International Braz J Urol
Vol. 34 (3):372-393, May - June, 2008

UROLOGICAL SURVEY

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STONE DISEASE

Treatment of large impacted proximal ureteral stones: a prospective randomized comparison of percutaneous antegrade ureterolithotripsy versus retrograde ureterolithotripsy

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J Endourol. 2008; 22: 913-7

Purpose: We compared the safety and efficacy of percutaneous antegrade ureterolithotripsy with retrograde ureterolithotripsy for large impacted proximal ureter stones in a prospective randomized manner.
Materials and Methods: A total of 91 patients with large impacted proximal ureteral stones, defined as stones > 1 cm in size located between the ureteropelvic junction and the lower border of the fourth lumbar vertebra, were prospectively randomized for antegrade (44) or retrograde (47) ureterolithotripsy. Failure of the procedure (conversion to an open procedure), intraoperative and postoperative morbidity, operative time, hospital stay, stone clearance at discharge home, and follow-up were analyzed in each group.
Results: The main complications were bleeding (2.3%; 1 of 43) for the antegrade procedure and ureteral injury (2.3%; 1 of 44) for the retrograde procedure. Percutaneous antegrade ureterolithotripsy was associated with longer operative times (75.4 ± 11.8 v 30.6 ± 7.8 minutes; $P < 0.001$), longer hospital stay (6.3 ± 0.5 v 2.1 ± 0.4 days; $P < 0.001$), and a longer interval to return to normal activities (7.8 ± 0.7 v 2.7 ± 0.6 days; $P < 0.001$). Nevertheless, the percutaneous antegrade procedure had a higher stone-free rate both at discharge home (95.3% v 79.5%; $P = 0.027$), and 1 month post-procedure (100% v 86.4%; $P = 0.026$).
Conclusions: Percutaneous antegrade ureterolithotripsy is a valuable treatment modality for impacted proximal ureteral calculi larger than 1 cm, and achieves higher stone-free rates than those of retrograde ureteroscopy with holmium:YAG laser lithotripsy. The drawbacks of the antegrade procedure are longer operative time and hospital stay.

Editorial Comment

This study reported higher success with antegrade versus retrograde ureteroscopy for large proximal ureteral stones. The authors should be commended for a well-executed randomized clinical trial that addresses an important question. However, the addition of flexible ureteroscopy to their retrograde approach may have changed the outcome.

The authors did not utilize flexible ureteroscopy during their retrograde approach - this might impact the stone-free success rate. It would have been helpful to report the size and location of the residual stones - if indeed they were fragments that had migrated to the kidney, these would have been possible to address with the addition of flexible ureteroscopy and stone retrieval. Similarly, flexible ureteroscopy may have facilitated reaching the stone in the 6% of patients who failed the retrograde approach.

The authors did not utilize flexible nephroscopy for their antegrade approach. This might have allowed the use of a lower pole access, with subsequent lower morbidity (pain, hospital stay, return to normal activities). It would be useful to try to establish predictive factors for failure of the retrograde approach - one might hypothesize that male gender, more proximal location, and high grade obstruction would predispose to either stone migration of difficulty accessing the stone. Lastly, one might consider the use of devices to prevent stone migration, such as the Boston Scientific Stone Cone, Cook N-Trap or PercSys Accordion in the setting of large proximal ureteral stones.

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Impact of percutaneous nephrolithotomy on estimated glomerular filtration rate in patients with chronic kidney disease

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Background and Purpose: We investigated the impact of percutaneous renal procedures on estimated glomerular filtration rate (GFR) of patients with chronic kidney disease (CKD). Patients and Methods: The GFRs of adult patients were calculated using the Modification of Diet in Renal Disease formula, and the patients were staged according to the Kidney Disease Outcome Quality Initiative CKD classification system. The study included 185 patients with preoperative GFR values less than 60 mL/min/1.73 m(2). The impact of percutaneous nephrolithotomy (PCNL) on GFR was analyzed by comparing the preoperative GFR with the GFR before discharge and at postoperative month 3.
Results: Patients with CKD had a significant increase in the GFR after the procedure. In postoperative month 3, the mean GFR was more than 60 mL/min/1.73 m(2) in 25% of the patients with CKD and less than 60 mL/min/1.73 m(2) in 75%. While all patients with stage 5 CKD improved to better stages, some other patients' conditions declined to stage 5 from better stages at the end of postoperative month 3. No patient needed dialysis. The presence of urinary tract infections tended to affect GFR negatively. Conclusion: Estimated GFR, as a better indicator of renal function, is significantly affected by the PCNL procedure. While significant improvement was observed in late-stage patients with CKD, unexpected deterioration could occur in patients at earlier stages.

Editorial Comment

The investigators studied a challenging patient population - the high rate of staghorn calculi and high rate of multiple accesses suggest a complex stone burden. This certainly may account for the high complication rates, specifically related to transfusion, sepsis and death. Alternatively, it is possible that the CKD could impact platelet function, baseline hemoglobin, cell-mediated immunity and humoral defenses. It is possible that the higher rate of urinary leak could be related to the thinned renal parenchyma in CKD. Interestingly, number of renal accesses or presence of a solitary kidney did not predict a negative outcome on GFR. Intuition would suggest that in these high risk patients, a greater reliance on flexible ureteroscopy and nephroscopy to decrease the need for multiple accesses might be warranted. One can conclude that GFR often improves after PCNL, however occasionally renal function will worsen. Patients should be counseled on the 25% chance of improvement and 4% risk of deterioration.

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ENDOUROLOGY & LAPAROSCOPY

Comparison of open and laparoscopic nephrectomy in obese and nonobese patients: outcomes stratified by body mass index

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Purpose: Laparoscopic radical nephrectomy has been accepted as the preferred management for low stage renal masses not amenable to partial nephrectomy. Early in the mid 1990s several studies suggested that obesity should be a relative contraindication to laparoscopy. We present our surgical outcomes and complications in patients undergoing open and laparoscopic nephrectomy, stratified by body mass index. Materials and Methods: We retrospectively identified 88 patients, of whom 43 underwent open nephrectomy and 45 were treated laparoscopically. All patients were stratified by body mass index to compare multiple perioperative end points and pathological outcomes of laparoscopy.
Results: Overall our data showed that compared to open nephrectomy laparoscopic nephrectomy resulted in statistically significant lower estimated blood loss (147.95 vs. 640.48 cc, $p < 0.0002$), operative time (156.11 vs. 198.95 minutes, $p < 0.003$) and hospital stay (3.7 vs. 5.9 days, $p < 0.004$). When stratified by body mass index less than 25, 25 to 29.9 and 30 kg/m(2) or greater, there was a statistically significant difference in estimated blood loss and hospital stay that was in favor of the laparoscopic approach in each body mass index category. Operative time did not show a statistical difference in the subgroups but all laparoscopic procedure times were shorter than open procedure times in each body mass index category. When patients with a body mass index of greater than 30 kg/m(2) were further subgrouped into 35 kg/m(2) or greater and 40 kg/m(2) or greater, there was a statistically significant difference in estimated blood loss and hospital stay that was again in favor of the laparoscopic method.
Conclusions: Laparoscopic radical nephrectomy is technically more challenging as body mass index increases due to many factors but our data show that it is feasible and safe in experienced hands. Laparoscopy appears to result in perioperative outcomes that are superior to those of open nephrectomy in this high risk population with a complication profile that is equivalent to that of the open method for each stratified body mass index category.

Editorial Comment

Historically, obesity has been considered a relative contra-indication for laparoscopic surgery. Recently, experienced laparoscopic surgeons have demonstrated the benefits of laparoscopic approach, particularly on this population of patients.

The authors have demonstrated on this retrospective study that obese patients undergoing laparoscopic radical nephrectomy had less blood loss and decreased operative time than the cohort open nephrectomy patients. Moreover, the increase in operative time for the laparoscopic approach was calculated as 7.56 minutes per BMI in average, while the mean operative time difference was 38.9 minutes less than an open procedure. In conclusion, the laparoscopic approach has been shown to offer several advantages especially to the obese population.

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The impact of minimally invasive techniques on open partial nephrectomy: a 10-year single institutional experience

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Purpose: With the advent of minimally invasive, nephron sparing surgical options we hypothesized that the indications, perioperative parameters and complication rates of open partial nephrectomy may have changed significantly during a 10-year period. Materials and Methods: Open partial nephrectomy was compared during 2, 3-year periods. From 1994 to 1996 (before laparoscopic partial nephrectomy, cryoablation and radio frequency ablation) 208 cases were compared vs. 347 open partial nephrectomies performed from 2004 to 2006 with regard to indications, perioperative parameters and complication rates.
Results: There were no significant differences between the groups with regard to age (59 vs. 58 years), gender (65.5% vs. 65.0% male) and tumor size (3.9 vs. 3.6 cm). Tumors removed in the recent era were more often in a solitary kidney (40.0% vs. 15.6%) and centrally located (55.6% vs. 37.3%), and pathological evaluation more often revealed higher grade (Fuhrman 3 or 4) (43.1% vs. 27.8%, each $p < 0.0001$). Despite increased technical difficulty ischemia time in the more recent era was shorter (19.1 vs. 40.6 minutes, $p = 0.0000$), and the urological and overall complication rates were statistically similar (7.5% vs. 8.9%, $p = 0.6071$ and 19.1% vs. 14.4%, $p = 0.1723$, respectively).
Conclusions: At a tertiary referral center the introduction of minimally invasive, nephron sparing surgical techniques has drawn away less complicated, less aggressive tumors, reserving the bulk of more complicated central tumors for open partial nephrectomy without decreasing the total number of open cases. With experience these more difficult central tumors are being successfully treated with decreased warm ischemia time and complication rates that are comparable to those in historical series.

Editorial Comment

This retrospective study demonstrated that the outcomes of the management of small renal masses in a high volume tertiary care institution were consistent when oncological principles were followed despite the different minimally invasive techniques were applied to treat these masses.

The open partial nephrectomies were reserved to manage more complicated central masses, while the laparoscopic approach allowed small masses to be managed with nephron-sparing techniques, including ablative technology.

The overall number of open procedures remained the same, as well as the level and number of complications for both open and minimally invasive approaches.

Once again, the authors demonstrated that when the basic oncological principles are followed and a systemic protocol evaluates patients for complex minimally invasive surgery, experienced surgeons could attain comparable results as historically established open surgery in a high volume tertiary care institution.

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IMAGING

The incidental adrenal mass on CT: prevalence of adrenal disease in 1,049 consecutive adrenal masses in patients with no known malignancy

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AJR, Am J Roentgenol 2008; 190: 1163-1168

Purpose: The purpose of our study was to determine the nature and prevalence of adrenal lesions identified on CT in patients with no known malignancy.
Materials and Methods: A computer search of abdominal CT reports using the term "adrenal" was performed in 65,231 consecutive patients with examinations performed from January 2000 to December 2003. An adrenal mass was identified in 3,307 (5%) patients. Patients with no known malignancy and no suspicion for a hyperfunctioning adrenal mass were further isolated. Nine hundred seventy-three patients with 1,049 adrenal masses fulfilled the study criteria. The nature of each lesion was determined by histopathology; imaging characterization with CT, MRI, or washout; a minimum of 1 year of stability on follow-up imaging; or clinical follow-up of at least 2 years.
Results: One thousand forty-nine adrenal masses were characterized with the following methods: histopathology (n = 12), imaging characterization (n = 909), imaging follow-up (n = 87), and clinical follow-up (n = 41). There were 788 adenomas constituting 75% of all lesions. There were 68 myelolipomas (6%), 47 hematomas (4%), and 13 cysts (1%). Three pheochromocytomas (0.3%) and one cortisol-producing adenoma (0.1%) were found incidentally. One hundred twenty-eight lesions (12%) were presumed to be benign by imaging or clinical stability. No malignant adrenal masses were found, even among the 14 patients who later developed malignancy elsewhere.
Conclusions: In 973 consecutive patients with an incidental adrenal mass and no history of cancer, no malignant lesions were identified. Adenomas (75%) and myelolipomas (6%) were the most common lesions.

Editorial Comment

The authors report very large retrospective study regarding the prevalence of adrenal incidentalomas on CT studies performed in patients without cancer. Actually this publication encompasses a larger number of patients when compared with previous study published by the same authors where all of the incidentally detected adrenal masses with a CT attenuation of equal or less than 10 HU were benign (1). Adrenal incidentalomas were classified almost exclusively by classical and well known imaging criteria (unenhanced and enhanced CT studies and chemical-shift MR imaging). Although the authors reports that only 1% of the adrenal masses of this large series was histological evaluated , their criteria has been proved to be effective by other large series where histological confirmation were obtained(2,3). As radiologic experience accumulates, the tendency to accept strict and specific imaging features for adequate characterization of adrenal adenomas continues to grow. Large series with histological confirmation, large number of patients without histological confirmation but with prolonged clinical and radiological follow-up continues to strength the role of imaging features in the evaluation of adrenal adenomas. In many centers, radiologic characterization of adrenal adenomas is accepted similarly to the radiologic characterization of other adrenal incidentalomas such as cysts, pseudocysts, hematomas and mielolipomas .Small, < 3 cm in diameter, homogeneous and well defined adrenal mass with CT attenuation of equal or less than 10 HU or showing more than 20% of loss of signal intensity on chemical-shit MR imaging should be considered as an adrenal adenoma.

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Endorectal and dynamic contrast-enhanced MRI for detection of local recurrence after radical prostatectomy

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AJR, Am J Roentgenol 2008; 190:1187-1192

Objective: The objective of our study was to evaluate the sensitivity and specificity of endorectal MRI combined with dynamic contrast-enhanced MRI to detect local recurrence after radical prostatectomy.
Materials and Methods: A total of 51 patients who had undergone radical prostatectomy for prostatic adenocarcinoma 10 months to 6 years before underwent a combined endorectal coil MRI and dynamic gadolinium-enhanced MRI before endorectal sonographically guided biopsy of the prostatic fossa. The MRI combined with MR dynamic imaging results were correlated with the presence of recurrence defined as a positive biopsy result or reduction in prostate-specific antigen level after radiation therapy.
Results: Overall data of 46 (25 recurred, 21 nonrecurred) out of 51 evaluated patients were analyzed. All recurrences showed signal enhancement after gadolinium administration and, in particular, 22 of 24 patients (91%) showed rapid and early signal enhancement. The overall sensitivity and specificity of MR dynamic imaging was higher compared with MRI alone (88%, [95% CI] 69–98% and 100%, 84–100% compared with 48%, 28–69% and 52%, 30–74%). MRI combined with dynamic imaging allowed better identification of recurrences compared with MRI alone (McNemar test: chi-square1 = 16.67; p = < 0.0001).
Conclusion: MRI combined with dynamic contrast-enhanced MRI showed a higher sensitivity and specificity compared with MRI alone in detecting local recurrences after radical prostatectomy.

Editorial Comment

The authors of this manuscript confirms previous publications that has been shown that endorectal magnetic resonance imaging studies are of value for adequate characterization of local recurrence of prostate cancer after radical prostatectomy . Recurrent prostate cancer appears on dynamic contrast magnetic resonance imaging as an abnormal soft tissue mass with faster and stronger contrast enhancement and contrast washout. As we know the management of the patient with PSA recurrence after radical prostatectomy is debatable. In our daily practice, urologists and radiotherapists only sporadically require imaging in patients suspected of prostate cancer recurrence. Unless patient presents with positive digital rectal examination, they usually rely on

PSA kinetics. Even when anastomotic biopsies document only benign tissue, the study of PSA doubling time is usually characteristic of the coexistence of residual cancerous cells. Local recurrence of prostate cancer is usually clinically suspected based on PSA kinetics and is usually characterized by a prolonged doubling time (>10 months) in a patient with a Gleason score of 2–7, a positive surgical margin, and absence of seminal vesicles or lymph nodes involvement. Currently these patients may be treated by means of radiation therapy. In our experience both color Doppler transrectal ultrasound and dynamic contrast enhanced MR, followed by TRUS-guided biopsies are useful modalities for early detection and confirmation of local recurrence of prostate cancer. These modalities however, should be used only when confirmation of local recurrence of prostate cancer is mandatory or in other words will modify the patient's clinical management.

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UROGENITAL TRAUMA

Urethral and bladder neck injury associated with pelvic fracture in 25 female patients

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Purpose: We describe the presentation, diagnostic evaluation, management and outcome of female urethral trauma.
Materials and Methods: All female patients treated at Harborview Medical Center between 1985 and 2001 with urethral injury were identified by International Classification of Diseases 9th revision code. Approval of the Human Subject Division was obtained and patient charts were reviewed. The Urogenital Distress Inventory Short Form, the Incontinence Impact Questionnaire Short Form and the Female Sexual Function Index were sent to the patients.
Results: A total of 25 patients (13 adults, 12 children) with a mean age of 22 years (range 4 to 67) met inclusion criteria. All had pelvic fracture related to blunt trauma. They represented 6% of all female patients treated in the same review period with pelvic fracture. Blood was seen at the introitus in 15 patients and 19 had gross hematuria. Of the injuries 9 were avulsions, 15 were longitudinal lacerations and 1 was not further specified. Primary repair was performed in 21 patients and 4 were treated nonoperatively. There were 5 patients who required secondary procedures including fistula repair in 4 and continent urinary diversion in 1. At a mean followup of 7.3 years (range 1.6 to 14.4) 9 of 21 patients (43%) had moderate or severe lower urinary tract symptoms and 8 of 13 (38%) had sexual dysfunction (FSFI score less than 26.55). Conclusions: Female urethral and bladder neck injury occurs with pelvic fracture, presents with gross hematuria and/or blood at the introitus, and requires operative repair for avulsions and longitudinal lacerations. These patients are at risk for significant sexual and lower urinary tract dysfunction.

Pelvic fracture urethral injuries in girls

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Purpose: Injuries to the female urethra associated with pelvic fracture are uncommon. They may vary from urethral contusion to partial or circumferential rupture. When disruption has occurred at the level of the proximal urethra, it is usually complete and often associated with vaginal laceration. We retrospectively reviewed the records of a series of girls with pelvic fracture urethral stricture and present surgical treatment to restore urethral continuity and the outcome.
Materials and Methods: Between 1984 and 1997, 8 girls 4 to 16 years old (median age 9.6) with urethral injuries associated with pelvic fracture were treated at our institutions. Immediate therapy involved suprapubic cystostomy in 4 cases, urethral catheter alignment and simultaneous suprapubic cystostomy in 3, and primary suturing of the urethra, bladder neck and vagina in 1. Delayed 1-stage anastomotic repair was performed in 1 patient with urethral avulsion at the level of the bladder neck and in 5 with a proximal urethral distraction defect, while a neourethra was constructed from the anterior vaginal wall in a 2-stage procedure in 1 with mid urethral avulsion. Concomitant vaginal rupture in 7 cases was treated at delayed urethral reconstruction in 5 and by primary repair in 2. The surgical approach was retropubic in 3 cases, vaginal-retropubic in 1 and vaginal-transpubic in 4. Associated injuries included rectal injury in 3 girls and bladder neck laceration in 4. Overall, postoperative followup was 6 months to 6.3 years (median 3 years).
Results: Urethral obliteration developed in all patients treated with suprapubic cystostomy and simultaneous urethral realignment. The stricture-free rate for 1-stage anastomotic repair and substitution urethroplasty was 100%. In 1 girl, complete urinary incontinence developed, while another has mild stress incontinence. Retrospectively the 2 incontinent girls had had an associated bladder neck injury at the initial trauma. Two recurrent vaginal strictures were treated successfully with additional transpositions of lateral labial flaps.
Conclusions: This study emphasizes that combined vaginal-partial transpubic access is a reliable approach for resolving complex obliterative urethral strictures and associated urethrovaginal fistulas or severe bladder neck damage after traumatic pelvic fracture injury in female pediatric patients. Although our experience with the initial management of these injuries is limited, we advocate early cystostomy drainage and deferred surgical reconstruction when life threatening clinical conditions are present or extensive traumatized tissue in the affected area precludes immediate ideal surgical repair.

Editorial Comment

The above two articles illustrate the difficulty in diagnosing and managing the complications of female urethral injury from pelvic fracture. Such injuries can occur in up to 6% of all female pelvic fractures. Obviously, life threatening pelvic fractures and associated injuries need to be stabilized and reduced first, as part of traumatic resuscitation.

Female urethral injuries from pelvic fracture are due to severe mechanisms of injury, with many injuries being urethral disruption injuries. Female urethral injuries are mainly bladder neck injuries that extend into the urethra and/or avulsion injuries. Presenting signs of urethral injury are blood at the introitus or gross hematuria. Avulsion injuries are mostly diagnosed upon attempted catheterization. Associated vaginal injury in very common (up to 87%) and ranges from an anterior vaginal wall laceration to circumferential disruption. Despite the above, up to 40% of female urethral injuries are missed at the time of injury. A high index of suspicion is key to making the diagnosis reliably. In the acute setting we advocate immediate repair of the urethral and the vaginal injuries, since if only a supra-pubic tube is placed, the urethra typically obliterates, or urethrovaginal fistula and/or vaginal stenosis results. Bladder neck injuries should also be repaired in the early post injury period (up

to 2 weeks after) in order to prevent subsequent incontinence. Extensive surgical reconstruction is otherwise needed for such patients. If the patient is unstable, repair can often wait a few days until she is stable.

In prepubertal girls, where the pelvis is narrow and space limited, repair of urethral stenoses is very difficult. Often times, a combined vaginal and abdominal approach in needed for successful reconstruction – and often may require a partial or total pubectomy. In such cases, an interposition flap of omentum is important to prevent bladder and bowel herniation.

If the patient is incontinent after injury or repair, the urethra is typically fixed and rigid. In such cases, we have placed a bladder neck artificial sphincter, with good dryness. Unfortunately, the bladder is often too scarred to mobilize the bladder enough to do a bladder neck reconstruction, such as a Kropp or Young Dees Leadbetter

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PATHOLOGY

Partial atrophy on prostate needle biopsy cores: a morphologic and immunohistochemical study

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Am J Surg Pathol. 2008; 32: 851-7

Partial atrophy is the most common benign mimicker of prostate cancer on needle biopsy. Of 3916 prostate needle core biopsy cases received in our consultation service over a period of 3 months (March 1, 2007 to May 31, 2007), 170 cases (4.3%) with partial atrophy were diagnosed as atypical glands by outside pathologists and prospectively identified. We supplemented our material with 108 cases of partial atrophy sent to our consultation service in 2006 from a single institution, which frequently uses a triple cocktail stain [p63, high molecular weight cytokeratin (HMWCK), alpha-methyl acyl-Coa racemase (AMACR)]. The morphologic features of the 278 cases and immunohistochemistry of 236 cases (198 with prostate cocktail and 38 with only basal cell makers) were analyzed. Forty-eight of 278 (17.3%) partial atrophy cases were mixed with postatrophic hyperplasia. Enlarged nuclei were visible in 43/278 (15.5%) cases, with prominent nucleoli seen in 58/278 (20.9%) cases (30 cases associated with nuclear enlargement). Of 198 cases with a prostatic cocktail stain, 48 (24.2%) had a cancer pattern for both basal cells and AMACR (p63-, HMWCK-, and AMACR+), 14 (7.1%) had a cancer pattern for basal cells (p63-, HMWCK-, and AMACR-), 89 (44.9%) had a cancer pattern for AMACR (p63+, HMWCK+, and AMACR+), and 47 (23.7%) had a totally benign pattern (p63+, HMWCK+, and AMACR-). Of the 198 cases using the cocktail stain, 136 (68.7%) had positive basal cell staining. The percentage of basal cells labeled with the combination of p63/HMWCK was: < 5% in 42 (21.2%) cases, 5% to 75% in 58 (29.3%) cases, and > 75% in 36 (18.2%) cases. An additional 38 cases immunostained only for p63 and/or HMWCK was negative in 2 (5.2%) cases, < 5% (13.1%) in 5 cases, 5% to 75% in 19 (50%) cases, and > 75% in 12 (31.6%) cases. In conclusion, partial atrophy is a benign mimicker of adenocarcinoma both as a result of its routine morphologic features and its immunohistochemical profile. Recognition of the classic morphology of partial

atrophy on routine hematoxylin and eosin-stained sections is critical to avoid misdiagnosing partial atrophy as adenocarcinoma.

Editorial Comment

The most common benign lesion that causes difficulty in the differential diagnosis with adenocarcinoma of the prostate is partial atrophy. This lesion was reported in the periodic literature in 1998 (1). Architecturally, partial atrophy consists of crowded glands often with a disorganized growth pattern. In contrast to complete atrophy, which can typically be diagnosed at scanning magnification owing to the presence of well-formed glands with a very basophilic appearance, partial atrophy has pale cytoplasm lateral to the nuclei giving rise to pale staining glands that more closely mimic cancer. Characteristically the basal cells are discontinuous and in some acini may be absent. An additional factor that contributes to the difficulty in distinguishing cancer from partial atrophy is the positivity for AMACR (α-methylacyl coenzyme A racemase) in some acini. In a recent study in our institution, we used the cocktail AMACR+34βE12 for analyzing the immunohistochemistry expression of a total of 727 acini on needle prostatic biopsies corresponding to 324 adenocarcinoma acini, 213 normal acini, and 190 partial atrophy acini. Adenocarcinoma acini showed weak, or strong expression of AMACR in 73/324 (22.5%), and 251/324 (77.5%) acini, respectively; normal acini showed negative, weak, or strong expression in 167/213 (78.4%), 33/213 (15.5%), and 13/213 (6.1%) acini, respectively; and foci of partial atrophy showed negative, and weak expression in 143/190 (75.3%), and 47/190 (24.7%) acini, respectively. No acini in partial atrophy showed strong expression. The distribution of basal cells in partial atrophy was continuous, discontinuous, and absent in 42/190 (22.1%), 104/190 (54.7%), and 44/190 (23.2%) acini, respectively. The absence of basal cells in 44/190 (23.2%) of partial atrophy foci, makes the use of AMACR attractive for the differential diagnosis. No strong positivity was seen in partial atrophy acini, however, the weak positivity seen in approximately 25% of the acini may be a pitfall for the correct interpretation. Furthermore, normal acini may show strong expression of AMACR in approximately 5% of the acini.

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Aberrant diffuse expression of p63 in adenocarcinoma of the prostate on needle biopsy and radical prostatectomy: report of 21 cases

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Aberrant diffuse expression of p63 in prostate carcinoma cells is a rare and poorly understood phenomenon. We studied 19 cases of prostate cancer with aberrant diffuse expression of p63 on needle biopsy and reviewed the subsequent radical prostatectomies in 6 cases. In 19/21 cases, 100% of the cancer nuclei stained intensely for p63, with 70% staining in the remaining 2 cases. Two additional radical prostatectomies with aberrant p63 staining with no needle biopsies available for review were also analyzed. On the hematoxylin and eosin-stained

slides, 19/21 cases (90.5%) showed a distinctive morphology composed predominantly of glands, nests, and cords with atrophic cytoplasm, hyperchromatic nuclei, and visible nucleoli. Needle biopsy cases ranged from Gleason patterns 3 to 5 with tumor identified on one or more cores, ranging from a minute focus to 80% of the core. In all 8 radical prostatectomies p63 positive cancer was present, with in 2/8 cases both p63 positive cancer and usual p63 negative acinar prostate cancer. In all 8 cases, the tumors were organ confined with negative margins and there was no seminal vesicle involvement or lymph node metastasis. The presence of p63 positive atypical glands with an infiltrative pattern and perineural invasion on radical prostatectomy confirmed the needle biopsy diagnosis of carcinoma. Rarely, prostate cancer can aberrantly express diffuse p63 staining in a nonbasal cell distribution leading to the erroneous diagnosis of atrophy or atypical basal cell proliferation. The diagnosis of prostate cancer is based on the morphology and confirmed by the absence of high molecular weight cytokeratin staining and positivity for alpha-methylacyl-CoA racemase in the atypical glands. Pathologists need to be aware of this rare and unusual phenomenon, which is a potential pitfall in prostate cancer diagnosis.

Editorial Comment

Pathologists use immunohistochemistry for the differential diagnosis between adenocarcinoma of the prostate and benign mimickers in difficult cases. The aim is to detect basal cells which excludes adenocarcinoma (1). The most frequently used markers for basal cells is clone 34βE12 (a pool of high-molecular-cytokeratins 1,5,10,11 and 14) and p63. 34βE12 stains the cytoplasm and p63 stains the nucleus of basal cells.

The cases of adenocarcinoma with aberrant expression of p63 studied by Osunkoya et al. is a very important finding. Pathologists need to be aware of this rare and unusual phenomenon, which is a potential pitfall in prostate cancer diagnosis.

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INVESTIGATIVE UROLOGY

Visualization of the neurovascular bundles and major pelvic ganglion with fluorescent tracers after penile injection in the rat

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BJU Int. 2008; 101: 1048-51

Objective: To evaluate whether fluorescent tracers can consistently label the neurovascular bundles (NVBs) and major pelvic ganglion (MPG) after an intracavernosal penile injection, as the reported incidence of

erectile dysfunction (ED) in men after radical prostatectomy (RP) is 55-65% and thus preservation of erectile function, sparing one or both of the NVBs remains one of the most vital factors.
Materials And Methods: Male Sprague-Dawley rats (3 months old) received penile injections (20 microL; seven rats/group) of either deionized water (DW), Fluoro-Gold (FG), Fast-Blue (FB), Fluoro-Ruby (FR) or green fluorescent pseudorabies virus (GF-PRv). The rats were killed at 2, 3 and 14 days after injection and the NVBs and MPG were harvested and placed directly under fluorescence light. Image analysis was done by computer, coupled to a microscope equipped with a digital camera. Each NVB and MPG were analysed for its staining pattern and consistency.
Results: When compared with the FB, FR and GF-PRv rats, the FG-injected rats had better staining of the NVB at 2, 3 and 14 days after injection. Under x200, FG highlighted the axons of the cavernous nerve (CN) and cell bodies (MPG). This indicates that FG injection into the penis induced the strongest CN labelling (positive staining) at 2 and 3 days after injection as compared with FB-, FR- and GF-PRv-injected rats.
Conclusion: FG injection into the penis has consistent retrograde staining of the NVBs and MPG after 3 days. Therefore, we predict that FG could potentially be used to improve the identification of the NVB in other models. However, further studies need to be carried out before these tracers can be used in humans.

Editorial Comment

This is an interesting and promising study where the authors aimed to evaluate whether various tracer substances can consistently label the neurovascular bundles and the major pelvic ganglion after intracavernosal penile injection using the rat as an animal model. The results indicated that injection of fluoro-gold (FG) at the penis induces cell body labeling of neurons at the major pelvic ganglion at 2 and 3 days after the injection. Under fluorescent light, the penile injection of FG before pelvic surgery might help to identify the neurovascular bundles, and therefore, preserve potency after radical prostatectomy, for instances. We hope that it could be transposed to clinical setting soon.

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Oestrogen receptors and their relation to neural receptive tissue of the labia minora

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BJU Int. 2008; 101: 1401-6

Objective: To assess the cellular distributions of oestrogen receptors alpha and beta (ER alpha and ER beta) and neuronal nitric oxide synthase (nNOS) in the labia minora, as knowledge about ER type and function may clarify the role of oestrogens in vaginal scar formation and improve outcomes in female genital surgery.
Subjects and Methods: Labial samples were taken from 10 girls (aged 2-9 years) who underwent surgery for labial fusion. The waste tissue strips obtained were used for immunohistochemical identification of ER alpha and ER beta, and nNOS in the labia minora.
Results: There was ER alpha nuclear staining in the stroma of the labia minora close to the clitoris, and basal and suprabasal in the epidermal cells membrane restricted to superficial sections of the labia minora. ER beta was found in the stroma of the labia minora closer to the clitoris and in superficial sections, in the basal epider-

mal cells membrane and apocrine glandular epithelial cells membrane. There was also ER beta cell membrane staining in the basal and suprabasal epithelial cells and fibroblasts in the lamina propria.
Conclusions: Established ER presence allows the consideration of the introitus of the vagina as a target for oestrogen therapy in various clinical and surgical situations. Continuing elucidation of the immunohistochemistry of this external genital tissue might assist in the development of molecular tools to treat genital abnormalities. Details of this immunohistochemistry may also advance the understanding of the effects of sexual differentiation on the brain and other organ systems.

Editorial Comment

These interesting findings confirm our believe that labia minora and other vulvar tissues are estrogen target structures. It is our practice to administer local estrogen for treating labia minora fusion and other vulvar diseases in pre-pubertal, pre-menopausal and post-menopausal women. Also, the present data enable us to expect a greater estrogen effect when administered vaginally, compared with extravaginal administration, as the authors stated. These findings are of clinical importance in the pathophysiology of age-associated and hormonally associated female genital disorders that include both functional and structural changes.

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RECONSTRUCTIVE UROLOGY

Open surgical repair of ureteral strictures and fistulas following radical cystectomy and urinary diversion

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J Urol. 2008; 179: 1428-31

Purpose: Open surgery after cystectomy can be a challenge. We report the incidence of postoperative urinary diversion-enteric fistula and ureteral strictures in patients undergoing radical cystectomy, and discuss the diagnosis and management of these complications, including our surgical approach to these patients.
Materials and Methods: We preformed a retrospective review of 553 patients undergoing radical cystectomy and urinary diversion for bladder cancer between April 1999 and January 2007. Patients in whom a ureteral stricture or fistula developed were identified by serial laboratory and imaging evaluations. A chart review was preformed to identify symptoms, time to stricture or fistula development, radiological findings, type of diversion, estimated blood loss and whether the original anastomosis was stented. Management and outcomes were assessed.
Results: Of 553 patients reviewed ureteral stricture developed in 41 (7.4%) with a mean followup of 20.2 months (range 1 to 98). Strictures developed in 11% (31 of 272) of the orthotopic ileal neobladder, 2.5% (6 of 236) of ileal conduit and 8% (4 of 45) of Indiana pouch cases. Open repair led to an overall success rate of 87%. Urinary diversion-enteric fistula developed in 12 (2.2%) of the 553 patients with a mean followup of 28.4 months (range 3 to 94), all of whom had undergone orthotopic neobladder diversion. No patient had recurrence after surgical repair of the fistula.

Conclusions: Open revision remains the gold standard management for ureteral strictures and urinary diversion-enteric fistulas occurring after radical cystectomy. The addition of the chimney modification to the orthotopic neobladder facilitates surgical repair.

Editorial Comment

Distal and anastomosis uretral strictures occurring after a cystectomy, following a myriad of diversion techniques, is not uncommon. Most likely these problems should be performed primarily in the old fashion way, that is open. In the hands of an experienced endoscopic surgeon the endoureterotomy using a laser can reach a 25% success rate in selected cases as Msezane et al. demonstrated in their retrospective analyzed data.

Sometimes the blood parameters are less sensitive than the follow-up using ultrasound for the upper urinary tract; therefore, we perform both (1). Similar to the presented data we saw the incidence of strictures in ureters in different types of diversion. In addition to those who underwent previous radiation, the placing of an 8F double-J intra-operative might help to reduce the implantation stenoses further (2). Early surgery in our clinic usually involves the re-implantation of both ureters at the same time which we believe helps to avoid further complications. The occurrence of fistulas as reported is a rare case but might be handled with tissue glue if the fistula is small enough before an open surgery is performed (3). The possibilities are more extensive for the majority of cases, however, in the case of urinary diversions, we should be ready to perform open surgery for both cases - strictures and fistulas.

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Randomized comparative study between buccal mucosal and acellular bladder matrix grafts in complex anterior urethral strictures

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Purpose: Urethral strictures have been a reconstructive dilemma for many years due to the limited availability of tissue substitutes and incidence of recurrence. Buccal mucosal grafts have been a favored material in instances where penile skin is unavailable due to its durability and excellent graft survival. Recently collagen based matrices derived from the bladder have been used successfully in patients with stricture disease and hypospadias.

We performed a randomized comparative study to assess the outcome of the acellular bladder matrix compared to buccal mucosa in patients with complex urethral strictures.
Materials and Methods: Human demineralized bone matrix, obtained from cadaveric donors, was processed and prepared for use as an off-the-shelf material. Thirty patients with stricture 21 to 59 years old (mean 36.2) were enrolled and assessed using a standard protocol. The stricture length ranged from 2 to 18 cm (mean 6.9), of which 11 patients had bulbar, 7 had pendulous and 12 had combined bulbo-pendulous strictures. Of the 30 patients, 7 had received no previous intervention while the remaining 23 had undergone 1 to 7 procedures (mean 1.9). All patients were randomized and alternatively assigned to receive either buccal mucosa or demineralized bone matrix and underwent an onlay procedure.
Results: All patients except 2 who were lost during followup were followed for 18 to 36 months (mean 25). In patients with a healthy urethral bed (less than 2 prior operations), the success rate of buccal mucosa grafts (10 of 10) was similar to the bladder matrix grafts (8 of 9) in terms of patency. In patients with an unhealthy urethral bed (more than 2 prior operations), only 2 of 6 patients with a bladder matrix graft were successful, whereas all 5 patients with a buccal mucosa graft had a patent urethra. Postoperative uroflowmetry showed significant voiding improvement in both groups. Histology of the graft biopsies showed normal urethral tissue characteristics.
Conclusions: This study demonstrates that the use of acellular bladder matrix is a viable option for urethral repair. Demineralized bone matrix as an off-the-shelf biomaterial achieves the best results in patients with a healthy urethral bed, no spongio-fibrosis and good urethral mucosa.

Editorial Comment

In recent publications, we have seen the reporting of various off-shelf materials for urethral reconstruction (1,2). Different to the previous publications, the authors compared their shelf material "acellular bladder matrix" against the golden standard of the buccal mucosa graft.

As we all know in the almost virgin wound bed, the first approach always seems to work--if performed correctly. Therefore we should all keep in mind that the first approach might be the most important in order to have a good outcome in the long term (3). In those cases where more than two previous surgeries were performed, the best material still seems to be the buccal mucosa. From this well-designed study, we can learn that as long as we do not have the perfect matrix, we can use one off-shelf in the first run thereby avoiding the additional surgeries needed to harvest buccal mucosa with a similar outcome within a follow-up of mean two years. With the patient we have to make the decision if they are already ready to use this material in the first or second approach (4).

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UROLOGICAL ONCOLOGY

Perineal salvage prostatectomy for radiation resistant prostate cancer

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Eur Urol. 2007; 51: 1565-71; discussion 1572

Objectives: No data are available on the use of perineal prostatectomy for salvage treatment of local recurrent prostate cancer after radiotherapy. Here we report on the clinical aspects and follow-up of salvage perineal prostatectomy.
Materials and Methods: Twenty-seven patients underwent a perineal salvage prostatectomy from 1997-2005 for biopsy-proven local recurrent prostate cancer after external beam (n = 22) or brachyradiotherapy (n = 5). Staging included physical examination, prostate-specific antigen (PSA), transrectal ultrasound, computed tomography scan, and bone scan.
Results: Mean PSA before surgery was 8.6 ng/mL (± 2.8 ng/mL). Comparing clinical staging with final pathologic staging after salvage perineal prostatectomy showed a 67% clinical understaging. Mean blood loss was 677 cc, and perioperative morbidity consisted of prolonged anastomotic leakage (n = 8), urosepsis (n = 3), prolonged hematuria (n = 3), urinary retention (n = 2), and rectal perforation (n = 1). One patient died during the postoperative course because of urosepsis and endocarditis. At an interval of at least 12 mo after surgery, 37% (10 of 27) and 7% (2 of 27) of patients reported normal continence and erectile function, respectively. Five patients died during a mean follow-up of 43 mo; two patients died of prostate cancer. Five-year biochemical recurrence-free survival was 31% (95% CI, 25-42%). In a multivariate Cox regression analysis the serum PSA and PSA doubling time (PSADT) at the time of surgery were the best predictors of biochemical recurrence-free survival. No patient with a PSA > 2 ng/mL and a PSADT < 12 mo was without biochemical recurrence 2 yr after surgery.
Conclusions: Salvage perineal prostatectomy showed functional results that favorably compare with the retropubic approach, but considerable morbidity is still frequent. Proper patient selection therefore is mandatory. A serum PSA level of > 2 ng/mL and PSADT < 12 mo independently predict shorter biochemical recurrence-free survival.

Editorial Comment

Data on salvage prostatectomy after previous radiotherapy are sparse. This report focuses on perineal prostatectomy in this patient group. Several interesting features in this report are worthwhile reporting and considering in patients with a similar situation.
First, understaging is a major event. Fifty-eight percent of patients had positive surgical margins. This translates into low long-term cure rates that are given in Figure-1 of the manuscript. After 5 years, only 20% of patients still were free of PSA recurrence. Of further importance is the fact that only patients with a preoperative PSA of < 2 ng/mL remained free of biochemical recurrence.

In fact, radical salvage prostatectomy remains a procedure that should be elected in few highly elected patients.

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A prospective randomized EORTC intergroup phase 3 study comparing the complications of elective nephron-sparing surgery and radical nephrectomy for low-stage renal cell carcinoma

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Objectives: This study compared the complications and the cancer control of elective nephron-sparing surgery (NSS) and radical nephrectomy (RN) in patients with a small (< or = 5 cm), solitary, low-stage N0 M0 tumour suspicious for renal cell carcinoma (RCC) and a normal contralateral kidney.
Methods: 541 patients were randomised in a prospective, multicentre, phase 3 trial to undergo NSS (n = 268) or RN (n = 273) together with a limited lymph node dissection.
Results: This publication reports only on the complications reported for both surgical methods. The rate of perioperative blood loss < 0.5l was slightly higher after RN (96.0% vs. 87.2%) and the rate of severe haemorrhage was slightly higher after NSS (3.1% vs. 1.2%). Ten patients (4.4%), all of whom were treated with NSS, developed urinary fistulas. Pleural damage (11.5% for NSS vs. 9.3% for RN) and spleen damage (0.4% for NSS and 0.4% for RN) were observed with similar rates in both groups. Postoperative computed tomography scanning abnormalities were seen in 5.8% of NSS and 2.0% of RN patients. Reoperation for complications was necessary in 4.4% of NSS and 2.4% of RN patients.
Conclusions: NSS for small, easily resectable, incidentally discovered RCC in the presence of a normal contralateral kidney can be performed safely with slightly higher complication rates than after RN. The oncologic results are eagerly awaited to confirm that NSS is an acceptable approach for small asymptomatic RCC.

Editorial Comment

This is the first report of a large randomized phase III trial on renal-sparing surgery (RSS) versus radical nephrectomy (RN) in patients with renal cancer. The trial is large enough to give meaningful results and therefore will be a standard reference in the future. In this paper, only the results of complications that have occurred are given whereas the results on oncological outcome have still to be awaited.

In this trial, only tumors smaller than 5 cm were considered eligible for RSS as, to my opinion, the rate of complications would increase sharply in larger tumors. In this way, RSS was a safe procedure. Still, a higher complication rate (which in fact was doubled in RSS patients) was detectable with a rate of severe hemorrhage of 3.1% in RSS vs. 1.2% in RN and the occurrence of urinary fistulas in 4.4% in RSS.

With these results in mind, we have to await the long-term data on oncological outcomes. As of now, renal-sparing surgery seems a safe procedure in elective patients with tumors < 5 cm.

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NEUROUROLOGY & FEMALE UROLOGY

The evolution of obstruction induced overactive bladder symptoms following urethrolysis for female bladder outlet obstruction

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J Urol. 2008; 179: 1018-23

Purpose: Bladder outlet obstruction following stress incontinence surgery may present as a spectrum of lower urinary tract symptoms. We evaluated the prevalence and impact of persistent overactive bladder symptoms following urethrolysis for iatrogenic bladder outlet obstruction.
Materials and Methods: In a retrospective review we identified 40 patients who underwent urethrolysis. All patients underwent a standardized urological evaluation. Patients identified with genitourinary erosion, neurogenic bladder dysfunction and preexisting overactive bladder were excluded. Urethrolysis outcomes were determined by subjective bladder symptoms and objective parameters. Validated questionnaires were completed to assess symptom bother, patient satisfaction and quality of life. Statistical analyses were performed using Stata, version 9.0.
Results: A total of 40 patients were included in the study with a mean ± SD followup of 13 ± 11 months (range 3 to 38). Of the patients 34 patients presented with obstructive symptoms, while 36 had overactive bladder symptoms. Obstructive symptoms resolved in 28 of the 34 patients (82%), while overactive bladder symptoms resolved completely in only 12 (35%) and they were significantly improved in 4 (12%). Overall 20 patients (56%) were on antimuscarinics for refractory overactive bladder and 8 ultimately required sacral neuromodulation. Pre-urethrolysis detrusor overactivity was more likely in patients with persistent overactive bladder symptoms than in those in whom overactive bladder symptoms resolved (70% vs. 38%). Patients with persistent overactive bladder had significantly greater symptom severity/bother, and decreased perception of improvement and quality of life following urethrolysis.
Conclusions: Following urethrolysis overactive bladder symptoms may remain refractory in 50% or greater of patients, which has a negative impact on quality of life and the impression of improvement after surgery. Detrusor overactivity demonstrated preoperatively may be useful for predicting who may have persistent overactive bladder symptoms despite an effective urethrolysis procedure.

Editorial Comment

This report highlights the difficulties of achieving normal voiding function after urethrolysis for iatrogenic female bladder outlet obstruction. The authors were able to review 40 patients who underwent a variety of urethrolysis techniques and categorized their operative success on whether the symptoms were primarily obstructive or overactive bladder in nature. The authors noted that it was much easier to resolve obstructive voiding symptoms than those of overactive bladder. The surgical success rate for symptoms of bladder overactivity was under 50 percent; in addition, 20 percent of their overall patients (8/40) eventually needed metachronous sacral nerve stimulation.

A very well written article that clearly highlights the difficulties in the management of this patient population. Simply addressing the obstructing operation unfortunately will not return the patient to normal voiding function. It is notable that none of the patients in the group appear to have had an obstructing transobturator sling (timing of the original surgery?). The authors highlight that identification preoperatively of detrusor overactivity may be a negative predictor of patient perceived success after their urethrolysis.

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Botulinum A toxin intravesical injection in patients with painful bladder syndrome: 1-year followup

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Purpose: We evaluated the 1-year efficacy and tolerability of botulinum A toxin intravesically injected in patients with painful bladder symptoms associated with increased urinary frequency, refractory to conventional treatments.
Materials and Methods: Three men and 12 women were prospectively included in the study. Under short general anesthesia the patients were given injections of 200 U commercially available botulinum A toxin diluted in 20 ml 0.9% NaCl. Injections were performed submucosally in the bladder trigone and lateral walls under cystoscopic guidance. A voiding chart and the visual analog scale for pain were used, and urodynamics were performed before treatment, and 1, 3, 5 and 12 months later.
Results: Overall 13 patients (86.6%) reported subjective improvement at the 1 and 3-month followups. The mean visual analog scale score, and daytime and nighttime urinary frequency were significantly decreased ($p < 0.05$, < 0.01 and < 0.05, respectively). At the 5-month followup the beneficial effects persisted in 26.6% of cases but increased daytime and nighttime urinary frequency, and an increased visual analog scale score were observed compared to baseline. At 12 months after treatment pain recurred in all patients. Nine patients complained of dysuria 1 month after treatment. Dysuria persisted in 4 cases at the 3-month follow-up and in 2 at the 5-month follow-up. Conclusions: Intravesically injected botulinum toxin A is effective for short-term management of refractory painful bladder syndrome. The beneficial effects decreased progressively within a few months after treatment. Thus, repeat injections of the neurotoxin are required for efficacious treatment in patients with the disease.

Editorial Comment

The authors review their experience with Botulinum A toxin intravesical injection in patients plagued with refractory bladder pain combined with symptoms of overactive bladder (frequency, urgency, nocturia). The study noted a definitely subjective improvement at one to three months post therapy but by one year post injection, the patients had returned to their baseline. The therapy was basically well tolerated but there was a substantial number of patients (9/13) that had dysuria in addition to 20 percent of the patients needing a period of self intermittent catheterization post procedure.

The report helps highlight the exciting use of Botulinum A toxin in urology. Though no medication is a panacea, it appears that the use of this intravesical agent may assist the urologist in treating a segment of our patient population that is among the most challenging. This report raises the question that patients with a non neurogenic type of voiding dysfunction may have a higher rate of urinary retention secondary to the Botulinum A toxin. Given this finding, it will be worthwhile for the treating physician to alert the patient that self intermittent catheterization is a distinct potential reality after this therapy. Unfortunately, even with a good response, patients will require repeat therapy to continue the beneficial effect; as noted in this paper the patients did request repeat a treatment because of the symptomatic relief they enjoyed. Given that there is a high rate of placebo effect in this patient population, enthusiasm should be tempered until a placebo controlled randomized study may be completed.

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PEDIATRIC UROLOGY

Antibiotic prophylaxis for the prevention of recurrent urinary tract infection in children with low grade vesicoureteral reflux: results from a prospective randomized study

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J Urol. 2008; 179: 674-9; discussion 679.

Purpose: Antibiotic prophylaxis is given to children at risk for urinary tract infection. However, evidence concerning its effectiveness in grade I to III vesicoureteral reflux is lacking. The objective of this study was to determine whether antibiotic prophylaxis reduces the incidence of urinary tract infection in young children with low grade vesicoureteral reflux.

Materials and Methods: Children 1 month to 3 years old with grade I to III vesicoureteral reflux were assigned randomly to receive daily cotrimoxazole or no treatment, and followed for 18 months. A urinary tract infection constituted an exit criterion. Infection-free survival rates were calculated using the Kaplan-Meier method and compared using the log rank test.

Results: A total of 225 children were enrolled in the study. Distribution of gender, age at inclusion and reflux grade were similar between the 2 groups. There was no significant difference in the occurrence of urinary tract infection between the 2 groups (17% vs. 26%, $p = 0.2$). However, a significant association was found between treatment and patient gender ($p = 0.017$). Prophylaxis significantly reduced urinary tract infection in boys ($p = 0.013$), most notably in boys with grade III vesicoureteral reflux ($p = 0.042$).

Conclusions: These data suggest that antibiotic prophylaxis does not reduce the overall incidence of urinary tract infection in children with low grade vesicoureteral reflux. However, such a strategy may prevent further urinary tract infection in boys with grade III reflux.

Editorial Comment

This study again tries to demonstrate whether prophylactic antibiotics are of value in refluxing patients and could not show a significant difference for prophylaxis in mild refluxing patients, except in Grade III boys.

I have concerns with urine samples of bag collections and their lack of attempt to define poor compliance. Previous studies have either measured drug excretion in the urine or sensitivity of the bacteria to the antibiotic that the patient was taking and 27% of the E-coli infections in the prophylactic group were sensitive to the medication that the patient was supposed to be taking. Other studies have suggested up to one-third of patients and parents are non-compliant with recommended prophylactic treatments.

I must admit that I do struggle with data such as this, where 17% of the treatment patients had an infection and 26% of the no treatment had an infection. This brings into question the difference between statistical significance and clinical significance, and makes it hard to recommend no treatment over prophylactic antibiotics. It points out how difficult it is to do a large study with sufficient number of patients to leave the readers without any doubt of the proper treatment. It is tempting to make the conclusion that no treatment is the right answer but I wonder whether the more cautious approach is to recommend early surgical treatment of reflux, which has been shown to protect kidneys from scarring, even though it does not alter the recurrent UTI rate.

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Failed pyeloplasty in children: comparative analysis of retrograde endopyelotomy versus redo pyeloplasty

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J Urol. 2007; 178: 2571-5; discussion 2575

Purpose: We compared retrograde endopyelotomy to redo pyeloplasty for the treatment of failed pyeloplasty in children.
Materials and Methods: Of 32 patients with recurrent ureteropelvic junction obstruction retrograde endopyelotomy was performed in 18 and redo pyeloplasty was performed in 14. Patient age, gender, side, stent placement at initial pyeloplasty, presentation of secondary ureteropelvic junction obstruction, hospital stay, complications and success rates were compared. Success was defined as radiographic relief of obstruction as determined by ultrasound or diuretic renography at latest followup.
Results: Median patient age was 6 years (range 2 to 14) at retrograde endopyelotomy and 7.2 years (1 to 17) at redo pyeloplasty. Retrograde endopyelotomy technique consisted of holmium laser in 10 patients and cautery/balloon dilation in 8. Redo pyeloplasty was performed through a flank incision in 12 patients and by laparoscopy in 2. Retrograde endopyelotomy was successful in 39% of the patients, while redo pyeloplasty had a 100% success rate ($p = 0.002$). Of the patients with failed retrograde endopyelotomy 5 had a stricture greater than 1 cm and 7 were younger than 4 years. Mean length of the narrowed ureteral segment was 10.1 mm in the failed retrograde endopyelotomy group vs. 5.8 mm in the successful group ($p < 0.01$). Only 1 of 8 children (13%) had a successful retrograde endopyelotomy using cautery followed by balloon dilation. Hospital stay was 1.3 days for the retrograde endopyelotomy group and 2.9 days for the redo pyeloplasty group ($p < 0.01$). Mean followup was 47 months (range 15 to 132) after retrograde endopyelotomy and 33.1 months (12 to 78) after redo pyeloplasty.
Conclusions: Retrograde endopyelotomy had a significantly lower success rate than redo pyeloplasty for correction of recurrent ureteropelvic junction obstruction after failed pyeloplasty in children. Patient age less than 4 years and narrowed ureteral segment greater than 10 mm were associated with a poor outcome after retrograde endopyelotomy.

Editorial Comment

Redo pyeloplasty was remarkably successful with an average of a 3 day stay in the hospital. One wonders about patient selection in a study such as this, as obviously that could make a great difference in the outcome.

These authors suggested that patients under 4 and strictures longer than a centimeter were not as well treated with endoscopic techniques. An interesting thought suggested by the authors was that patients, who did not have an initial ureteral stent and then subsequently had failure, perhaps had more urine leakage and fibrosis and were better treated by redo pyeloplasty than endoscopic techniques. The authors did not comment on whether the endoscopic techniques made redo pyeloplasty afterwards any more difficult but all their open pyeloplasties were successful after their endoscopic procedures. This is a difficult segment of patients to deal with and all of the urologic techniques should be considered. In these authors' hands, the retrograde endopyelotomy with electrocautery was not very successful.

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