

ENDOUROLOGY & LAPAROSCOPY

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

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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.

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Early Results of Robot Assisted Laparoscopic Lithotomy in Adolescents

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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.

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