ENDOUROLOGY & LAPAROSCOPY

Complications and conversions of upper tract urological laparoendoscopic single-site surgery (less): multicentre experience: results from the NOTES Working Group

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Study Type - Therapy (case series) Level of Evidence 4

Objective: To present complications and rates of conversion from LESS to conventional laparoscopy (CL) at the time of upper tract LESS urologic procedures.

Patients and Methods: Patients undergoing LESS upper tract procedures between September, 2007 and November, 2008 (n = 125) were identified at six high-volume academic centers pioneering urologic LESS procedures. All LESS procedures were performed transperitoneally via a single umbilical incision using either adjacent conventional trocars or a dedicated single-site access device. Reconstructive procedures incorporating a single planned 2mm accessory needle port were included as LESS procedures and were not considered conversions. Patients, undergoing LESS procedures requiring conversion to CL with the placement of additional ports were identified. Conversion was defined as the placement of additional 5 or 10/12mm ports beyond the primary incision. In each case the operative reports were reviewed, the reason for conversion was determined, and the number and types of additional ports and complications were noted.

Results: Upper tract LESS procedures were performed in 125 patients comprising 13.3% of the total 937 laparoscopic procedures performed at the participating institutions during this time period. Conversion to CL was necessary in 7 patients (5.6%) undergoing LESS requiring the addition of 2-5 ports. Reasons for conversion included: facilitate dissection in 3 (43%), facilitate reconstruction in 3 (43%), and control of bleeding in 1 (14%). All attempted LESS cases were completed laparoscopically without need for open conversion. Complications occurred in 15.2% of patients undergoing LESS surgery. Three of the 7 patients that required conversion to CL developed postoperative complications (Clavien grade II in two and IIIa in one). Limitations of this study included the inability to standardize LESS patient selection criteria, instrumentation and surgical technique as well as the lack of available complete data from a CL control group for comparison.

Conclusion: LESS surgery is technically feasible for a variety of upper urinary tract reconstructive and ablative procedures, although it appears to be associated with higher rates of complications than in mature CL series. Conversion to CL occurs infrequently and may be a reflection of stringent patient selection.

Editorial Comment

The authors present a multi-center study on patients undergoing LESS upper tract procedures between September, 2007 and November, 2008 (n = 125). A total of 6 high-volume academic centers pioneering urologic LESS procedures were identified and participated in the study. Since the first laparoscopic procedure was performed the objective of ultimate less tissue damage and faster recovery of patients with optimal cosmetic results have been the “holy grail” of minimally invasive surgery. From a total of 937 Laparoscopic 77 (8.2%) had upper tract urological procedures, 125 underwent LESS, 7.8%, 48 (5.1%) Extirpative/Ablative LESS

Procedures with Complication rates of had reconstructive LESS Procedures with complication rates of 27.1%. The authors completed LESS Extirpative/Ablative Procedures in 74 patients with complication 6.7%. Three (0.3%) were converted to conventional laparoscopy with rates of complication rates of 33%. In the reconstructive LESS Procedures 44 patients had completion of surgery while conversion to conventional laparoscopic surgery rate was 0.4%. It is important to note that these are highly skill surgeons from high volume centers. Overall, the LESS procedures seem to be the next step to create new platforms and instrumentations to better serve our patients with less invasive techniques.

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