Laparoscopic radical prostatectomy in renal transplant recipients

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Objectives: To report our experience with 9 consecutive laparoscopic radical prostatectomy (LRP) on renal transplant recipients (RTR) and to compare it with other LRPs performed during the same period by the same surgeons. Retropubic radical prostatectomy has widely been described in RTR, whereas LRP has rarely been studied.
Methods: Between January 2007 and December 2008, all clinical data from patients undergoing radical prostatectomy were prospectively collected in a database. The database was searched to find information of LRP on RTR. We compared RTR and other patients for all relevant clinical data and for surgical complications.
Results: A total of 9 LRP on RTR (5.8%) and other 164 LRP were performed. LRP on RTR were compared with other LRP. No statistically relevant difference was observed in patient characteristics, biopsy core pathologic analysis, prostate specimen pathologic analysis, and oncologic outcomes. Surgical procedure was also achieved under the same conditions in RTR than in other patients (surgical time, blood loss, transfusion rate, bladder injury). Rectal injury rate was significantly higher in RTR than in other patients (22.2% vs 1.8%, P = .022).
Conclusions: LRP in RTR is feasible. The procedure can be managed the same way as LRP on other patients, but special care must be taken to avoid rectal injury. In our experience, the dissection of the posterior side of the prostate was more difficult on RTR than on other patients.

Editorial Comment

The authors described a difficult procedure, that is laparoscopic radical prostatectomy (LRP) in a population that has a complex medical history. Moreover, the possible anatomical challenges may cause an increase in morbidity. When cadaveric grafts are used, the immune system may alter the course of wound healing and increase not only the morbidity but also the mortality due to postoperative complications.

I congratulate the authors for sharing their experience describing a significant increase in rectal injury due to the anatomical challenges due to prior renal transplantation, the million dollar question is whether these patients can better served by other methods of therapy and ablation, such as, cryoablation of the prostate under transrectal ultrasonography.

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IMAGING

Imaging in pediatric urinary tract infection: a 9-year local experience

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Objective: Urinary tract infection (UTI) is a common disease entity in children, and a number of imaging options are offered for these patients. The purpose of our study was to retrospectively describe the (99m)Tc-labeled dimer captosuccinic acid (DMSA) renal scintigraphy, ultrasound, and micturating cystourethrography (MCU) findings over a 9-year period.
Materials and Methods: All children younger than 10 years old who presented to a local hospital in Hong Kong between July 1, 1997, and June 30, 2006, with culture-confirmed UTI and who subsequently underwent DMSA scintigraphy, ultrasound, and MCU were identified. For the purpose of this study, patients with underlying major congenital urinary tract abnormalities were excluded. DMSA scintigraphy was regarded as the gold standard for the diagnosis of renal scarring. DMSA scintigraphy, ultrasound, and MCU findings and clinical outcomes were reviewed and analyzed.
Results: A total of 583 children were included in the study. Of these, 432 children (74.1%) had normal findings on ultrasound and on MCU. Only 13 children (3%) of this group had renal scarring as shown on DMSA scintigraphy. The overall negative predictive value (NPV) for excluding renal scarring of combined ultrasound and MCU reached 97%. The NPV was 97.7% in the subgroup of patients 0 to 2 years old. Conclusion: For children younger than 2 years with UTI in the absence of underlying major congenital urinary tract abnormalities, we recommend that DMSA scintigraphy may be withheld if findings on both ultrasound and MCU examinations are normal.

Editorial Comment

The authors performed a retrospective study in order to evaluate the potential role of combined ultrasound (US) and MCU as first-line imaging tests in predicting renal scarring using DMSA scintigraphy as the gold standard. In their cohort, almost 600 children were included. The performances of US alone, MCU alone, and the techniques combined were systematically evaluated and compared with the performance of DMSA scintigraphy. If US alone was performed, the probability of missing renal scarring was as high as 7.2% compared to 3.1 % with MCU alone. If MCU and US were considered together, the probability of missing renal scarring could be further reduced to 3.0%. A normal US and normal MCU therefore would safely exclude renal scarring in most cases with a false-negative risk of 2.3% in children younger than 2 years. The authors concluded that DMSA scintigraphy may be withheld in children younger than 2 years in the absence of major congenital urinary tract abnormalities. For children with either positive US or positive MCU findings, further evaluation with DMSA scintigraphy should be performed to determine whether scarring is present.

In this study, DMSA scintigraphy was generally performed a minimum of 3 months after the onset of UTI. As we know there is on going debate in order to establish the most adequate timing to perform DMSA scintigraphy since pyelonephritis and renal scarring looks similar on DMSA scans (1). In other words, it is difficult to determine at what time point a scintigraphic defect should be considered permanent scarring rather than potentially recovering pyelonephritis. Up to now there is no consensus regarding the length of time after the initial episode of UTI that this follow-up DMSA scanning for scarring should be performed. In the literature, this length of time varies from 3 months to 12 months. As we can see, we are still distant from following accurate strict guidelines in imaging protocol in these children.

Reference

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Three-dimensional CT pyelography for planning of percutaneous nephrostolithotomy: accuracy of stone measurement, stone depiction and pelvicalyceal reconstruction

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Retrospective evaluation of computed tomographic (CT) pyelography before percutaneous nephrostolithotomy (PCNL). Twenty patients with renal calculi underwent CT pyelography using a dedicated protocol. Calculus size, uniformity of contrast excretion and accuracy of calculus and pelvicalyceal (PC) system reconstructions were scored and compared on axial and coronal maximum intensity projections (MIP) and volume reconstructions (VRmovie loops). After contrast medium administration, the size of calculi is accurate on axial images, but underestimated on coronal studies: mean 14.7 mm vs. 14.4 mm (axial) and 17.2 mm vs. 16.1 mm (coronal) for measurements before and after enhancement, respectively ($p = 0.11$ and 0.03). Uniform contrast medium excretion (median 228 HU; 95% CI 209-266 HU) was sufficiently lower than calculus density (median 845 HU; 95% CI 457-1,193 HU) for precise calculus and pelvicalyceal reconstructions in 87% and 85%, respectively. Coronal MIP scans were rated best for calculus depiction (mean score 2.68 vs. 2.50 and 2.41 for coronal, axial and VRs, respectively; $p = 0.14$) and VR studies best for PC anatomy (mean score 4.4 vs. 3.73 and 2.89 for VR, coronal and axial studies, respectively; $p = < 0.0001$). Three-dimensional CT pyelography can accurately demonstrate calculus position and spatial relationships of the collecting system before PCNL.

Editorial Comment

Percutaneous nephrostolithotomy (PCNL) requires detailed imaging techniques to define stone burden and delineate the anatomy of the kidney and other adjacent organs and structures. Adequate safe percutaneous access can also be accomplished with preoperative imaging studies. As we know, non-contrast MDCT studies using multiplanar, curve and surface reconstruction are useful tools for the detection of renal stones but offers poor information regarding the pelvicalyceal anatomy. Coronal and sagital MIP and volume-rendered reconstructions obtained during routine CT-urography technique offers superb anatomic details of the pelvicalyceal system. However using this technique the visualization of low-density stones (pure acid uric with density ranging from 230-340 HU) is a difficult task since the contrast density within pelvicalyceal system in CT-urography ranges from 500-600 HU.

For this reason, the authors developed a tailored protocol called CT-pyelography, using both furosemide and saline bolus after contrast medium, in attempt to decrease the contrast density within pelvicalyceal system. The median contrast medium density observed with CT-pyelogram was 228 HU (range 134-1498 HU). This technique allowed the detection of 87% of significant renal calculi and 85% of all upper pelvicalyceal system details. In our opinion, however, low-density matrix and small or low-density stones may still be missed by this new approach.

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