

VIDEO ABSTRACT

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Laparo-endoscopic stone surgery: advantages of an alternative approach

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Despite the technical development and expanding indications, new technologies in extracorporeal shock wave lithotripsy (ESWL), ureterorenoscopy (URSC), retrograde intrarenal surgery (RIRS) and percutaneous nephrolithotripsy (PNL) have not been able to completely replace open surgery (OS). In these cases, laparoscopic surgery could be the most suitable option. Various factors must be considered in order to offer an optimized surgical treatment. When a patient is counseled on the need for multisession surgery, the overall treatment cost and patient's preferences are important factors to help choose the best treatment modality. Urologists should balance the invasiveness of the procedure and patient's morbidity with stone free rate (SFR). The more invasive the selected procedure is, the higher one-session, SFR and a greater post-operative morbidity would be expected. With the rapidly increasing application of laparoscopy in the field of urology, acceptance of laparoscopic stone surgery (LSS) as an alternative to OS is growing. Previously, 2007 EAU urolithiasis guidelines considered LSS as an 'option', then in the 2009 edition it was 'highly recommended' and since 2012 to the current edition, LSS is the 'preferred' treatment before proceeding to OS. To optimize surgical technique and improve SFR, Salvadó et al. recommend-

ed routine exploration of the renal pelvis and caliceal system with flexible nephroscopy during LSS. LSS can be used at different levels of the urinary tract, thus expanding its possible indications. Our aim is to report LSS advantages experienced in a 4 cases mini-series combining a laparo-endoscopic approach.

During the course of 2 years, PNL was not available at our institution. PNL was only offered in the closest referral hospital. LSS performed in our department was also offered as an 'alternative approach'. The lack of availability of PNL, stone characteristics (size and Hounsfield units) and patients' preferences were considered before proceeding to LSS. Two ureterolithotomy, 1 pyelolithotomy and 1 pyeloplasty procedures are reported. Grasping forceps and nitinol baskets were used to remove ureteral and intrarenal stones under laparo-endoscopic combined vision.

Pyelolithotomy was performed in an extra-renal pelvis. Complete 'en-block' staghorn removal was achieved.

Laparoscopic techniques were combined with endourology. Through laparoscopic trocars, a flexible ureteroscope and a cystoscope were guided into renal pelvis after ureteropelvic junction (UPJ) was transected, allowing to

extract intra-renal stones during UPJ syndrome pyeloplasty.

Clinical cases are described in the video.

After surgery, patients were classified as low and high-risk recurrence, and were also treated and followed up according to EAU guidelines recommendations.

LSS advantages include:

Simple manipulation, decreased bleeding, short operative time and hospital stay.

LSS represented a safe alternative for impacted ureteral lithiasis in which a previous endourologic procedure failed.

Multitrack or multisession surgery could be avoided for staghorn extra-renal pyelic lithiasis, achiev-

ing no harm to the nephron and decreasing operative time.

A laparo-endoscopic approach could be related with acceptable SFR. More comparative studies are needed to define the role of LSS in relation to endourologic and open techniques, especially in complex circumstances.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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