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Laparoscopic assisted stone surgery in ectopic pelvic kidney

Introduction: Urologists are much familiar with operating renal stones in normally located well ascended retroperitoneal kidneys. However, operating on a renal stone in an anomalous pelvic dystopic kidney is a challenge. A multitude of treatment options are available for renal lithiasis like open surgery, ESWL, PCNL, Laparoscopy, RIRS. Conventional PCNL cannot be easily done in ectopic pelvic kidney because of overlying bone and risk of injuring bowel and anomalous blood supply of low lying kidney. An ectopic pelvic kidney can be safely dealt with various laparoscopic techniques without any major complications. The first report of laparoscopic pyelolithotomy for calculus removal in a pelvic kidney was reported by William et.al in 1996 in J. Urol. So far only few cases of laparoscopic stone surgery for ectopic pelvic kidney have been reported.

Material & Methods: We operated upon seven (7) patients with ectopic pelvic kidneys using various laparoscopic assisted endourological procedures. Of the 7, 6 were male, 1 female, their age ranged from 32-57 years. Two patients were hypertensive, and one patient was diabetic. Five patients with ectopic pelvic kidneys had multiple stones. Three patients had undergone laparoscopic pyelolithotomy, one was redo. One patient underwent laparoscopic pyelolithotomy for multiple stones. In all these patients the pelvis was superficial and anteriorly placed. In the other two patients the renal pelvis was not superficial and facing poster-medially. Hence laparoscopic guided PCNL was done for the patient who had multiple stones and laparoscopic nephrolithotomy done for the 2nd patient who had an impacted stone in the infundibulum. Another patient had 8 mm stone at PUJ for which Flexible ureterorenoscopic laser lithotripsy was done. All patients were stented, and a drain was left. All patients after routine investigations and physician fitness underwent laparoscopic assisted stone surgery under general anesthesia in anti-trendelenburg position. The primary surgeon stood on the opposite side of the pelvic kidney. Two 10 mm and two 5 mm were placed in fan shaped fashion. 0 and 30-degree telescopes were used. Laparoscopic instruments, rigid and flexible Nephroscope and Ureteroscope were used along with Ampla's sheath. Lithoclast and laser was used for fragmentation.

Results: Duration of surgery varied from 50-180 minutes. Blood loss was around 50-300 ml. One patient received 1 unit of blood prior to surgery as her Hb was 8 gm%. Average hospital stay was 3-5 days. There was no intra-op or post-op complications. Stents were removed after 3 weeks in all patients except one with multiple stones leading to excessive drainage.

Conclusion: We found all the above procedures to be effective and safe in treatment of these challenging cases. Laparoscopic guidance allows the trans peritoneal route to be used safely without risk of injury to other intra-peritoneal organs. Depending upon the stone burden, stone location (renal pelvis or calyces) and renal malrotation (anterior or posterior) these procedures can be selectively used in each case.

Biography

Rajinder Yadav has established and developed the Department of Urology and MIS in various hospitals. He has actively participated as faculty in USI and NZUSI conferences, presented scientific papers, videos and have demonstrated various advanced minimally invasive surgeries in live workshops and has published articles in various National and International Journals. Dr. Yadav has performed more than 30000 surgeries including 15000 endoscopic (TUR, PCNL, URS and RIRS) and 6000 Laparoscopic Retroperitoneoscopic Surgeries, individually completed 200 Retrograde Intra-Renal Surgeries (RIRS) and 1200 Laser Prostatectomies by Holmium Laser, Green Laser (KTP), Thulium Laser, and Diode Laser Performed Single Incision Laparoscopic Surgery (SILS) and Renal transplant

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