitals. Multivariate logistic regression was used to assess the independent associations of patient and hospital characteristics with partial nephrectomy. Post-estimations from multivariate logistic regression were done to ascertain the annual predicted probability of partial nephrectomy by hospital feature.

Results: Overall 149,636 (79.3%) and 39,066 patients (20.7%) underwent radical and partial nephrectomy for renal cell carcinoma, respectively. Partial nephrectomy use increased each year from 16.8% in 2003 to 25.1% in 2008 (p for trend <0.001). On multivariate analysis patients were more likely to undergo partial nephrectomy at teaching (OR 1.31, p < 0.001) and urban (OR 1.13, p = 0.05) hospitals compared to nonteaching and rural hospitals, respectively. Each quartile of higher nephrectomy annual volume was associated with higher odds of partial nephrectomy compared to the lowest quartile (OR 1.21, p < 0.001). Although annual predicted partial nephrectomy use increased across all hospitals, differences in annual partial nephrectomy use by teaching status, site (urban vs rural) and case volume persisted with time.

Conclusions: Although the use of partial nephrectomy for renal cell carcinoma is increasing nationally across all hospitals, academic and urban hospitals as well as those with higher nephrectomy volume continue to show higher partial nephrectomy use for renal cell carcinoma.

Editorial Comment
Since development of laparoscopy in urology, we evolved from open nephrectomy to partial open nephrectomy to Laparoscopic radical Nephrectomy, then nephron-sparing laparoscopic partial nephrectomy.
and currently ablative technique. This study demonstrates a national increase in the use of PN as an acceptable surgical option for RCC. While the annualized rate of PN per 100,000 individuals increased by 90% from 2003 to 2008, there was a corresponding 49% increase for PN and a 10% decrease for RN as a proportion of all renal surgeries for RCC in our study. Prior epidemiological studies from SEER (Surveillance, Epidemiology and End Results) and the National Kidney Cancer Database have shown marked underuse of PN for small renal masses, which was further supported by other studies using the NIS from 1998 to 2002.

This study suggests that there continues to be a gradual increase in PN use for RCC nationwide. While PN was more likely to be done at hospitals with a higher surgical volume, urban setting and teaching status from 2003 to 2008, the annual rate of increase was similar at hospitals previously identified with PN underuse. Low case volume, nonteaching and rural hospitals continued to have gradual increases in annual predicted PN use with time.

The difficult and steep learning curve to learn laparoscopic partial nephrectomy may direct training towards ablative small renal masses techniques to address some of the issues, since the oncological outcomes seem comparable to other nephron-sparing techniques.

Dr. Fernando J. Kim
Chief of Urology, Denver Health Med. Ctr.
Associate Professor, Univ. Colorado Health Sci. Ctr.
Director of Minimally Invasive Urol. Oncology, UCHSC
Denver, Colorado, USA
E-mail: fernando.kim@dhha.org

IMAGING

Distal ureteral calculi: US follow-up
Moesbergen TC, de Ryke RJ, Dunbar S, Wells JE, Anderson NG
Department of Radiology, Christchurch Hospital, 2 Riccarton Ave, Christchurch, Canterbury 8011, New Zealand
Radiology. 2011; 260: 575-80

Purpose: To assess accuracy of ultrasonographic (US) follow-up of distal ureteral calculi by using computed tomography (CT) and conventional radiography (kidneys, ureters, and bladder) as reference standards.

Materials and Methods: The study was approved by the Regional Ethics Committee, and written informed consent was obtained. One hundred fifty-eight patients with CT-diagnosed symptomatic ureteral calculi, for whom follow-up imaging was ordered, were enrolled from February 2006 to December 2008. Six were excluded, having not met study entry criteria, with 121 men (mean age, 49 years; range, 20-91 years) and 31 women (mean age, 44 years; range, 34-77 years) completing the protocol with adequate reference standard imaging. Targeted transabdominal US occurred coincidently with follow-up CT (n = 92) or radiography (n = 60), with US evaluation prospectively compared considering sensitivity and specificity. Statistical analysis was performed with a χ² test, t test, or paired t test, as appropriate.

Results: Results of nine US examinations were nondiagnostic because of inadequate ureteral visualization, and among these, two cases showed residual distal calculi. Of the remaining 143 patients, 33 had residual distal calculi, all visualized with US. There was a single false-positive study, giving sensitivity, including nondiagnostic US examinations, of 94.3% (95% confidence interval [CI]: 80.8%, 99.3%) and specificity of 99.1% (95% CI: 95.3%, 100%). All calculi appeared hyperechoic with posterior acoustic shadowing. Additional diagnostic features included presence of a hypoechoic rim and Doppler twinkle artifact. Mean stone length was 7.2 mm ± 2.6 (stan-
standard deviation) (range, 4-18 mm). Mean ureteral length visualized was 36.4 mm (range, 12-77 mm), with calculi positioned at a mean of 13.1 mm ± 11.2 (range, 0-40 mm) from the ureterovesical junction (UVJ). Nondiagnostic results were more likely with bladder volume of 110 mL or less (eight [16%] of 50 vs one [1%] of 102, P = .0009).

Conclusion: Ureteral calculi within 35 mm of the UVJ can be accurately followed-up by using transabdominal US, which substantially reduces patient radiation burden.

Editorial Comment

Using non-contrast CT for follow-up urinary tract stone is of concern because this entity commonly occurs in a relatively young population. Recently low radiation dose CT protocol has been developed for urinary tract follow-up. The effective radiation dose to the patient range from 8-10 mSv for the standard non-contrast CT protocol, from 3-5 mSv for low dose CT-protocol and from 0.5-1.2 mSv for conventional plain film of the abdomen.

This is a retrospective study that shows that in patients with impacted ureteral stone demonstrated by previous CT, US alone can be of value for the patients’ follow-up allowing the detection of residual distal ureteral stone. US showed high sensitivity and specificity when compared with non-contrast CT and conventional abdominal plain film. Calculi within 35 mm of the ureterovesical junction, larger than 4 mm (mean length of residual calculi = 7.2 mm) were better detected in non-obese patients with adequate bladder distension (150-200 mL).

Ultrasound (US) is a noninvasive, safe technique, which can detect acute urinary obstruction due to ureteral stone. Since it is an operator dependent technique and much of ureteral length is frequently obscured by bowel gas its accuracy for detecting ureteral stones varies from 4-83%. Color Doppler sonography is useful as a complimentary when the presence ureteral stone is associated with a specific artifact called “twinkle artifact”. Abnormal ureteral jetting is another useful Color Doppler finding for the characterization of distal ureteral stone. In obese, dehydrated patients or in patients presenting an empty bladder, transvaginal or transrectal ultrasound could be also a useful complimentary approach for the detection of distal ureteral stone.

Dr. Adilson Prando
Head, Department of Radiology and Diagnostic Imaging, Vera Cruz Hospital Campinas, São Paulo, Brazil
E-mail: adilson.prando@gmail.com

Evaluation of upper urinary tract tumors with portal venous phase MDCT: a case-control study
Kupershmidt M, Margolis M, Jang HJ, Massey C, Metser U
Joint Department of Medical Imaging, University Health Network, Mount Sinai Hospital and Women’s College Hospital, University of Toronto, 610 University Ave, Toronto, ON M5G 2M9, Canada
AJR Am J Roentgenol. 2011; 197: 424-8

Objective: The purpose of this article is to assess the detection and negative prediction rate of upper urinary tract tumors in nonopacified urinary tracts on portal venous phase MDCT.

Materials and Methods: This retrospective case-control study included 20 patients with upper urinary tract tumors and 40 age- and sex-matched control subjects. All studies were assessed independently by two reviewers. Reviewers determined whether each of four segments of the upper urinary tract could be fully visualized...
and whether tumor was present or absent. For each tumor, reviewers characterized its morphologic features (i.e., infiltrative or polypoid mass, urothelial thickening, and associated hydroureter or hydronephrosis).

Results: The detection rate of the proximal two upper urinary tract segments was significantly higher than that for the distal segments (p < 0.001). For each upper urinary tract, the sensitivity, specificity, and negative predictive value of portal venous phase MDCT for detecting tumors were 95%, 97%, and 100%, respectively. The positive predictive value for an estimated population prevalence of 0.0005-0.004 was 0.6-4.8%. The morphologic features significant for the presence of tumor were urothelial thickening and the presence of a discrete polypoid mass. Interobserver agreement for all features was good or very good, except for moderate agreement on urothelial thickening involving the ureter (κ = 0.60).

Conclusion: The detection rate of upper urinary tract tumors on nonopacified portal venous phase is high. Furthermore, in the absence of morphologic features suggestive of urothelial malignancy, a normal-appearing ureter may be reassuring.

Editorial Comment

Three-phase multidetector computed tomography urography (MDCTU) has become the method of choice for investigation patients with hematuria. Three-phase MDCT represents a complete protocol including non-contrast (through abdomen and pelvis), nephrographic/portal (through the kidneys) and excretory phases (through abdomen and pelvis). Such complete protocol is necessary when searching all possible causes of hematuria: calculi, vascular, parenchymal or urothelial abnormalities. In patients with ureteral obstruction, delayed contrast excretion by the kidney preclude contrast opacification of the ureter and sometimes the excretory phase has to be postponed or even repeated. The total amount of effective radiation dose delivered to the patients when using this three-phase protocol varies from 15-18 mSv.

The authors of this retrospective case-control study suggests that nephrographic/portal venous phase MDCT-urography obtained at 70-90 seconds after intravenous injection of contrast material has high PPV and NPV for detecting tumor in the upper urinary tract with an overall sensitivity, specificity, and NPV of 95%, 97%, and 100%, respectively. Another authors’ suggestion is that of even when nonopacified, the likelihood of malignancy in a normal-appearing ureter is low and the identification rate of upper urinary tract tumors will still be high.

Any attempt to reduce the total amount of radiation in MDCT-urography should be incentivized but some points of this report deserve some comments. Since in nephrographic phase only both kidneys are imaged, consequently only the pelvocalyceal system and upper portion of the ureter is evaluated. As pointed out by the authors the mid and distal portions of ureter will not be imaged. In our institution we obtain a complete abdominal/pelvic acquisition during portal/nephrographic phase only in patients presenting hydronephrosis and hydroureter on non-contrast phase. In such situation all the urothelial surface is evaluated and urothelial cancer is readily detected. Excretory phase however is still necessary to image contralateral excretory unit due to eventual multifocal tumor, but there is no need for further delayed abdominal/pelvic acquisition(s).

Additionally, in our experience, the absence of abnormalities in the portal phase of a normal-appearing ureter does not always mean absence of tumor. Occasionally small urothelial lesions can be overlooked in nephrographic phase and be retrospectively identified based on findings of the excretory phase.
Gleason score 7 prostate cancer on needle biopsy: relation of primary pattern 3 or 4 to pathological stage and progression after radical prostatectomy

Amin A, Partin A, Epstein JI
Department of Pathology, The Johns Hopkins Medical Institutions, Baltimore, Maryland, USA
J Urol. 2011; 186: 1286-90

Purpose: There have been only a few contradictory publications assessing whether Gleason score 4 + 3 = 7 has a worse prognosis than 3 + 4 = 7 on biopsy material in predicting pathological stage and biochemical recurrence. Older studies predated the use of the modified Gleason grading system established in 2005.

Materials and Methods: We retrospectively studied 1,791 cases of Gleason score 7 on prostatic biopsy to determine whether the breakdown of Gleason score 7 into 3 + 4 vs 4 + 3 has prognostic significance in the modern era.

Results: There was no difference in patient age, preoperative serum prostate specific antigen, maximum tumor percent per core or the number of positive cores between Gleason score 3 + 4 = 7 and Gleason score 4 + 3 = 7. Gleason score 4 + 3 = 7 showed an overall correlation with pathological stage (organ confined, focal extraprostatic extension, nonfocal extraprostatic extension, seminal vesicle invasion/lymph node metastases, p = 0.005). On multivariate analysis Gleason score 4 + 3 = 7 (p = 0.03), number of positive cores (p = 0.002), maximum percent of cancer per core (p = 0.006) and preoperative serum prostate specific antigen (p = 0.03) all correlated with pathological stage. Gleason score 4 + 3 = 7 on biopsy was also associated with an increased risk of biochemical progression after radical prostatectomy (p = 0.0001). On multivariate analysis Gleason score 4 + 3 = 7 (p = 0.001), maximum percent of cancer per core (p < 0.0001) and preoperative serum prostate specific antigen (p < 0.0001) but not number of positive cores correlated with the risk of biochemical progression after radical prostatectomy.

Conclusions: Our study further demonstrates that Gleason score 7 should not be considered a homogenous group for the purposes of disease management and prognosis.

Editorial Comment

The importance of grading prostate carcinoma is evidenced by the fact that it is included in all nomograms used to predict pathologic stage and biochemical progression following radical prostatectomy. The Gleason score may be used to define prognostic groups.

The most frequent combination of Gleason scores defining prognostic groups is 2-4, 5-6, 7, and 8-10. Gleason score 7 may result from 3+4 or 4+3 patterns. There is conflicting data as to the prognostic difference of Gleason score 7 on a biopsy depending on whether the primary pattern is 3 or 4 (1,2).

The study from the Johns Hopkins based on a very large number of patients showed that Gleason score 7 should not be considered a homogeneous group for the purpose of disease management and prognosis.
There was no difference in patient age, preoperative serum prostate specific antigen, maximum tumor percent per core or the number of positive cores between Gleason score 3 + 4 = 7 and Gleason score 4 + 3 = 7. However, Gleason score 4+3=7 showed a statistically significant correlation with pathological stage, and on multivariate analysis an increased risk for biochemical progression following radical prostatectomy.

References

Dr. Athanase Billis
Full-Professor of Pathology
State University of Campinas, Unicamp
Campinas, São Paulo, Brazil
E-mail: athanase@fcm.unicamp.br

Should intervening benign tissue be included in the measurement of discontinuous foci of cancer on prostate needle biopsy? Correlation with radical prostatectomy findings
Karram S, Trock BJ, Netto GJ, Epstein JI
Department of Pathology, The Johns Hopkins Hospital, 401 N. Broadway Street, Baltimore, MD 21231, USA

Currently, there is no consensus as to the optimal method for measuring tumor length or percentage of cancer on a core when there are 2 or more foci of prostate cancer in a single core separated by benign intervening stroma. One option is to measure discontinuous foci of cancer as if they were 1 single continuous focus. The other option is to add the measurements of the individual separate foci of cancer, ignoring the extent of the intervening benign prostate tissue. The surgical pathology database at The Johns Hopkins Hospital was searched for outside consult cases of prostate needle biopsies reviewed between 2005 and 2010 when the patient came to our institution for radical prostatectomy (RP). Cases were restricted to those with biopsy Gleason score 6 in which there was at least 15% discordance between the outside and our institution in terms of the reported highest percentage of cancer per core per case. One hundred and nine patients were identified fulfilling our inclusion criteria. Seventy-nine showed the same Gleason score in the RP, and 30 had an upgrade to Gleason ≥ 7. Including all cases (scores 6, 7, and 8 at RP), there was no significant association between the maximum percentage of cancer per core with organ-confined disease or risk of positive surgical margins, regardless if the cores were measured at Hopkins or at the outside institutions. For cases with no upgrade at RP, the differences between the maximum percentage of cancer per core per case recorded at Hopkins and the outside institutions ranged from 15% to 80%, in which the mean and median differences were 35% and 30%, respectively. The maximum percentages of tumor involvement on a core per case given at our institution more strongly correlated with the presence of organ-confined disease (P = 0.004) compared with the percentages given at the outside institutions (P = 0.027). Surgical margin positivity was also associated with the maximum percentages of tumor involvement per core given at our institution (P = 0.004), whereas the outside percentages were not significant predictors of margin status (P = 0.2). In a multivariable analysis, maximum percentage of cancer per core per case measured at Hopkins which includes intervening benign prostate tissue in the measurement was also more predictive of stage and margins than ignoring intervening benign tissue. In summary, our study demonstrated
that for prostate cancer in which the needle biopsy grade is representative of the entire tumor, quantifying cancer extent on biopsy by measuring discontinuous cancer on biopsy from one end to the other as opposed to “collapsing” the cancer by subtracting out the intervening benign prostate tissue correlates better with organ-confined disease and risk of positive margins.

**Editorial Comment**
The article discusses how to measure on a needle biopsy the linear extent of 2 discontinuous foci of tumor. One option is to measure discontinuous foci of cancer as if they were 1 single continuous focus. The other option is to add the measurements of the individual separate foci of cancer, ignoring the extent of the intervening benign prostate tissue.

The study from Johns Hopkins demonstrated that for prostate cancer in which the needle biopsy grade is representative of the entire tumor, quantifying cancer extent on biopsy by measuring discontinuous cancer on biopsy from one end to the other as opposed to “collapsing” the cancer by subtracting out the intervening benign prostate tissue correlates better with organ-confined disease and risk of positive margins.

There is no consensus among pathologists on this issue. How to measure 2 distinct foci of tumor on a needle biopsy may have implications whenever applying criteria for insignificant cancer (1). For example: in a particular case with only one core showing 2 distinct foci of tumor each one at the very end of the core the resultant percentage of involvement may differ according to the option used for the measurement. Opting to measure the 2 foci of cancer as if they were 1 single continuous focus the percentage of involvement may be more than 50% therefore without criteria for insignificant cancer; opting to add the measurements of the individual separate foci of cancer, ignoring the extent of the intervening benign prostate tissue, the percentage of involvement may be only 10% therefore with criteria for insignificant cancer.

**Reference**

Dr. Athanase Billis  
Full-Professor of Pathology  
State University of Campinas, Unicamp  
Campinas, São Paulo, Brazil  
E-mail: athanase@fcm.unicamp.br

**RECONSTRUCTIVE UROLOGY**

Changes in uroflowmetry maximum flow rates after urethral reconstructive surgery as a means to predict for stricture recurrence  
Erickson BA, Breyer BN, McAninch JW  
Department of Urology, University of California, San Francisco, San Francisco, California  
J Urol. 2011; 186: 1934-7

Purpose: A reliable, noninvasive screening method for urethral stricture recurrence after urethroplasty is needed. We hypothesized that changes in flow rates on uroflowmetry relative to preoperative values might help predict stricture recurrence.

Materials and Methods: All men who underwent urethral reconstructive surgery from 2000 to 2009 with adequate preoperative and postoperative uroflowmetry studies were included in the study. Preoperative and
postoperative maximum flow rates were compared. The absolute change in maximum flow rate was compared between patients with and those without recurrence as determined by retrograde urethrogram.

Results: A total of 125 patients treated with urethroplasty were included in the study. Mean ± SD preoperative maximum flow rate was 11.8 ± 9.1 mL per second, which did not vary by stricture length (p = 0.11), patient age (p = 0.46) or stricture location (p = 0.58). The change in maximum flow rate in men without recurrence was 19.2 ± 11.7 vs 0.2 ± 6.4 mL per second (p < 0.001) in failed repairs. Setting a change in maximum flow rate of less than 10 ml per second as a screen for stricture recurrence would have resulted in a test sensitivity and specificity of 92% and 78%, respectively. There were 85 men without stricture recurrence who underwent more than 1 postoperative uroflowmetry study. Repeated maximum flow rate values achieved reasonable test reproducibility (r = 0.52), further supporting the use of uroflowmetry.

Conclusions: Change in flow rate after urethral reconstruction represents a promising metric to screen for stricture recurrence that is noninvasive and has a high sensitivity.

Editorial Comment

This is a follow-up study to one published a year earlier by the same group (1). In this series of manuscripts they strive to identify a sensitive non-invasive screening test for urethral stricture recurrence after urethroplasty. Follow-up mechanisms after urethroplasty are varied and may include uroflowmetry, symptom assessment with validated instruments, urethrogram or cystoscopy. Herein, the authors present a mechanism to avoid more invasive tests (urethrogram and cystoscopy) in the majority of patients. If one only performs invasive testing on those with a post-operative maximum urinary flow rate that is < 10 cc/s better than their pre-operative maximum flow rate then one will capture 92% of stricture recurrences. In other words, the false negative rate was low. The description of limitations in the discussion is well done and includes mention of the fact that the recurrence rate in this population was slightly high (26%) and that this will artificially increase the positive predictive value; however, for a screening tool, the high sensitivity is the most important attribute.

Reference

Dr. Sean P. Elliott
Department of Urology Surgery
University of Minnesota
Minneapolis, Minnesota, USA
E-mail: selliott@umn.edu

Central role of Boari bladder flap and downward nephropexy in upper ureteral reconstruction
Mauck RJ, Hudak SJ, Terlecki RP, Morey AF
Department of Urology, University of Texas Southwestern Medical Center; Dallas, Texas 75390-9110, USA
J Urol. 2011; 186: 1345-9

Purpose: We defined the role of the Boari bladder flap procedure with or without downward nephropexy for proximal vs distal ureteral strictures.

Materials and Methods: We retrospectively reviewed the records of all patients who underwent open ureteral reconstruction for refractory ureteral strictures, as done by a single surgeon between 2007 and 2010. Patients were grouped by stricture site into group 1--proximal third of the ureter and group 2--distal two-thirds. Operative techniques and outcomes were reviewed.
Results: During the 30-month study period a total of 29 ureteral reconstruction procedures were performed on 27 patients. A Boari bladder flap was used in 10 of the 12 patients (83%) in group 1 and 10 of the 17 (59%) in group 2. Concomitant downward nephropexy was done more commonly in group 1 (58% vs 12%, p = 0.014). At a mean followup of 11.4 months there was no difference in the overall failure rate between groups 1 and 2 (17% vs 12%). Complications developed more frequently in group 1 (75% vs 35%, p = 0.060), hospital stay was longer (mean 8.0 vs 4.4 days, p = 0.017) and mean estimated blood loss was greater (447 vs 224 ml, p = 0.008).

Conclusions: The Boari bladder flap procedure is a reliable technique to reconstruct ureteral strictures regardless of site. Renal mobilization with downward nephropexy is a useful adjunctive maneuver for proximal strictures.

Editorial Comment
The authors review their experience with reconstruction of ureteral defects. 20 of these patients underwent Boari flap reconstruction with or without downward nephropexy. The focus of the paper is on the utility of Boari flap for reconstruction of upper segment strictures not amenable to uretero-ureterostomy. Many urologists avoid Boari flap in such cases due to a fear that the flap will not reach or a concern that is the flap reaches, its length:base width ratio will exceed 3:1. The authors demonstrate that with liberal use of downward nephropexy (used in 7 of 10 upper ureteral Boari flaps) good success rates can be achieved. Of note, no long-term imaging was done unless warranted by recurrent symptoms. So, the risk of long-term silent hydronephrosis due to recurrent obstruction is unclear. There are many ways to anastomose the ureter to the Boari flap. Morey anastomoses the ureter to the flap in an end-to-end fashion. I have typically done an end-to-side anastomosis of the ureter into the posterior wall of the flap, typically 2 cm below the upper terminus of the flap. I do this because I feel the blood supply is better than at the tip of the flap and because, I like to reimplant far from the anterior suture line on the bladder flap. The downside of this approach is that I sacrifice a couple of centimeters in length. Based on Morey’s results, the end-to-end technique appears to be a good option when the length does not allow an end-to-side anastomosis.

Dr. Sean P. Elliott
Department of Urology Surgery
University of Minnesota
Minneapolis, Minnesota, USA
E-mail: selliott@umn.edu

The EORTC tables overestimate the risk of recurrence and progression in patients with non-muscle-invasive bladder cancer treated with bacillus Calmette-Guérin: external validation of the EORTC risk tables
Department of Urology, Hospital Central of Asturias, University of Oviedo, Oviedo, Spain
Eur Urol. 2011; 60: 423-30

Background: European Organization for Research and Treatment of Cancer (EORTC) risk tables only included 171 patients treated with bacillus Calmette-Guérin (BCG) for non-muscle-invasive bladder cancer (NMIBC).
Objective: To evaluate the external validity of the EORTC tables in patients with NMIBC treated with BCG over 5-6 mo.

Design, Setting, and Participants: Data on 1062 patients treated with BCG were analyzed.

Measurements: Discrimination was assessed using the concordance index (c-index) and the prognostic separation index (PSEP). For calibration, probabilities of recurrence and progression obtained with the EORTC risk tables in our series were compared with those reported by the EORTC.

Results and Limitations: With respect to the discriminative ability of the EORTC model, c-index was similar to those reported in the EORTC series for recurrence. However, c-indices for progression in our series were lower than c-indices reported by Sylvester et al. [1]. Although PSEP in our series was lower than in the EORTC series for recurrence at 1 yr, similar results were found at 5 yr. Regarding progression, PSEP in our series was lower than in the EORTC series. Whilst a successful stratification of recurrence and progression probability at 1 and 5 yr was achieved using the EORTC tables in our series, model calibration showed lower risks of recurrence than those reported by Sylvester et al. [1] in all groups. For progression, lower risks were found in higher-risk groups. There are some limitations in the present study. A different distribution of patients was found, with higher proportions of primary grade 3 T1 tumors and tumors in situ than in the EORTC series. An additional limitation is that prior recurrence of the EORTC table was not included in our parameters. Consequently, two separate analyses were performed for recurrence.

Conclusions: The EORTC model successfully stratified recurrence and progression risks in our cohort. However, the discriminative ability of the EORTC tables decreased in our patients for progression. Moreover, these tables overestimated risks of recurrence and progression after BCG therapy.

Editorial Comment

EORTC risk tables and the related calculator at http://www.eortc.be/tools/bladdercalculator are widely used tools to estimate the risk of recurrence and progression in patients with non-muscle invasive bladder cancer (NMIBC). The underlying database consists on EORTC trials on NMIBC mostly on intravesical chemotherapy before the era of BCG. Therefore, an external evaluation in a different population, and, ideally, with more modern therapy such as BCG, was highly desirable. The CUETO group from Spain evaluated these risk tables in a cohort of patients from 4 own trials, all using BCG. Several conclusions can be drawn from this external validation of the EORTC risk tables. First, the risk tables can be used to assess recurrence and progression in different populations. Second, and even more important to my opinion, the EORTC models overestimated the risk of recurrence and on progression in comparison the real-life CUETO data using BCG therapy, meaning that the Spanish population treated with BCG fared better than the European population mostly treated with intravesical chemotherapy. This can be indirectly be interpreted as a large-population based proof of the success of BCG therapy against recurrence and against progression in high-risk patients.

Dr. Andreas Bohle
Professor of Urology
HELIOS Agnes Karll Hospital
Bad Schwartau, Germany
E-mail: boehle@urologie-bad-schwartau.de
Compliance with guidelines for patients with bladder cancer: Variation in the Delivery of Care
Chamie K, Saigal CS, Lai J, Hanley JM, Setodji CM, Konety BR, Litwin MS; The Urologic Diseases in America Project
Department of Urology, Health Services Research Group, David Geffen School of Medicine, University of California at Los Angeles, Los Angeles, California; Jonsson Comprehensive Cancer Center, David Geffen School of Medicine, University of California at Los Angeles, Los Angeles, California

Background: Clinical practice guidelines for the management of patients with bladder cancer encompass strategies that minimize morbidity and improve survival. In the current study, the authors sought to characterize practice patterns in patients with high-grade non-muscle-invasive bladder cancer in relation to established guidelines.

Methods: Surveillance, Epidemiology and End Results (SEER)-Medicare-linked data were used to identify subjects diagnosed with high-grade non-muscle-invasive bladder cancer between 1992 and 2002 who survived at least 2 years without undergoing definitive treatment (n = 4545). The authors used mixed-effects modeling to estimate the association and partitioned variation of patient sociodemographic, tumor, and provider characteristics with compliance measures.

Results: Of the 4545 subjects analyzed, only 1 received all the recommended measures. Approximately 42% of physicians have not performed at least 1 cystoscopy, 1 cytology, and 1 instillation of immunotherapy for a single patient nested within their practice during the initial 2-year period after diagnosis. After 1997, only use of radiographic imaging (odds ratio [OR], 1.19; 95% confidence interval [95% CI], 1.03-1.37) and instillation of immunotherapy (OR, 1.67; 95% CI, 1.39-2.01) were found to be significantly increased. Surgeon-attributable variation for individual guideline measures (cystoscopy, 25%; cytology, 59%; radiographic imaging, 10%; intravesical chemotherapy, 45%; and intravesical immunotherapy, 26%) contributes to this low compliance rate.

Conclusions: There is marked underuse of guideline-recommended care in this potentially curable cohort. Unexplained provider-level factors significantly contribute to this low compliance rate. Future studies that identify barriers and modulators of provider-level adoption of guidelines are critical to improving care for patients with bladder cancer.

Editorial Comment
From a scientific standpoint, guidelines are an evidence-based distillate of the current knowledge on a given disease. So, ideally, every urologist should adhere to at least one guideline and should treat his/her patients accordingly.

This view is over-idealistic indeed, as shown by this paper from Chamie and colleagues. Using SEER data, they showed that only 1 (!) of 4545 patients analyzed received all recommended measures. There was at least a significant improvement over time with regard to BCG treatment.

This study retrospectively assessed treatments until 2002. Further analyses on the developments in the years thereafter, when guidelines really came into everyday’s practice, would be highly interesting.

Dr. Andreas Bohle
Professor of Urology
HELIOS Agnes Karll Hospital
Bad Schwartau, Germany
E-mail: boehle@urologie-bad-schwartau.de
Detection and clinical outcome of urinary bladder cancer with 5-aminolevulinic acid-induced fluorescence cystoscopy: A multicenter randomized, double-blind, placebo-controlled trial
Medical Center of Eberhard Karls University, Department of Urology, Tübingen, Germany

Background: The medical community lacks results from prospective controlled multicenter studies of the diagnostic efficacy of 5-aminolevulinic acid (5-ALA) cystoscopy on tumor recurrence in patients with superficial bladder tumors.

Methods: A prospective randomized, double-blind, placebo-controlled study was conducted in 370 patients with nonmuscle-invasive urinary bladder carcinoma who received either 5-ALA (n = 187) or a placebo (n = 183) intravesically before cystoscopy. Each group underwent cystoscopy under visible white light and under fluorescent light followed by transurethral tumor resection. The primary study objective was to evaluate the 12-month recurrence-free survival.

Results: Slightly more patients with tumors were detected by using 5-ALA than by using the placebo (88.5% vs 84.7%). The mean numbers of tumor specimens per patient were 1.8 (5-ALA) and 1.6 (placebo). Intrapatient comparison of fluorescent light versus white light cystoscopy in patients randomized to receive 5-ALA showed a higher tumor detection rate with fluorescent light than with white light cystoscopy. In patients receiving 5-ALA cystoscopy, the percentage of lesions that would not have been detected in these patients by white light cystoscopy ranged between 10.9% (pT1) and 55.9% (atypia). Progression-free survival was 89.4% (5-ALA) and 89.0% (placebo) (P = .9101), and recurrence-free survival 12 months after tumor resection was 64.0% (5-ALA) and 72.8% (placebo) (P = .2216).

Conclusions: In comparison to the placebo, 5-ALA cystoscopy did not increase the rates of recurrence-free or progression-free survival 12 months after tumor resection. Although more tumors per patient were detected in the 5-ALA group, the higher detection rate did not translate into differences in long-term outcome.

Editorial Comment
Fluorescence-guided diagnosis or resection of bladder cancer is a widely used tool and certainly even more widely disputed among urologists worldwide. Therefore, an independent assessment of its value is highly desirable.

This trial was the first double-blind, placebo-controlled, prospective randomized study and therefore the results are worth reading. In short, the mean number of tumor specimens per patient was higher with 5-ALA cystoscopy (1.8) than with placebo arm cystoscopy (1.6). The difference was not significant (P = .1178). Slightly more tumors were detected with 5-ALA cystoscopy than with placebo arm cystoscopy (88.5% vs 84.7%). In contrast to previous studies with 5-ALA the percentages of diagnoses with isolated CIS were rather low (5-ALA 1.6%; placebo arm 1.7%); those with concomitant CIS were 10.8% (5-ALA) and 12.0% (placebo arm). Interestingly, recurrence-free survival rates at 12 months were 64.0% (5-ALA cystoscopy) and 72.8% (placebo arm cystoscopy) (not significant).

In conclusion, this multicenter trial had different results than previous single center trials with dedicated interest in 5-ALA resection. Further multicentric, blinded trials are needed to establish the real value of this potentially helpful adjunct to urologic surgery.
Anterior colporrhaphy versus transvaginal mesh for pelvic-organ prolapse

Altman D, Väyrynen T, Engh ME, Axelsen S, Falconer C; Nordic Transvaginal Mesh Group
Division of Obstetrics and Gynecology, Department of Clinical Science, Danderyd Hospital, Stockholm, Sweden

Background: The use of standardized mesh kits for repair of pelvic-organ prolapse has spread rapidly in recent years, but it is unclear whether this approach results in better outcomes than traditional colporrhaphy.
Methods: In this multicenter, parallel-group, randomized, controlled trial, we compared the use of a trocar-guided, transvaginal polypropylene-mesh repair kit with traditional colporrhaphy in women with prolapse of the anterior vaginal wall (cystocele). The primary outcome was a composite of the objective anatomical designation of stage 0 (no prolapse) or 1 (position of the anterior vaginal wall more than 1 cm above the hymen), according to the Pelvic Organ Prolapse Quantification system, and the subjective absence of symptoms of vaginal bulging 12 months after the surgery.
Results: Of 389 women who were randomly assigned to a study treatment, 200 underwent prolapse repair with the transvaginal mesh kit and 189 underwent traditional colporrhaphy. At 1 year, the primary outcome was significantly more common in the women treated with transvaginal mesh repair (60.8%) than in those who underwent colporrhaphy (34.5%) (absolute difference, 26.3 percentage points; 95% confidence interval, 15.6 to 37.0). The surgery lasted longer and the rates of intraoperative hemorrhage were higher in the mesh-repair group than in the colporrhaphy group (P < 0.001 for both comparisons). Rates of bladder perforation were 3.5% in the mesh-repair group and 0.5% in the colporrhaphy group (P = 0.07), and the respective rates of new stress urinary incontinence after surgery were 12.3% and 6.3% (P = 0.05). Surgical reintervention to correct mesh exposure during follow-up occurred in 3.2% of 186 patients in the mesh-repair group.
Conclusions: As compared with anterior colporrhaphy, use of a standardized, trocar-guided mesh kit for cystocele repair resulted in higher short-term rates of successful treatment but also in higher rates of surgical complications and postoperative adverse events. (Funded by the Karolinska Institutet and Ethicon; ClinicalTrials.gov number, NCT00566917.).

Editorial Comment
This paper is the result of an outstanding effort by several centers to bring up a decent comparative analysis between classic anterior colporrhaphy and transvaginal mesh correction for pelvic organ prolapse. The study enrolled approximately 400 patients and gathered two very similar groups to undergo the two procedures. Equation of factors such as BMI, age and time since menopause adds credibility to this cohort. It is a known concern that mesh placement involves a more demanding surgical expertise and familiarity with pelvic anatomy and also is associated with a higher rate of sexual dysfunction (1) and major surgical
complications, as the technique frequently involves the blind passage of needles to anchor mesh arms into the pelvic ligaments. This study corroborates that intraoperative complications may a bit higher indeed in the mesh group (blood loss, operative time, bladder perforation) but with low clinical impact (except for blood loss in 5 five cases of the mesh group which surpassed 500 mL). Sexual impairment was statistically equivalent for both groups regarding pain and satisfaction (p > 0.05). Objective results for organ prolapse were better for the use of mesh repair which is in accordance with other reports with similar follow up (1 year). A higher incidence of new stress urinary incontinence was detected and may result from overcorrection of the apical axis by the mesh. This may vary according to mesh design and placement technique (2).

The need to judiciously select the patients who are good candidates to undergo a mesh repair is obvious as it is not free from undesired effects. However, urologists are encouraged to pursue surgical expertise involving these innovative options as there is a continuous tendency to improve mesh designs and biomaterials.

References

Dr. Ricardo Miyaoka
State University Campinas
Campinas, SP, Brazil
E-mail: rmiyaoka@uol.com.br

Solifenacin may improve sleep quality in patients with overactive bladder and sleep disturbance
Takao T, Tsujimura A, Yamamoto K, Fukuhara S, Nakayama J, Matsuoka Y, Miyagawa Y, Nonomura N
Department of Urology, Osaka University Graduate School of Medicine, Suita, Japan
Urology. 2011; 78: 648-52

Objective: To examine the effect of solifenacin for not only overactive bladder symptoms but also sleep disturbance. Nocturia and urgency are independent factors for sleep disturbance.

Methods: Fifteen male patients with overactive bladder symptoms and sleep disturbance were enrolled in this study. The overactive bladder symptoms score (OABSS) and Athens insomnia scale (AIS) were used as a subjective questionnaire for overactive bladder symptoms and insomnia. The Activwatch-16 (Mini-Mitter-Respironics, Inc., Bend, OR) was used as an objective measurement tool for insomnia. Total sleep time, sleep efficiency, sleep latency, wake-after-sleep onset, and number of awakenings were measured by the Activwatch. We evaluated the changes of each parameter before and 8 weeks after the administration of solifenacin. Statistical comparisons before and after the administration were made using the Wilcoxon signed-rank test. To examine the relation between OABSS and AIS, Spearman’s testing was used for correlations between independent variables and P < 0.05 was considered statistically significant.

Results: Total OABSS and total AIS were significantly improved after administration of solifenacin. The cat-
egories of urgency and nocturia in OABSS and the categories of awakening during the night and sleep quality in AIS were also significantly improved. The Actiwatch study showed that total sleep time and sleep efficiency were significantly improved. The decrease of AIS was significantly correlated with the decrease of urgency ($\rho = 0.635$, $P = 0.0175$) but not with nocturia.

Conclusion: The treatment of urgency by solifenacin may improve not only overactive bladder symptoms but also sleep disturbance.

Editorial Comment

In this interesting report by Takao et al. they objectively assess the impact of solifenacin on sleep disturbance in male patients suffering from OAB symptoms. They used an electronic simple device (Actiwatch) for 1 week before and after treatment and validated questionnaires to assess the effects of a daily drug use of 5 mg for 8 weeks.

Results confirmed an improvement in urgency and nocturia. A significant decrease in awakenings during the night and an improvement in quality of sleep were also detected.

Although multifactorial sleep disturbance can be at least partially deteriorated by nocturnal frequency, and therefore improving bladder capacity, decreasing afferent sensibility and night time urine overproduction are targets to be aimed at. In order to obtain more consistent data, prospective randomized placebo controlled studies and head-to-head comparison with other antimuscarinic agents are warranted.

Dr. Ricardo Miyaoka  
State University Campinas  
Campinas, SP, Brazil  
E-mail: rmiyaoka@uol.com.br

GERIATRIC UROLOGY

Low risk prostate cancer in men ≥ 70 years old: To treat or not to treat
Urology Service, Department of Surgery, Walter Reed Army Medical Center, Washington, CD 20307, USA  
Urol Oncol. 2011 Aug 25. [Epub ahead of print]

Objectives: Prostate cancer (CaP) in the aging male will become an increasingly important and controversial health care issue. We evaluated the outcomes between a variety of treatments for low-risk CaP in patients 70 years of age and older.

Methods and Materials: A total of 3,650 men diagnosed with CaP between 1989 and 2009 were identified in the Center for Prostate Disease Research database to be 70 years of age or older at time of diagnosis. Of these patients, 770 men met the D’Amico criteria ([13]) for low-risk disease and were treated with radical prostatectomy, external beam radiation therapy, or watchful waiting. Cox proportional hazard models were used to compare clinicopathologic features across treatment groups. Kaplan-Meier analysis was used to compare biochemical recurrence-free, progression-free, and overall survival.

Results: Of the 770 patient cohort, 194 (25%) chose radical prostatectomy, 252 (33%) chose external beam radiation therapy, and 324 (42%) were initially managed by watchful waiting with 110 (34%) of this subset ultimately undergoing secondary treatment. The median follow-up was 6.4 years. There were no significant
differences in distributions of race/ethnicity, number of medical comorbidities, or clinical stage across the
treatment groups. Patients managed on watchful waiting without secondary treatment had the poorest overall
survival on Kaplan-Meier analysis (P = 0.0001). Additionally, multivariate analysis confirmed this result for
watchful waiting without secondary treatment as being a statistically significant predictor of overall mortality
(HR 1.938, P = 0.0084).

Editorial Comment

There are clearly multiple biases confounding the results presented in this series as recognized by
authors. Considering the study limitations, disease specific survival would limit confusing related to age
and co-morbidities and is not informed in the article. However, Kaplan-Meier biochemical recurrence-free
survival curves across treatment groups failed to achieve statistical significance (P = 0.08), envisaging similar
disease specific survival across analyzed groups.

Furthermore, given the relatively short follow up time of watchful waiting (WW) without secondary
treatment group - median (range) 4.3 (0.8–16.6) years, an expressive cancer specific mortality is not expected
for patients genuinely presenting D’Amico criteria for low-risk disease (stage T1-2a, Gleason score ≤ 6, and
PSA < 10 ng/mL).

On multivariable cox proportional hazards model predicting overall mortality, age at diagnosis, number
of comorbidities and WW with no secondary treatment were the only statistically significant variables. Adds
to that the fact that the mean age at diagnosis was lower in the primary RP group (72.2 ± 1.9) compared with
the EBRT (74.1 ± 3.1), WW (75.7 ± 3.8), and WW with secondary treatment (74.5 ± 3.6) groups (P < 0.0001).

Last but not least, while important information such as the detailed protocol for those under WW
was not described (number of cores per biopsy, number of biopsies, etc), neither the number of patients who
despite disease progression kept under WW, it is fundamental to highlight that most of the described patients
in this study present performance for active surveillance rather than WW. In this regard, treatment indication,
timing and intent have different endpoints being symptoms, late and palliative for WW and biopsy, early and
curative for active surveillance, respectively.

Certainly, most of these patients will not likely progress to the point of metastases, or cancer-specific
death before they die of another cause if under well conducted and more stringent active surveillance protocol
compared to WW.

Dr. Leonardo Oliveira Reis
Assistant Professor of Urology
University of Campinas, Unicamp
Campinas, São Paulo, Brazil
E-mail: reisleo@unicamp.br
Margel D, Alkhateeb SS, Finelli A, Fleshner N (Division of Urology, Department of Surgical Oncology, Princess Margaret Hospital, University Health Network, Toronto, Ontario, Canada). Urology. 2011; 78: 848-54

Objective: Bacille Calmette-Guérin (BCG) is recommended as adjunctive therapy among patients with high-risk nonmuscle-invasive bladder cancer (BC). Given that immune response is attenuated with age, we set out to determine the impact of age on response to BCG.

Materials and Methods: We searched our prospective bladder information system and limited our search to patients with incident BC completely resected at transurethral resection (TUR) who completed a full induction course of BCG. We then analyzed the impact of age on outcome. Age was analyzed both dichotomously (greater or less than 75 years) as well as by 10-year increments. The main outcomes were recurrence or progression-free survival. Log-rank and multivariable Cox proportional-hazard analyses, adjusting for clinical and pathologic features (age, multifocality, pathologic stage, grade and associated carcinoma in situ, maintenance, and restaging) were used.

Results: This cohort included 238 patients. Baseline parameters were similar aside from tumor number. Progression-free survival differed between age groups when examined either dichotomously or via 10-year increments. The 2-year progression-free survival was 87% among patients < 75 years vs 65% in patients > 75 years (log rank P < 0.001). An age-dependent trend was noted when analyzed by 10-year increment (log-rank for trend P = 0.011). On multivariable analysis, age was an independent risk factor for progression (HR = 2.9, 95% CI 1.7-4.9). Recurrence-free survival was similar among age strata.

Conclusion: We demonstrated that advanced age is associated with higher progression rates despite BCG. The care of BC in the elderly population is of increasing concern and should be addressed in a prospective clinical study.

Editorial Comment

The only independent risk factor for progression in this cohort was age (≥ 75 years vs < 75 years) with a HR of 2.1 (95% CI 1.7-4.9), and maintenance therapy resulted in a statistically significant decrease risk of progression with a HR of 0.8 (95% CI .92-.64). Maintenance therapy significantly reduced the risk of recurrence in patients younger than 75 (HR 0.76; 95% CI .93-.60) as well as those older than 75 (HR 0.86; 95% CI .99-.60).

Progression was associated with age, even after controlling for BCG maintenance and re-resection in a very homogenous cohort where all patients had newly diagnosed bladder tumors (primary presentation), and that completed a full induction course of intravesical BCG, the only clinically used adjuvant therapy known to decrease progression. However data should be viewed with caution given the retrospective design, the unavoidable selection bias and the relatively small cohort.

It was previously suggested that elderly are more commonly exposed to statins and fibrin clot inhibitors (aspirin or coumadin); these exposures are known to alter BCG response. On the other hand, a worse pathophysiology could not be excluded in elderly and was previously proposed by others, although these studies are also deemed to selection bias (1).

Future studies are necessary to confirm these findings and to optimize cancer treatment of elderly.
Reference

Dr. Leonardo Oliveira Reis
Assistant Professor of Urology
University of Campinas, Unicamp
Campinas, São Paulo, Brazil
E-mail: reisleo@unicamp.br

PEDIATRIC UROLOGY

Improved survival with lymph node sampling in Wilms tumor
Zhuge Y, Cheung MC, Yang R, Kontiaris LG, Neville HL, Sola JE
Division of Pediatric Surgery, DeWitt Daughtry Family Department of Surgery, University of Miami Miller School of Medicine, Miami, Florida, USA
J Surg Res. 2011; 167: e199-203

Objective: We sought to determine the impact of number of lymph nodes examined on survival for Wilms tumor (WT).

Methods: Data from the Surveillance, Epidemiology, and End Results and Florida Cancer Data System were queried for patients < 20 years of age with WT.

Results: Of 1805 WT patients, 1340 had lymph node (LN) data available following surgery. The mean age for the cohort was 3.3 ± 2.8 y. Most patients were White (78%), and non-Hispanic (78%). A total of 297 patients (22%) had 0 LN sampled, while 697 (52%) had 1-5 LN, 210 (16%) had 6-10 LN, and 136 (10%) had > 10 LN. Overall 5-y survival was 91%. By univariate analysis, 5-y survival was significantly lower for patients with 0 LN sampled (87% versus 91% 1-5 LN; 93% 6-10 LN; 95% > 10 LN, P = 0.005). Multivariate analysis confirmed a survival advantage for patients having 1-5 LN (HR 0.600, P = 0.016), 6-10 LN (HR 0.521, P = 0.048), and > 10 LN (HR 0.403, P = 0.039) compared with patients with 0 LN examined.

Conclusion: Failure to biopsy lymph nodes for WT patients not only increases the risk of local recurrence due to understaging and inadequate adjuvant therapy, but is also an independent prognostic indicator of lower survival.

Editorial Comment
The authors’ use data from two large population based cancer registries in order to determine the impact of lymph node sampling on overall survival for pediatric Wilms tumor patients. Adequate data was found on 1340 patients. Patients were divided into groups on the basis of their lymph node sampling. 22% of patients had no lymph nodes sampled; 52% had 1-5 lymph nodes; 16% had 6-10 lymph nodes; and 10% had greater than 10 lymph nodes sampled. On multivariate analysis they found statistically significant survival advantage for those patients who had lymph nodes sampled versus those who did not. This advantage increased among groups with greater numbers of lymph nodes sampled.

While review of cancer registries to obtain this kind of information in a retrospective fashion always has inherent flaws, the large number of patients and multivariate analysis would certainly suggest benefit...
from lymph node sampling. As the authors concede, it is difficult to know whether the survival advantage is secondary to under-staging, resulting in inadequate adjuvant therapy, or if there is improved regional disease control or both. In either case, pediatric urologists and surgeons who care for these children, as well as the pathologists that they work, with should be cognizant of such data when operating on these patients and reviewing their specimens.

Dr. M. Chad Wallis  
Division of Pediatric Urology  
University of Utah  
Salt Lake City, Utah, USA  
E-mail: chad.wallis@hsc.utah.edu

Are stone protocol computed tomography scans mandatory for children with suspected urinary calculi?  
Johnson EK, Faerber GJ, Roberts WW, Wolf JS Jr, Park JM, Bloom DA, Wan J  
Department of Urology, University of Michigan Medical Center, Ann Arbor, Michigan 48109-5330, USA  
Urology. 2011; 78: 662-6

Objective: To examine the clinical utility of noncontrast-enhanced computed tomography (NCCT) in pediatric patients with urolithiasis who progressed to surgery. Although NCCT is routine for the evaluation of adult patients with suspected urolithiasis, its routine use in the pediatric population is tempered by concern about radiation exposure.

Methods: We conducted a retrospective chart review of all pediatric patients who had undergone surgery for urinary stones from 2003 to 2008 at our institution. The imaging modalities used, surgery type, stone composition, 24-hour urinalyses, and relevant predisposing conditions were characterized.

Results: A total of 42 pediatric patients (24 males and 18 females) were treated during the 6-year period. The average age was 11.3 ± 5.3 years (range 2.7 - 25.4), and the most common treatment modalities were shock wave lithotripsy (28%) and ureteroscopy (22%). A discernible risk factor or cause of urolithiasis was absent in 21 patients (47%). A review of imaging studies found 38 with stones visible on ultrasonography and/or abdominal plain film. A total of 21 patients underwent NCCT, in addition to ultrasonography and/or abdominal plain film. Of these, only 5 patients required NCCT for the diagnosis or management of their stone.

Conclusion: Nearly 90% of pediatric patients treated for symptomatic urolithiasis could have completed their evaluation and treatment without undergoing NCCT. For children who present with signs and symptoms suggesting urinary calculi, an initial evaluation and imaging with ultrasonography and abdominal plain film might suffice, avoiding the radiation of NCCT.

Editorial Comment  
While non-contrast CT scans have become the gold standard for imaging of urinary tract stones in the adult population, legitimate concerns have been raised regarding the widespread use of CT scans in the pediatric population. These authors performed a retrospective review of their pediatric stone patients over a five year period of time to determine the usefulness of CT scans compared with ultrasound and/or KUB. They were able to identify 42 patients during the study period and found that 90% of the stones were visible on ultrasound and/or KUB.
This study brings to light, the importance of using clinical judgement when evaluating children with suspected stone disease. By starting with an ultrasound and KUB first, the vast majority of children can be spared significant radiation exposure. One can always fall back to CT scan in those cases where the initial imaging studies are indeterminate.

Dr. M. Chad Wallis  
Division of Pediatric Urology  
University of Utah  
Salt Lake City, Utah, USA  
E-mail: chad.wallis@hsc.utah.edu