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UROLOGICAL SURVEY

Francisco J.B. Sampaio
Urogenital Research Unit
State University of Rio de Janeiro

Athanase Billis
State University of Campinas
Campinas, SP, Brazil

Andreas Böhle
Helios Agnes Karll Hospital
Bad Schwartau, Germany

Steven B. Brandes
Washington University in St. Louis
St. Louis, Missouri, USA

Fernando J. Kim
Univ Colorado Health Sci Ctr
Denver, Colorado, USA

Manoj Monga
University of Minnesota
Edina, MN, USA

Steven P. Petrou
Mayo Medical School
Jacksonville, Florida, USA

Adilson Prando
Vera Cruz Hospital
Campinas, SP, Brazil

Brent W. Snow
University of Utah
Salt Lake City, Utah, USA

Arnulf Stenzl
University of Tuenbingen
Tuebingen, Germany

STONE DISEASE

Preventing Migration of Stones during Fragmentation with Thermosensitive Polymer

Sacco D, McDougal WS, Schwarz A
Department of Urology, Massachusetts General Hospital, Boston, Massachusetts
J Endourol. 2007; 21: 504-7

Purpose: To define a method of stabilizing stones during extracorporeal (SWL) and intracorporeal lithotripsy with a thermosensitive polymer.
Materials and Methods: Using a thermosensitive polymer that is either a liquid or a gel, depending on the temperature, both calcium oxalate and plaster of Paris phantom stones were placed in the polymer gel or saline, and SWL was performed. Comparisons were made between the effectiveness of the fragmentation in the two media. Also, in-vivo studies using the polymer to prevent migration of ureteral stones were performed in swine. Electrohydraulic lithotripsy was used on a small stone implanted in the distal ureter with the polymer instilled proximally. Once in the ureter, the polymer converted to a gel. After completion of the procedure, the polymer was restored to a liquid form by infusion of cold saline and expelled from the ureter. Three of the pigs underwent treatment of the stone, convalesced for 7 days, and then had urine collections from both ureters to compare the glomerular filtration rates, fractional sodium excretion, urine/plasma creatinine ratio, and urine/plasma urea ratio on the treated and the contralateral (control) sides.
Results: The polymer did not enhance fragmentation when used with SWL but prevented stone migration in the in-vivo studies. The physiologic parameters were not significantly different on the treated and the control sides. The polymer was easily removed from the ureter by infusing cold water.
Conclusion: The use of this thermosensitive polymer proximal to ureteral stones prevents migration and is not traumatic to the ureter.

Editorial Comment

The authors describe the use of a novel thermosensitive polymer to stabilize calculi during endourological procedures. The technique was not successful in an in vitro model of ESWL. Previous studies have demonstrated inhibition of stone fragmentation by ESWL when a mineral oil medium surrounds the stone. It is thought to occur by interference with the cavitation effects of ESWL, and a similar effect may occur with the new polymer evaluated in this study.

The authors did not evaluate the upper collecting system acutely after intracorporeal lithotripsy in the porcine model. This is an important step to be able to conclude that the polymer did not migrate into the renal pelvis or calyces. Was this to occur, the patient may experience transient obstruction until the polymer dissolved 2 hours later.

Clinical applications of this polymer would require the use of warmed endoscopic irrigation fluid to prevent dissolution of the polymer. It would be important to evaluate the toxicity of combustion by-products of the polymer to determine what might be anticipated if it were inadvertently targeted with the holmium laser. It would also be important to evaluate interactions of the polymer with a ureteral stent left post-operatively – could this impact polymer dissolution?

As such, the polymer holds promise as a method to prevent stone migration during ureteroscopy. One would need to quantify the volume of polymer required, which may vary based on the degree of ureteral dilation above the calculus. One might propose that the polymer could facilitate stone fragment retrieval during PCNL.

Dr. Manoj Monga
Professor, Department of Urology
University of Minnesota
Edina, Minnesota, USA
E-mail: endourol@yahoo.com

Instillation of Skin, Nephrostomy Tract, and Renal Puncture Site with Ropivacaine Decreases Pain and Improves Ventilatory Function After Percutaneous Nephrolithotomy

Ugras MY, Toprak HI, Gunen H, Yucel A, Gunes A
Departments of Urology, Inonu University Faculty of Medicine, Malatya, Turkey
J Endourol. 2007; 21: 499-503

Background and Purpose: Pain after percutaneous nephrolithotomy (PCNL) is well investigated, but no optimal management strategy has yet been defined. Ventilatory changes after uncomplicated PCNL remain obscure. We investigated whether pain can be managed with a combination of a parenteral non-narcotic drug and instillation of a local anesthetic into the operative field. We also measured ventilatory changes early after PCNL to determine whether this analgesic modality improves ventilatory status.
Patients and Methods: In a randomized blinded study, 34 well-matched patients underwent PCNL with single subcostal access. At the end of the operation, 30 mL of either 0.02% ropivacaine or saline was instilled into the renal puncture site, nephrostomy tract, and skin. Postoperatively, patients received parenteral metamizol (dipyrone) (500 mg/dose) on demand. Pain visual analog score (VAS), peak expiratory flow rate (PEF), and blood-gas analysis were performed at 2, 6, and 24 hours postoperatively. The number of analgesic doses required was recorded.
Results: The VAS at 6 hours, time to first analgesic demand, and total analgesic need were significantly lower (P = 0.001, 0.008, and 0.001, respectively) in the ropivacaine group, whereas the PEF at 2 and 6 hours was significantly higher (P = 0.001 for each). Analgesic use in the first 12 and 24 hours was lower in this group. Blood-gas analysis was within the normal range in both groups. Time of surgery and hemoglobin decrease were not significantly different.
Conclusions: A decrease in PEF indicating restricted ventilation appears early after PCNL. Because these patients were chosen carefully to have normal function preoperatively, this decrease was attributed to nociception. A combination of ropivacaine instillation with metamizol decreases pain and analgesic use and improves PEF more than use of metamizol alone. Such a multimodal pain-management strategy is effective in minimizing postoperative opioid use with proper pain management, resulting in better ventilation.

Editorial Comment

This well-designed study sets a new standard for the evaluation of perioperative pain and respiratory function after PCNL. Visual analog pain scores and analgesic requirements were markedly less in the patients receiving instillation of local anesthesia at the conclusion of the study, and this correlated well with improvements in peak expiratory flow. However, the impact on pain scores and respiratory function wore off by 24-hours postoperative, the impact on analgesic requirements were maintained for up to 24 hours.

The authors were meticulous in their technique. First, Ropivacaine was selected for its long half-life (8 hours) and high liposolubility (for the perirenal fat) and its low cardiac toxicity. Secondly, the authors instilled 10 cc in the renal parenchyma as the nephroscope was withdrawn, 15 cc in the nephrostomy tract alongside the nephrostomy tube and 5 cc at the skin incision.

Previous studies have demonstrated that less opioid utilization translates into earlier control of pain, early mobilization, improved respiratory function, shorter hospital stay and lower costs. As such, instillation of local anesthesia at the completion of PCNL should be strongly considered.

Dr. Manoj Monga
Professor, Department of Urology
University of Minnesota
Edina, Minnesota, USA
E-mail: endourol@yahoo.com

ENDOUROLOGY & LAPAROSCOPY

Decreased Complications of Contemporary Laparoscopic Partial Nephrectomy: Use of a Standardized Reporting System

Simmons MN, Gill IS
Glickman Urological Institute, Cleveland Clinic, Cleveland, Ohio
J Urol. 2007; 177: 2067-73

Purpose: We report complications of laparoscopic partial nephrectomy in a contemporary cohort of 200 patients using a standardized complication reporting system.
Materials and Methods: The records of 200 consecutive patients undergoing laparoscopic partial nephrectomy between September 2003 and November 2005 were reviewed. Mean tumor size was 3 cm and mean parenchymal invasion depth was 1.8 cm. There were 97 central tumors (48.5%) and 9 tumors (4.5%) in a solitary kidney. Complication severity for each patient was graded using a 5-tiered scale based on National Cancer Institute Common Toxicity Criteria. Statistical analysis was done to assess risk factors associated with complication events.
Results: A total of 35 patients (17.5%) had complications. The overall complication rate was 19%. Of the complications 29%, 42%, 26% and 2.6% were grades I to IV, respectively. There were no grade V complications. Median blood loss was 150 ml. Hemorrhagic and urine leak complications occurred in 9 (4.5%) and 4 patients (2%), respectively. Conversion to open partial and laparoscopic radical nephrectomy was done electively in 2 (1%) and 1 patients (0.5%), respectively. Compared to previously reported data on the initial 200 patients in our laparoscopic partial nephrectomy cohort this contemporary group of 200 had statistically significant decreases in overall, urological and hemorrhagic complication rates despite an increase in tumor complexity ($p = 0.02$, 0.04 and 0.04, respectively).
Conclusions: Increased experience with advanced laparoscopic techniques has allowed a significantly decreased complication rate following contemporary laparoscopic partial nephrectomy, which now appears comparable to that of open partial nephrectomy. A standardized complication reporting system is advocated.

Editorial Comment

Laparoscopy partial nephrectomy has been challenged and questioned as treatment of renal tumors < 4 cm. The authors demonstrated an improvement in their complications rates due to the vast number of procedures and their learning curve. The authors used the NCI-CTC reporting system for surgical complications, which apparently standardizes definitions of complication events and enables clear comparison of the frequency and severity of events among various series. In conclusion, although the learning curve may be steep for certain laparoscopic procedures, this minimally invasive approach seems to mimic and is comparable to the open counterpart.

Dr. Fernando J. Kim
Chief of Urology, Denver Health Med Ctr
Assistant Professor, Univ Colorado Health Sci Ctr
Denver, Colorado, USA
E-mail: fernando.kim@uchsc.edu

Early Results of Robot Assisted Laparoscopic Lithotomy in Adolescents

Lee RS, Passerotti CC, Cendron M, Estrada CR, Borer JG, Peters CA
Department of Urology, Children's Hospital Boston, Boston, Massachusetts, and Department of Urology, University of Virginia, Charlottesville, Virginia
J Urol. 2007; 177: 2306-2310

Purpose: The treatment of large stone burdens in children is difficult and often requires multiple procedures using a combination of therapies. Recently, laparoscopy has been shown to be effective in the management of larger stone burdens. We report our experience with robot assisted laparoscopic lithotomy in adolescents, and describe our technique.
Materials and Methods: We retrospectively reviewed our experience with robot assisted laparoscopic pyelolithotomy in 5 patients operated on between 2002 and 2005. Mean patient age at surgery was 16.6 years, and mean followup was 15.4 months.
Results: Cystine was the etiology in 4 patients with staghorn stones. The remaining patient had calcium oxalate stones and concurrent ureteropelvic junction obstruction. After pyelotomy stones were removed by a robotic grasper or by a flexible cystoscope introduced through a robotic port. One of the patients had an indwelling ureteral stent placed preoperatively, while 4 had stents placed robotically intraoperatively. Mean operative time was 315.4 minutes (range 165.0 to 462.0), and mean estimated blood loss was 19.0 ml (0.0 to 50.0). Mean hospital stay was 3.8 days (range 2.3 to 5.7), and mean narcotic usage was 2.1 mg/kg morphine (1.5 to 3.5). One patient with a cystine staghorn calculus required conversion to an open procedure because of inability to remove the stone. Of the 4 cases completed robotically 3 were rendered stone-free and 1 had a residual 6 mm lower pole stone.
Conclusions: The early results of robot assisted laparoscopic lithotomy reveal that the procedure is safe and efficacious. Further prospective studies comparing other minimally invasive procedures used for similar stone burdens are needed to determine the benefits of this procedure and its role in stone management.

Editorial Comment

Laparoscopic assisted lithotomy procedures have been successfully described in the literature. With the advent of robotic surgery, the learning curve may be facilitated, especially in the reconstructive steps. The authors demonstrated their pioneering work emphasizing the technical feasibility and efficacy of robotic assisted lithotomy in adolescents with large stone burden. The investigators recognize that PCNL, ESWL and ureteroscopy are first line therapies in the management of pediatric renal stones. Nonetheless, this minimally invasive approach is another viable treatment option, particularly if the child has failed other minimally invasive techniques.

Dr. Fernando J. Kim
Chief of Urology, Denver Health Med Ctr
Assistant Professor, Univ Colorado Health Sci Ctr
Denver, Colorado, USA
E-mail: fernando.kim@uchsc.edu

IMAGING

Detection of Bladder Tumors with Dynamic Contrast-Enhanced MDCT

Jinzaki M, Tanimoto A, Shinmoto H, Horiguchi Y, Sato K, Kuribayashi S, Silverman SG
Department of Diagnostic Radiology, Keio University School of Medicine, Tokyo, Japan
AJR Am J Roentgenol. 2007; 188: 913-8

Objective: In a small pilot study, we assessed whether early-phase dynamic contrast-enhanced MDCT can be used to detect bladder tumors and whether thin reconstruction improves the detection rate.
Subjects and Methods: Thirty-six patients (30 with 59 cystoscopy-proven bladder cancers and six with normal bladders) underwent dynamic contrast-enhanced MDCT of the pelvis and abdomen. Images were obtained from the symphysis pubis to the diaphragm 70 seconds after injection of 100 mL of contrast medium. McNemar test was used to compare sensitivity per patient, segment, and tumor and specificity per patient and segment for each of three reconstruction methods: 5-mm sections with no overlap (i.e., 5-mm axial images), 2.5-mm sections with 1.25-mm overlap (i.e., thin-section axial images), and 2.5-mm sections with 1.25-mm overlap and multiplanar reformation (MPR) (i.e., thin-section axial images with MPR).
Results: MDCT with a combination of thin, overlapped sections and MPR depicted all but one of 47 bladder tumors larger than 5 mm but only five of 12 tumors 5 mm or smaller. There were no false-positive findings. Per-tumor sensitivity was significantly better with thin-section images with MPR (90%) and thin-section images alone (86%) than with 5-mm axial images (80%) ($p < 0.05$). Per-segment sensitivity was significantly better with thin-section images with MPR (95%) and thin-section axial images alone (87%) than with 5-mm axial images (79%) ($p < 0.05$). Per-patient sensitivity and per-patient and per-segment specificity did not differ with the three methods.
Conclusion: Dynamic contrast-enhanced MDCT of the pelvis shows promise for the detection of bladder tumors. Use of thin-section images with MPR and thin-section axial images alone had a significantly better rate of detection of bladder tumors than use of 5-mm axial images.

Editorial Comment

The authors show the ability of thin (2.5 mm) and overlapped sections and multiplanar reconstruction (MPR) to depict small bladder tumors. Thin-section images (2.5 mm) with MPR were used to detect all but one of 47 bladder tumors larger than 5 mm but only five of 12 tumors 5 mm or smaller. There were no false-positive findings. The sensitivity for detecting bladder tumors 5 mm or smaller was significantly better for thin-section images with MPR and thin-section axial images (both, 58%) than for 5-mm axial images (25%) ($p < 0.05$). Use of thin-section axial images improved the detection rate only for tumors smaller than 5 mm. MPR improved the detection of tumor in the bladder dome and tumors adjacent to normal anatomic structures.

Multidetector CT-urography has been shown to be an effective single comprehensive examination in the evaluation of patients with hematuria or with risk for the development of urothelial malignancies. Since protocols for MDCT urography varies from each institution, most MDCT urography images are obtained in the unenhanced phase (detection of calculi), nephrographic-phase (detection of renal masses) and excretory-phase (detection of urothelial lesions). Some authors recommend that MDCT urography should be performed only after adequate cystoscopy since these protocols do not allow adequate evaluation of the bladder.
Since January 2006, we have been using in our institution similar technique described by the authors as part of MDCT urography (1). This additional phase of MDCT-urography is used only in patients with macroscopic hematuria and with no previous cystoscopy. We agree with the authors that this “the bladder-wall phase” (scans at 60 or 70 seconds after intravenous injection of contrast), allows the detection of small bladder tumors. However, we need to keep in mind that this additional phase cause significant increase in the effective radiation

dose to the patients (18 to 25 mGy). For this reason, this protocol should be used with caution and primarily in older patients with macroscopic hematuria and absence of previous cystoscopy.

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Dr. Adilson Prando
Chief, Department of Radiology
Vera Cruz Hospital
Campinas, São Paulo, Brazil
E-mail: aprando@mpc.com.br

Can High-Attenuation Renal Cysts be Differentiated from Renal Cell Carcinoma at Unenhanced CT?

Jonisch AI, Rubinowitz AN, Mutalik PG, Israel GM
Department of Diagnostic Radiology, Yale University School of Medicine, New Haven, CT, USA
Radiology. 2007; 243: 445-50

Purpose: To retrospectively determine if renal cell carcinoma can be differentiated from high-attenuation renal cysts at unenhanced computed tomography (CT) based on Hounsfield unit measurements and heterogeneity.
Materials and Methods: The Human Investigation Committee at our institution approved this study with waiver of informed consent. This study was compliant with the HIPAA. Fifty-four pathologically proved renal cell carcinomas in 54 patients (36 men and 18 women; average age, 53 years; range, 23-90 years) and 56 high-attenuation renal cysts in 51 patients (30 men and 21 women; average age, 63 years; range, 28-86 years) were retrospectively evaluated at unenhanced CT. Two independent readers reviewed randomized unenhanced CT images and obtained Hounsfield unit readings of each mass. A subjective determination of lesion heterogeneity was also performed by using a four-point scale (1: homogeneous, 2: mildly heterogeneous, 3: moderately heterogeneous, 4: markedly heterogeneous). Statistical analysis was performed by using Bland-Altman regression tree, classification and regression tree, and Shapiro-Wilk normality test.
Results: The average attenuation of cysts for reader 1 was 53.4 HU (range, 23-113 HU) and for reader 2 was 53.8 HU (range, 21-108 HU). The average attenuation of neoplasms for reader 1 was 34.7 HU (range, 21-60 HU) and for reader 2 was 38.4 HU (range, 22-60 HU). For cyst heterogeneity, a score of 1 was given in 55 of 56 (98%) cysts for reader 1 and in 53 of 56 (95%) cysts for reader 2. For neoplasm heterogeneity, a score of 1 was given in 35 of 54 (65%) neoplasms for reader 1 and in 36 of 54 (67%) for reader 2. Given the distribution of cyst and tumor attenuation values and lesion heterogeneity, a homogeneous mass measuring 70 HU or greater at unenhanced CT has a greater than 99.9% chance of representing a high-attenuation renal cyst.
Conclusion: The findings from this study may help differentiate high-attenuation renal cysts from renal cell carcinomas at unenhanced CT and may suggest the next appropriate imaging study for definitive characterization.

Editorial Comment

A hyperdense cyst refers to a cyst that demonstrates high attenuation on nonenhanced CT scans. Hemorrhage or proteinaceous debris is the most common cause, but renal cell carcinoma may eventually demonstrate similar

findings. A hyperdense renal cyst can be considered benign if it is sharply marginated or homogeneous or demonstrates a hematocrit effect on nonenhanced and contrast-enhanced scan and demonstrates no significant enhancement on post-contrast scans. Because internal structures within a hyperdense renal cyst cannot be well evaluated by nonenhanced CT, US or MR imaging can be used for the differentiation. When sonography is performed, the mass is usually cystic but occasionally do not present all the sonographic criteria for a simple cyst. Actually internal septations and absence of posterior wall trough-transmission are frequently found.

The authors present an interesting observation, which should be useful for adequate characterization of hyperdense renal lesion found on nonenhanced CT scans particularly in those patients submitted to a non-contrast CT scans for the detection of urolithiasis. They found that the attenuation of a renal mass and its degree of heterogeneity are useful findings in distinguishing a high-attenuation renal cyst from renal cell carcinoma on unenhanced CT images. If the density of the mass is greater than 70 HU and the mass is homogeneous, there is a chance of almost 100% (99.9%) that the mass is benign hyperdense renal cyst. They concluded that in this situation there is no need for contrast enhanced CT scan and high-resolution US studies or MR imaging can be used as complimentary test.

Dr. Adilson Prando
Chief, Department of Radiology
Vera Cruz Hospital
Campinas, São Paulo, Brazil
E-mail: aprando@mpc.com.br

UROGENITAL TRAUMA

Management of High Grade Renal Trauma: 20-Year Experience at a Pediatric Level-I Trauma Center

Henderson CG, Sedberry-Ross S, Pickard R, Bulas DI, Duffy BJ, Tsung D, Eichelberger MR, Belman AB, Rushton HG
Division of Urology, Children's National Medical Center, Washington, DC 20010, USA
J Urol. 178, 246-250, 2007

Purpose: In the last 20 years the management of high grade, blunt renal trauma at our institution has evolved from primarily an operative approach to an expectant nonoperative approach. To evaluate our experience with the expectant nonoperative management of high grade, blunt renal trauma in children, we reviewed our 20-year experience regarding evaluation, management and outcomes in patients treated at our institution.
Materials and Methods: We retrospectively studied all patients sustaining renal trauma between 1983 and 2003. Medical records were reviewed for mechanism of injury, assigned grade of renal injury, patient treatment, indications for and timing of surgery, and outcome. Injuries were categorized as either low grade (I to III) or high grade (IV to V).
Results: We reviewed the medical records of 164 consecutive children who sustained blunt renal trauma between 1983 and 2003. A total of 38 patients were excluded for inadequate information. Of the remaining 126 children 60% had low grade and 40% had high grade renal injuries. A total of 11 patients (8.7%) required surgical or endoscopic intervention for renal causes, including 2 for congenital renal abnormalities and 1 for clot retention. Eight patients (6.3%) required surgical intervention for isolated renal trauma, of whom 2 (1.6%) required

immediate surgical intervention for hemodynamic instability and 6 (4.8%) were treated with a delayed retroperitoneal approach. Only 4 patients (3.2%) required nephrectomy. All patients receiving operative intervention had high grade renal injury.
Conclusions: Initial nonsurgical management of high grade blunt renal trauma in children is effective and is recommended for the hemodynamically stable child. When a child has persistent symptomatic urinary extravasation delayed retroperitoneal drainage may become necessary to reduce morbidity. Minimally invasive techniques should be considered before open operative intervention. Early operative management is rarely indicated for an isolated renal injury, except in the child who is hemodynamically unstable.

Editorial Comment

Henderson et al. is another paper supporting that contemporary management of blunt renal injury in the child is expectant management (1). They had a surprisingly high percentage of Grade IV and Grade V (shattered kidney) injuries that were managed successfully. As in other solid organs like the spleen and liver, where bunt trauma is managed almost exclusively conservatively, the same is true for the kidney. Clearly, the management pendulum for even high grade blunt injuries has shifted to a nonsurgical algorithim. Only in the exsanguinating and unstable patient, is surgical exploration of blunt renal injury an absolute indication. All other kidney injuries are just relative indications. One proviso when dealing with trauma in children, however, is that they do not manifest changes in their vital signs until severe degrees of blood loss. Due to increased physiologic reserve, vital signs in the child can stay in the normal range even in the presence of shock. Tachycardia and poor skin perfusion are often the only signs of hypovolumia. Only blood volume losses greater than 30% in children manifest drops in blood pressure, narrowed pulse pressure, and absent peripheral pulses.

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Dr. Steven B. Brandes
Associate Professor, Division of Urologic Surgery
Washington University in St. Louis
St. Louis, Missouri, USA
E-mail: brandess@wudosis.wustl.edu

Management and Hospital Outcomes of Blunt Renal Artery Injuries: Analysis of 517 Patients from the National Trauma Data Bank

Sangthong B, Demetriades D, Martin M, Salim A, Brown C, Inaba K, Rhee P, Chan L
Division of Trauma and Critical Care, Department of Surgery, School of Medicine, University of Southern California, Los Angeles, CA 90033, USA
J Am Coll Surg. 2006; 203: 612-7

Background: Blunt renal artery injuries are rare and no single trauma center can accumulate substantial experience for meaningful conclusions about optimal therapeutic strategies. The purpose of this study was to assess the incidence of renal artery injuries after different types of blunt trauma, and evaluate the current therapeutic

approaches practiced by American trauma surgeons and the effect of various therapeutic modalities on hospital outcomes.
Study Design: This was a National Trauma Data Bank study including all blunt trauma admissions with renal artery injuries. Demographics, mechanism of injury, Injury Severity Score, Abbreviated Injury Score for each body area (head, chest, abdomen, extremities) injuries, type of management (nephrectomy, arterial reconstruction, or observation), time from admission to definitive treatment, and hospital outcomes (mortality, ICU, and hospital stay) were analyzed. Multiple and logistic regression analyses were used to examine the relationship between type of management and hospital outcomes.
Results: Of a total of 945,326 blunt trauma admissions, 517 patients (0.05%) had injuries to the renal artery. Of the 517 patients, the kidney was not explored in 376 (73%), 95 (18%) patients had immediate nephrectomy, and 45 (9%) patients underwent surgical revascularization. In 87 of 517 (17%) patients, renal artery injury was the only intraabdominal injury. Of the 87 patients with isolated renal artery injuries, 73 (84%) were observed, 7 (8%) underwent surgical revascularization, and 7 (8%) had early nephrectomy. Multiple regression analysis demonstrated that patients who had surgical revascularization had a considerably longer ICU and hospital stay than observed patients. Patients who had nephrectomy had a considerably longer hospital stay than observed patients.
Conclusions: Blunt renal artery injury is rare. Nonoperative management should be considered as an acceptable therapeutic option.

Editorial Comment

The National Trauma Data Bank (NTDB) is a very useful and powerful database tool for which one can perform outcomes research of urological trauma. Access to the data is free and can easily be accessed over the internet. The NTDB is a nation wide trauma registry from trauma centers across the United States and Puerto Rico, and contains over 2 million records. The goal of the NTDB is to inform the medical community, the public, and decision makers about a wide variety of issues that characterize the current state of care for injured persons. The information contained in the data bank has implications in many areas including epidemiology, injury control, research, education, acute care, and resource allocation. The NTDB is a very useful and powerful database tool for which one can perform outcomes research of urological trauma. Access to the data is free and easily accessed over the internet.

As to blunt renal artery injuries that result in intimal injury and subsequent arterial thrombosis, Sangthong et al report on their review of renal injuries from across the US. Clearly, when there are two normal kidneys and the patient has normal renal function, renal artery thrombosis is best managed conservatively. Even when recognized promptly, exploration and renal artery repair is often not successful, and when successful, typically preservation of renal function is very poor. Exploration is indicated, however, in cases of injured solitary kidneys or in the very rare instance of bilateral renal artery thrombosis.

Dr. Steven B. Brandes
Associate Professor, Division of Urologic Surgery
Washington University in St. Louis
St. Louis, Missouri, USA
E-mail: brandess@wudosis.wustl.edu

PATHOLOGY

Positive-Block Ratio in Radical Prostatectomy Specimens Is an Independent Predictor of Prostate-Specific Antigen Recurrence

Marks RA, Lin HQ, Koch MO, Cheng L
Indiana University, Indianapolis, IN and Yale University, New Haven, CT, USA
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Background: Tumor volume has been considered an important variable in determining the probability of disease progression in prostatic adenocarcinoma. There have been many studies that have tried to determine an appropriate method of calculating tumor volume, but no single methodology has been agreed upon. We tested the hypothesis that the ratio of tumor positive tissue blocks to the total number of blocks submitted (positive-block ratio) can be used as an independent prognostic indicator for disease recurrence.
Design: We analyzed 504 patients who underwent total radical retropubic prostatectomy between 1990 and 1998. None of the patients had preoperative radiation or androgen-deprivation therapy. Clinical records were reviewed.
Results: The mean positive-block ratio was 0.44 (median, 0. 43; range, 0.05-1.0). The positive block-ratio was significantly associated with Gleason score, pathologic stage, surgical margin status, extraprostatic extension, seminal vesical invasion, lymph node metastasis, perineural invasion, and preoperative serum PSA level (all $P < 0.001$). Using a multivariate Cox regression model, controlling for pathological stage, Gleason score, and surgical margin status, positive-block ratio was an independent predictor of PSA recurrence (hazard ratio, 2.4; 95% confidence interval, 1.1-5.1; $P = 0.02$). Five-year PSA recurrence-free survival was 67% for those patients with positive-block ratio 0.43, as compared to 42% those with positive-block ratio > 0.43 ($P < 0.001$).
Conclusions: Positive-block ratio is an independent predictor of PSA recurrence and we recommend that this variable be recorded in radical prostatectomy specimens.

Editorial Comment

One of the most controversial aspects of the pathologic assessment of radical prostatectomy specimens is the measurement of tumor volume (1). No accepted standard exists for reporting cancer volume in prostatectomy specimens (2). Some institutions have calculated tumor volume accurately using computer-assisted image analysis systems. Because this method is not feasible for routine clinical practice, other investigators have proposed alternative simpler means of measuring tumor volume including diameter of largest tumor focus, number of tumor foci, number of involved blocks, percentage of blocks involved, use of a grid with 3.0 mm squares, or naked eye examination of the glass slides after the pathologist had circled all microscopically identifiable foci of carcinoma with a marking pen (the pathologist's percentage estimate) (3-7). The method for evaluating tumor extent applied and proposed in the study by Marks et al. is based in the positive-block ratio and is a simple one and accessible to all general pathologists. Actually is easier than the one we proposed based on a point count method (8).

Numerous studies have documented that tumor extent, volume and percentage of prostatic tissue involved by tumor within the prostate gland are important prognostic indicators. Tumor extent has been correlated with histologic grade, clinicopathologic stage, extraprostatic extension, seminal vesicle invasion, metastasis, tumor progression, and patient survival rate (6).

Although most authors agree that tumor size (percentage of carcinoma or tumor volume) in patients with prostate carcinoma should be reported in radical prostatectomies because of its prognostic importance, in some analyses, tumor size has not been considered to be an independent predictor of tumor recurrence (1,9). In the study surveyed, Marks et al. have shown that the 5-year biochemical-free progression was 67% for those

patients with positive-block ratio 0.43, as compared to 42% for those with positive-block ratio > 0.43 ($p < 0.001$) and that the positive-block ratio is an independent predictor of biochemical progression.

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

Utility of ALK-1 Protein Expression and ALK Rearrangements in Distinguishing Inflammatory Myofibroblastic Tumor from Malignant Spindle Cell Lesions of the Urinary Bladder

Sukov WR, Cheville JC, Carlson AW, Shearer BM, Piatigorsky EJ, Grogg KL, Sebo TJ, Sinnwell JP, Ketterling RP

Department of Laboratory Medicine and Pathology, Mayo Clinic, Rochester, MN, USA

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Inflammatory myofibroblastic tumor of the urinary bladder is an unusual spindle cell neoplasm that displays cytologic atypia, infiltrative growth and mitotic activity mimicking malignant tumors, such as leiomyosarcoma, rhabdomyosarcoma and sarcomatoid carcinoma. The objective of this study was to determine if anaplastic lymphoma kinase (ALK-1) protein expression detected by immunohistochemistry and ALK rearrangements detected by fluorescence in situ hybridization (FISH) were useful in distinguishing inflammatory myofibroblastic tumor from malignant spindle cell tumors of the urinary bladder. In inflammatory myofibroblastic tumor, ALK-1 expression was identified in 13 of 21 cases (62%) and ALK rearrangements in 14 of 21 cases (67%). All cases of inflammatory myofibroblastic tumor demonstrating ALK-1 expression, carried ALK rearrangements.

One case negative for ALK-1 expression exhibited ALK rearrangement. ALK rearrangements were more common in women (P=0.0032). Leiomyosarcoma, sarcomatoid carcinoma, embryonal rhabdomyosarcoma and reactive myofibroblastic proliferations were negative for ALK-1 protein and ALK rearrangements. Immunohistochemistry using markers of muscle, epithelial, neural, and follicular dendritic cell differentiation showed overlap between inflammatory myofibroblastic tumor with and without ALK gene rearrangements, and between inflammatory myofibroblastic tumor and spindle cell malignancies. However, coexpression of cytokeratin and muscle-specific antigens was unique to inflammatory myofibroblastic tumor, observed in approximately half the tumors. This study indicates that detection of ALK protein and ALK gene rearrangements are useful in distinguishing inflammatory myofibroblastic tumor from spindle cell malignancies in the urinary bladder. Additionally, our findings suggest that ALK rearrangement is the primary mechanism for ALK activation and that inflammatory myofibroblastic tumor likely represents a heterogeneous group of spindle cell proliferations with the majority associated with ALK translocations, and the remaining associated with other etiologies.

Editorial Comment

Inflammatory myofibroblastic tumor is a rare lesion occurring at a number of anatomic sites, including the urinary bladder. The vast majority of these tumors behave in a benign fashion, although occasionally tumors can recur following surgical excision. Due to the fact that displays cytologic atypia, infiltrative growth and mitotic activity, the tumor mimics aggressive malignant tumors, such as leiomyosarcoma and sarcomatoid carcinoma.

The differential diagnosis is of utmost importance and particularly difficult for the pathologist. The sarcomatoid variant of urothelial carcinoma is a very aggressive tumor. In a study by Lopez-Beltran et al., 70% of patients died of cancer at 1 to 48 months (mean 17 months) (1). Leiomyosarcoma is a rare malignant mesenchymal tumor that arises from urinary bladder smooth muscle and is the most common sarcoma of the urinary bladder. Although previous reports suggest that 5-year survival after partial or radical cystectomy approaches 70%, the largest recent study indicates that 70% of patients with leiomyosarcoma developed recurrent or metastatic disease, resulting in death in nearly half (2).

The study by Sukov et al. emphasizes the importance of immunohistochemistry as a help for the pathologist in the differential diagnosis of spindle cell lesions of the urinary bladder. In inflammatory myofibroblastic tumor there is a clonal aberration typically involving chromosome 2p (3). This results in rearrangement of the ALK gene which codifies a receptor of tyrosine-kinase and hence over-expression of ALK-1 protein which is disclosed by immunohistochemistry in up of 62% of the cases.

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

INVESTIGATIVE UROLOGY

Digital Three-Dimensional Modeling of the Male Pelvis and Bicycle Seats: Impact of Rider Position and Seat Design on Potential Penile Hypoxia and Erectile Dysfunction

Gemery JM, Nangia AK, Mamourian AC, Reid SK
Department of Radiology, Dartmouth-Hitchcock Medical Center, Lebanon, NH, USA
BJU Int. 2007; 99: 135-40

Objective: To digitally model (three-dimensional, 3D) the course of the pudendal arteries relative to the bony pelvis in the adult male, and to identify sites of compression with different bicycle riding positions as a potential cause of penile hypoxia and erectile dysfunction.
Subjects and Methods: 3D models were made from computed tomography scans of one adult male pelvis (a healthy volunteer) and three bicycle seats. Models were correlated with lateral radiographs of a seated rider to determine potential vascular compression between the bony pelvis and seats at different angles of rider positioning.
Results: Pelvis/seat models suggest that the most likely site of compression of the internal pudendal artery is immediately below the pubic symphysis, especially with the rider leaning forward. For an upright rider, the internal pudendal arteries do not appear to be compressed between the seat and the bony pelvis. Leaning partly forward with arms extended, the seat/symphysis areas were reduced to 73 mm(2) with standard seat and 259 mm(2) with a grooved seat. Leaning fully forward, the seat/symphysis areas decreased (no space with standard seat; 51 mm(2) with a grooved seat) and both the ischial tuberosities and the pubic symphysis might be in contact with the seat.
Conclusion: A grooved seat allows better preservation of the seat/symphysis space than a standard seat, but the rider's position is more important for preserving the seat-symphysis space (and reducing compression) than is seat design alone. Any factors which influence the seat-symphysis space (including an individual's anatomy, seat design and rider position) can increase the potential for penile hypoxia and erectile dysfunction/perineal numbness.

Editorial Comment

The first published article associating bicycling with erectile dysfunction appeared 20 years ago and referred to a man riding a stationary bicycle that experienced transient tight sensations around the glans penis during the exercise and progressive impairment of sexual potency over a period of more than one year. After lowering the bicycle seat the attacks of impaired penile sensation disappeared, and one month after the patient discontinued the bicycle exercises, sexual potency returned (1). The authors proposed a vascular compression for explain the abnormal penile sensation and a neural compression for impotence (1). Ten years later, a study included 260 participants in a Norwegian annual bicycle touring race of 540 km. Thirty-five of 160 responding males (22%) reported symptoms from the innervation area of the pudendal or cavernous nerves. Thirty-three had penile numbness or hypoesthesia after the tour. In 10, the numbness lasted for more than one week. Impotence was reported by 21 (13%) of the males. It lasted for more than one week in 11, and for more than one month in three. The symptoms afflict both experienced cyclists and novices. In some, the complaints may last up to eight months. The authors concluded that changing the hand and body position on the bike, restricting the training intensity, and taking ample pauses might also be necessary in prolonged and vigorous bicycle riding to prevent damage to peripheral nerves (2). Since then, many studies showed the association of bicycling with erectile dysfunction and genital numbness as well as associated the symptoms with the body position and bicycle characteristics (3,4).

The present study by Gemery et al. created digital 3-dimensional models of pelvis, pudendal arteries and bicycle seats to evaluate potential sites of compression of the vessels. The authors hypothesized that the

type of seat in conjunction with the rider's position differentially affects the orientation and compression of the pudendal arteries. This precise morphological study supports the hypothesis that the compression occurs between the top of the forward portion of the bicycle seats and the undersurface of the pubic symphysis, and is associated with the rider's position. Based on their results, the authors suggested that the rider's position has a greater role than seat design in potential compression.

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Dr. Francisco J.B. Sampaio
Full-Professor and Chair, Urogenital Research Unit
State University of Rio de Janeiro
Rio de Janeiro, RJ, Brazil
E-mail: sampaio@urogenitalresearch.org

Comparative Study of Degree of Renal Trauma between Amplatz Sequential Fascial Dilation and Balloon Dilation during Percutaneous Renal Surgery in an Animal Model

Al-Kandari AM, Jabbour M, Anderson A, Shokeir AA, Smith AD
Department of Urology, Urology and Nephrology Center, Mansoura University, Mansoura, Egypt

Urology. 2007; 69: 586-9

Objectives: To compare two commonly used methods of dilation, the Amplatz sequential fascial (ASF) and the balloon dilator, in a porcine model.
Methods: Fourteen kidneys from 9 female pigs were used for this experiment. One kidney of each pig underwent ASF dilation and the other underwent balloon dilation using the Nephromax balloon. This was achieved after percutaneous renal puncture with an 18-gauge needle under fluoroscopic guidance. The effects of both methods of dilation were assessed immediately in 1 pig, after 24 hours in 3 pigs, at 4 weeks in 4 pigs, and at 6 weeks in 1. The animals were killed, and the kidneys were removed for gross and histologic examination.
Results: Grossly, the ASF dilated tracts appeared rounded and the balloon dilated tracts appeared V-shaped with lateral fragmentation within 24 hours. No obvious gross differences were noted at 4 to 6 weeks between the two methods of dilation, with both appearing as fine scars. Histologically, minor differences were seen at 4 to 6 weeks, with slightly more abscesses and larger scar formation in the kidneys that underwent ASF dilation than in the balloon dilation group.
Conclusions: In this porcine animal model, the degree of renal trauma induced by the ASF dilators and the balloon dilators during percutaneous renal surgery seems to be comparable. The acute and chronic renal parenchyma effects of both methods of tract dilation were almost similar. The choice of nephrostomy tract dilation should be by physician preference.

Editorial Comment

This is an interesting animal model study comparing the two most common methods of nephrostomy tract dilation in USA; Amplatz sequential fascial (ASF) dilators and balloon dilators. The study aimed to determine whether any significant differences in renal trauma were present between the two techniques both acutely (immediate to 24 hours) and chronically (at 4 to 6 weeks) in pgs. The authors chosen the best animal model for this kind of analysis, since the renal collecting system, the intrarenal arteries and the kidney morphometric parameters are very similar between pigs and humans (1,2).

The analysis was macroscopic and microscopic. The histologic examination at 24 hours showed no apparent differences, except for the degree of hemorrhage, which was slightly more in the ASF dilated tracts. However, in the specimen removed at 4 to 6 weeks after ASF dilation, slightly more inflammation with abscess formation was present in the ASF dilated tracts than in the balloon-dilated tracts.

The slight differences were not significant and the authors demonstrated that the use of either method of dilation had no difference in terms of the degree of renal parenchymal trauma. Therefore, they concluded that the method of dilation is a matter of physician preference and experience.

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Dr. Francisco J.B. Sampaio
Full-Professor and Chair, Urogenital Research Unit
State University of Rio de Janeiro
Rio de Janeiro, RJ, Brazil
E-mail: sampaio@urogenitalresearch.org

RECONSTRUCTIVE UROLOGY

New Technique of Total Phalloplasty with Reinnervated Latissimus Dorsi Myocutaneous Free Flap in Female-to-Male Transsexuals

Vesely J, Hyza P, Ranno R, Cigna E, Monni N, Stupka I, Justan I, Dvorak Z, Novak P, Ranno S
Clinic of Plastic and Aesthetic Surgery, St. Anna University Hospital, Masaryk University in Brno, Brno, Czech Republic
Ann Plast Surg. 2007; 58: 544-50

From December 2001 to September 2005, the technique of total penile reconstruction with a reinnervated free latissimus dorsi myocutaneous flap was used in 22 patients (24-38 years old) with gender dysphoria. These patients were followed up for at least 11 months (range, 11-44 months). All flaps survived. Complications include hematoma (7 cases), vascular thrombosis (2 cases), partial necrosis (1 case), excessive swelling of the

neophallus (3 cases), and skin graft loss at the donor site (1 case). Of the 19 patients included in the final evaluation, the transplanted muscle was able to obtain contraction in 18 (95%) cases and 8 patients (42%) had sexual intercourse by contracting the muscle to stiffen and move the neopenis. The described technique of neophalloplasty proved to be a reliable technique and the muscle movement in the neophallus can be expected in almost all cases. The muscle contraction in the neophallus leads to "paradox" erection-stiffening, widening, and shortening of the neopenis, which allows for sexual intercourse in some patients. Subsequent reconstruction of the urethra is possible.

Editorial Comment

Functioning free muscle flaps have recently been shown to successfully restore volitional voiding in patients with acontractile bladders (1). Apart from the anastomosis of the flap, vasculature to suitable vessels at the recipient site function is achieved by microsurgical coaptation of the motor nerve supplying the flap muscle to a recipient motor nerve supplying an abdominal muscle. The transferred muscle starts acting as a "piggyback" muscle to the same muscle with which it shares its new innervation.

The authors of this paper have applied the same principle for phalloplasty in female-to-male transsexuals. In addition to obtaining a neophallus, the majority of patients were able to contract the muscle after a mean of 4 months. Almost half of the patients used the muscle contraction to stiffen the penis and were thus able to have intercourse.

Contrary to the sole use of latissimus dorsi muscle in detrusor, myoplasty phalloplasty needs a large portion of the overlying skin similar to musculocutaneous flaps used for breast reconstruction. Therefore, the rate of donor site morbidity was larger than previously reported (2), but according to the authors, 83 % considered donor site morbidity as acceptable.

The fact that no urethral reconstruction was done in these patients may be seen as a downfall. However, the possibility of actively stiffening the neophallus may be appealing for some patients. The mean follow-up of almost two years with some patients just followed for a year is too short. Some patients apparently had considerable shrinkage of the graft and this number might get larger with a longer follow-up. However, the concept of using a functioning muscle transfer for phalloplasty is worth to be considered and shows furthermore the possible versatility of this technique applicable in various fields of urology.

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Dr. Arnulf Stenzl &
Dr. Karl-Dietrich Sievert
Department of Urology
Eberhard-Karls-University Tuebingen
Tuebingen, Germany
E-mail: Arnulf.Stenzl@med.uni-tuebingen.de

Porcine Small Intestinal Submucosa Graft for Repair of Anterior Urethral Strictures

Fiala R, Vidlar A, Vrtal R, Belej K, Student V
Department of Urology, University Hospital, Olomouc, Czech Republic
Eur Urol. 2007; 51: 1702-8

Objectives: We evaluated porcine small intestinal submucosa (SIS) used in the treatment of inflammatory, iatrogenic, posttraumatic, and idiopathic strictures of bulbar and penile urethra. Midterm maintenance of urethral patency was assessed.
Methods: Fifty patients aged 45-73 yr with anterior urethral stricture underwent urethroplasty using a porcine SIS collagen-based matrix for urethral reconstruction. Stricture was localized in the bulbar urethra in 10 patients, the bulbopenile area in 31 cases, and in the distal penile urethra in nine patients. All patients received a four-layered SIS patch graft in an onlay fashion. A voiding history, retrograde and antegrade urethrography, and cystoscopy were performed preoperatively and postoperatively. Failure was defined as stricture confirmed on urethrogram.
Results: After a mean follow-up of 31.2 mo (range: 24-36 mo), the clinical, radiological, and cosmetic findings were excellent in 40 (80%) patients. Restricture developed in one of 10 bulbar, five of 31 bulbopenile, and four of nine penile strictures. These all occurred in the first 6 mo postoperatively. All patients with recurrences needed further therapy, but there has been no additional recurrence observed to date. No complications such as fistula, wound infection, UTI, or rejection were observed.
Conclusions: Use of inert porcine SIS matrix appears to be beneficial for patients with bulbar and bulbopenile strictures. Midterm results are comparable to skin flaps and mucosal grafts.

Editorial Comment

Several recent reports have used porcine small intestinal submucosa (SIS) produced either commercially or by individual laboratories as a substitute for autologous flaps in urethral stricture surgery. The initial experimental results were promising (1,2), however, clinical results were mixed (3).

When using porcine acellular matrix, it might be applied either alone functioning as a scaffold for the ingrowths of the neighboring healthy urethra or together with cultivated urothelial cells as urethral wall substitute.

The authors of this contribution used commercially available porcine SIS in an onlay fashion for bulbar, bulbopenile, and distal penile urethral defects after careful excision of strictured urethral segments. The results were acceptable for bulbar strictures but clearly unsatisfactory for penile and bulbopenile strictures. One should be cautious with the interpretation of the results in bulbar strictures: one of ten patients with bulbar stricture surgery recurred after 24 – 36 months. Considering the small number in this subgroup and the possibility of further recurrences with longer follow-up one has to question the use of xenogenic acellular matrices over autologous free flaps such as buccal mucosa. Recent experimental studies have shown that at least in commercial products there are nuclear remnants identifiable within the matrix of the presumably acellular small intestinal submucosa suggesting possible remnant donor DNA (4). Under in vitro conditions, it was also seen that human urothelial cell growths was grossly impaired. Furthermore, SIS so far did not yield any other obvious benefit for patients nor does it help to reduce any surgical costs. We therefore have to continue our search for suitable biomaterials in urethral reconstructive surgery. Until we succeed to find something current standard techniques such as buccal mucosa are the best and safest choice.

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Dr. Karl-Dietrich Sievert &
Dr. Arnulf Stenzl
Department of Urology
Eberhard-Karls-University Tuebingen
Tuebingen, Germany
E-mail: Arnulf.Stenzl@med.uni-tuebingen.de

UROLOGICAL ONCOLOGY

Delay of Radical Prostatectomy and Risk of Biochemical Progression in Men with Low Risk Prostate Cancer

Freedland SJ, Kane CJ, Amling CL, Aronson WJ, Presti JC, Terris MK; SEARCH Database Study Group
Department of Urology, Johns Hopkins School of Medicine, Baltimore, Maryland, USA
J Urol. 2006; 175: 1298-302; discussion 1302-3

Purpose: Men newly diagnosed with prostate cancer are faced with multiple treatment options. Understanding these options and their associated side effects, and making a decision often requires time, resulting in a delay before receiving treatment. This is particularly pertinent in men with low risk disease who may be considered candidates for watchful waiting and, thus, may not experience strong pressure to undergo treatment promptly. Whether delays and especially prolonged delays, eg greater than 180 days, before RP negatively impact the disease outcome is unclear.
Materials and Methods: We examined the association between time from diagnosis to surgery, and pathological features of the RP specimen and risk of biochemical progression in 895 men with low risk prostate cancer (prostate specific antigen less than 10 ng/ml and biopsy Gleason sum 6 or less) treated with RP between 1988 and 2004 in the Shared-Equal Access Regional Cancer Hospital Database using logistic regression and Cox proportional hazards, respectively.
Results: Time from biopsy to surgery was not significantly related to high grade disease in the RP specimen, positive surgical margins or extraprostatic extension (all p-trend >0.05). After adjustment for multiple clinical covariates a longer time from biopsy to surgery was significantly associated with an increased risk of biochemical progression (p-trend = 0.002). However, this increased risk of progression was only apparent in men with delays greater than 180 days (median 263, vs 90 or fewer days RR 2.73, 95% CI 1.51 to 4.94).
Conclusions: Our data suggest that patients with low risk prostate cancer can be reassured that immediate treatment is not necessary. Whether long delays (greater than 180 days) decrease the likelihood of curability in some patients requires further study.

Editorial Comment
In contrast to the detrimental effects of delaying radical therapy in bladder cancer too long, the effect in prostate cancer treatment is different. Here, the window is open for a longer time, but still begins to close

measurably after half a year. The practical advice is to give the patient time enough to evaluate his treatment options and not proceed in a hurry. Then do your job thoroughly.

Dr. Andreas Bohle
Professor of Urology
HELIOS Agnes Karll Hospital
Bad Schwartau, Germany
E-mail: aboehle@badschwartau.helios-kliniken.de

Complications and Other Surgical Outcomes Associated with Extended Pelvic Lymphadenectomy in Men with Localized Prostate Cancer

Briganti A, Chun FK, Salonia A, Suardi N, Gallina A, Da Pozzo LF, Roscigno M, Zanni G, Valiquette L, Rigatti P, Montorsi F, Karakiewicz PI
Department of Urology, Vita-Salute University, Milan, Italy
Eur Urol. 2006; 50: 1006-13

Objectives: More-extensive pelvic lymph node dissection (PLND) may be associated with a higher rate of complications and a longer hospital stay than more limited PLND.
Methods: Before radical retropubic prostatectomy, PLNDs were performed in 963 patients. Of these, 767 (79.6%) had >or=10 lymph nodes removed and examined (extended PLND [ePLND]), while 1-9 nodes (limited PLND [lPLND]) were removed in the remaining 196 (20.4%). Limits included external iliac, obturator, internal iliac, and iliac bifurcation. PLND-related complications and the length of hospital stay were recorded prospectively and analyzed according to the extent of PLND.
Results: In patients subjected to ePLND, the overall rate of complications was 19.8% versus 8.2% in those treated with lPLND ($p<0.001$). In individual analyses of specific complications, only the lymphocele rate was significantly higher after ePLND (10.3% vs 4.6%; $p=0.01$). Similarly, ePLND translated into a longer hospital stay (9.9 vs 8.2 d; $p < 0.001$). These differences persisted when adjustment was made for prostate-specific antigen and either clinical or pathologic tumor characteristics.
Conclusions: Our data indicate that, even in the hands of experienced urologic surgeons, ePLNDs are associated with higher complication rates and longer hospital stay. These detriments need to be taken into account when the staging benefit associated with ePLND is considered.

Editorial Comment

This is a timely article suitable into the actual discussion on the extend of lymph node dissection in radical prostatectomy (RP). The authors state clearly that extended lymph node dissection (eLND) leads to more complications and prolongs hospital stay. Therefore they caution against a too generous use of eLND before the benefits of this approach is clearly established.

Lymphoceles occurred in 10.3% vs. 4.6% of patients and blood loss was higher in eLND (median 1200 mL) vs. Limited LND (median 1000 mL). The drawbacks of this article are its obvious retrospective approach and the very few numbers of lymph nodes in both arms (median 7 in the “limited” vs. 17 in the “extended” LND).

Dr. Andreas Bohle
Professor of Urology
HELIOS Agnes Karll Hospital
Bad Schwartau, Germany
E-mail: aboehle@badschwartau.helios-kliniken.de

NEUROUROLOGY & FEMALE UROLOGY

Displacement and Recovery of the Vesical Neck Position during Pregnancy and After Childbirth

Wijma J, Weis Potters AE, van der Mark TW, Tinga DJ, Aarnoudse JG
Martini Hospital Groningen, Groningen, The Netherlands
Neurourol Urodyn. 2007; 26: 372-6

Aims: (i) To describe the displacement and recovery of the vesical neck position during pregnancy and after childbirth and (ii) to discriminate between compliance of the vesical neck supporting structures with and without pelvic floor contraction.
Methods: We focussed on the biomechanical properties of the vesical neck supporting structures during pregnancy and after childbirth by calculating the compliance and the hysteresis as a result from of abdominal pressure measurements and simultaneous perineal ultrasound.
Results: This study shows that compliance of the supporting structures remains relatively constant during pregnancy and returns to normal values 6 months after childbirth. Hysteresis, however, showed an increase after childbirth, persisting at least until 6 months post partum.
Conclusions: Vaginal delivery may stretch and or load beyond the physiological properties of the pelvic floor tissue and in this way may lead to irreversible changes in tissue properties which play an important role in the urethral support continence mechanism.

Editorial Comment

This manuscript reviews the effects of vaginal delivery on the biomechanical properties of the bladder neck and the pelvic tissues that support same. The authors found that the dynamic properties of the pelvic floor tissue only undergo a transient change and by six months, the dynamic component has returned to normal. In contrast, the effects of childbirth on hysteresis (failure of tissue to follow the same course during relaxation as during distention) are permanently altered with pregnancy. It is stated in the manuscript that the changes are potentially secondary to the delivery overwhelming the intrinsic properties of the pelvic floor tissues thus leading to permanent alteration. Along these same lines, the effectiveness of cesarean section in preventing the development of post-partum stress urinary incontinence has already been reported in the literature and reviewed in this journal (1).

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Dr. Steven P. Petrou
Associate Professor of Urology
Chief of Surgery, St. Luke's Hospital
Associate Dean, Mayo School of Graduate Medical Education
Jacksonville, Florida, USA
E-mail: petrou.steven@mayo.edu

Parameters of Bladder Function in Pre-, Peri-, and Postmenopausal Continent Women without Detrusor Overactivity

Pfisterer MH, Griffiths DJ, Rosenberg L, Schaefer W, Resnick NM
Bethanien-Krankenhaus-Geriatrisches Zentrum-Kontinenzberatungsstelle, Heidelberg, Germany
Neurourol Urodyn. 2007; 26: 356-61

Aims: To determine normative data for lower urinary tract function in asymptomatic continent women without detrusor overactivity (DO) across the age span.
Methods: Healthy female volunteers aged > or =20 years were recruited from the community. Comprehensive assessment included bladder diary, physical examination, uroflowmetry, and video-urodynamics. Continent women without history of frequent urgency and without DO were selected. Data on bladder storage, voiding and urethral sphincter function, urine output and frequency are presented for pre-, peri-, and postmenopausal women.
Results: Twenty-four asymptomatic women (mean age 50.2 years, range 22-80 years) met the inclusion criteria, including 7 pre- (29.2 years), 7 peri- (48.8 years), and 10 postmenopausal (66.0 years) women. For all subjects, maximum single voided volume in bladder diary was 500 ml and maximum cystometric capacity was 580 ml (median values). Strong desire to void (SDV) was reported at 287, 366, and 425 ml for pre-, peri-, and postmenopausal groups, respectively. The maximum flow rate was 25, 32, and 23 ml/sec in uroflowmetry and 23, 24, and 18 ml/sec in pressure-flow study, respectively. Median post-void residual volume (PVR) was below 20 ml in all groups. At maximum flow rate subjects voided with detrusor pressures of 29, 26, and 24 cm H(2)O, respectively. Maximum urethral closure pressure was 94, 74, and 42 cm H(2)O, respectively.
Conclusions: We provide normative data on bladder function in asymptomatic, continent, pre-, peri-, and postmenopausal women without DO.

Editorial Comment

As stated by the authors “this is the first comprehensive evaluation of voiding storage and urethral sphincter function in carefully selected asymptomatic continent, pre-, peri-, and post-menopausal women without DO”. A well-written manuscript that deserves to be included in one’s file of reference articles. Of note is that the rigid criteria used combined with the prevalence of detrusor overactivity and urodynamic/voiding abnormalities yielded a very small study population distilled from a much larger population of volunteers: of the 396 women that initially responded and were interviewed over the telephone only 24 patients met the selection criteria and in addition only 3 of these were over the age of 73 years of age. This finding solidly raises the question of what really is normal with regards to bladder function and voiding habits as opposed to what is physiologic perfection.

Dr. Steven P. Petrou
Associate Professor of Urology
Chief of Surgery, St. Luke’s Hospital
Associate Dean, Mayo School of Graduate Medical Education
Jacksonville, Florida, USA
E-mail: petrou.steven@mayo.edu

PEDIATRIC UROLOGY

Evolution of Endoscopic Management of Ectopic Ureterocele: A New Approach

Kajbafzadeh A, Salmasi AH, Payabvash S, Arshadi H, Akbari HR, Moosavi S.
Department of Urology, Children's Hospital Medical Center, Tehran University of Medical Sciences, Tehran, Iran
J Urol. 2007; 177: 1118-23; discussion 1123

Purpose: We report the evolution of endoscopic treatment of ectopic ureteroceles from the unroofing technique to a novel approach using concomitant ureterocele double puncture and intraureterocele fulguration. We also compare the results of different endoscopic modalities at a single center.
Materials and Methods: We reviewed the records of 46 children with ectopic ureteroceles who were treated endoscopically between 1995 and 2005. The patients were divided into 2 main groups. Group 1 included 17 patients who underwent common endoscopic treatments, including ureterocele incision (4 patients), single ureterocele puncture (4), and single puncture with insertion of a Double-J stent (9). Group 2 included 29 children who underwent ureterocele double puncture and fulguration of the anterior and posterior walls of the collapsed ureterocele after insertion of a Double-J stent into both punctured sites. We also managed concomitant vesicoureteral reflux by endoscopic injection of tricalcium phosphate ceramic into the subureteral region.
Results: Total success rates in group 1 were 0%, 25% and 33% in patients who underwent ureterocele incision, single ureterocele puncture and single puncture with insertion of a stent, respectively. Total success rate in group 2 was 90% ($p<0.05$). New onset vesicoureteral reflux developed in 8 patients (47%) in group 1, of which 6 were in ureterocele moieties, and in 8 patients (28%) in group 2, with none in a ureterocele moiety ($p<0.01$). A total of 13 patients (76%) in group 1 required open surgical intervention, compared to 3 (10%) in group 2 ($p<0.05$).
Conclusions: This new endoscopic approach is highly effective in the treatment of children with ectopic ureteroceles.

Editorial Comment

The treatment of ureteroceles has for the last decade and a half has swung towards endoscopic incision with subsequent management as necessary. Success rates vary significantly and there are articles such as Ben Meir et al. (1) suggesting that intravesical ureteroceles do very well with incision techniques while ectopic ureteroceles do not have such good results.

I think this manuscript is remarkable in that only 10% of the patients with the new approach needed open surgery and the remainder of the ectopic ureteroceles could be managed endoscopically. Preoperative and postoperative reflux can be a problem. These authors successfully managed it with injection therapy in many patients. There is concern that the ureteroceles have poor muscular backing and that this procedure in the long-term may lead to bladder diverticula. One would expect with 8 years follow up in some of their patients that perhaps some of those would have been seen by now. Presumably, the longest term follow up patients were the ones with incisions were not the ones with the two incisions and the double-J stent placement.

Reference

1. Ben Meir D, Silva CJ, Rao P, Chiang D, Dewan PA: Does the endoscopic technique of ureterocele incision matter? J Urol. 2004; 172: 684-6.

Dr. Brent W. Snow
University of Utah Health Sci Ctr
Division of Urology
Salt Lake City, Utah, USA
E-mail: brent.snow@hsc.utah.edu

Initial Trial of Timed Voiding is Warranted for All Children with Daytime Incontinence

Allen HA, Austin JC, Boyt MA, Hawtrey CE, Cooper CS
Division of Pediatric Urology, Department of Urology, University of Iowa Hospitals and Clinics, Iowa City, Iowa 52242-1089, USA
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Objectives: To analyze the relationship between potential prognostic factors and early success after treatment of childhood daytime urinary incontinence without anticholinergic medication.
Methods: A total of 63 patients with daytime urinary incontinence met the inclusion criteria for a retrospective review of the effect of a timed voiding regimen. The severity, duration, and frequency of wetting, along with age, sex, and uroflow parameters, were recorded. Statistical analysis was used to determine the factors predictive of improvement in wetting without anticholinergic treatment.
Results: Of 315 children evaluated with daytime incontinence, only 24% were treated with nonanticholinergic methods. At the first follow-up visit, 6.3% of patients treated without anticholinergics became dry, 38.1% showed significant improvement, 36.5% were slightly improved, and 19.0% were unchanged. Age, sex, duration or severity of wetting, constipation, bladder capacity, and uroflow pattern and parameters were not predictive of early improvement with timed voiding. Patients with good compliance with timed voiding were significantly more likely to improve than those with poor compliance ($P = 0.014$).
Conclusions: The results of our study have indicated that anticholinergic therapy appears to be overused as a first-line treatment for children with daytime urinary incontinence in our clinic population. The lack of reliable predictive factors regarding the response to nonanticholinergic treatment suggests a trial of timed voiding should be used as an initial treatment for all children with daytime urinary incontinence. Almost 45% of our patients had significant improvement in the frequency of wetting within 4 months without anticholinergics.

Editorial Comment

It is interesting in this study to have nearly 45% of the patients have significant improvement without pharmacotherapy and this study would suggest that patients who come to the office for evaluation of daytime incontinence should all have an initial treatment of timed voiding and elimination diaries and a follow up visit prior to instituting drug therapy. Since compliance was the only positive correlate, it would suggest that all efforts in a urologists' office to encourage parental and patient compliance should be attempted to gain the best outcome.

It is surprising in this manuscript that constipation did not have any correlation. Other studies suggest that this is highly correlated but perhaps with the highly selective group and small numbers the authors were not able to find this correlation.

Dr. Brent W. Snow
University of Utah Health Sci Ctr
Division of Urology
Salt Lake City, Utah, USA
E-mail: brent.snow@hsc.utah.edu