

## SURGERY

# Urologic LESS: complications and risk factors

The aim of laparoendoscopic single-site surgery (LESS) is to reduce the morbidity and scarring associated with regular laparoscopic procedures. Over the past 4 years, a number of urological LESS procedures have been shown to be feasible, and have been taken up by surgeons worldwide. According to current recommendations, suitable candidates for these procedures are generally thinner, with limited previous abdominal surgery. However, detailed, specific analyses of the complication rates of these techniques—and the most important risk factors associated with these complications—has not yet been performed. Greco *et al.* retrospectively evaluated the morbidity outcomes and risk factors associated with complications in 192 patients who underwent LESS for upper urinary tract disease.

The majority (85.4%) of LESS procedures were extirpative, including radical, partial, simple and living donor nephrectomy, and the remainder (14.6%) were reconstructive, including pyeloplasty, ureterolithotomy and nephropexy. Conversion to open surgery was counted as a complication, whereas conversion to

standard laparoscopic surgery was not. Complications were classified as being early (onset <30 days after surgery), intermediate (31–90 days) or late (>90 days), and were graded according to the modified Clavien–Dindo classification. The patients were relatively young (mean age  $55 \pm 18$  years) and nonobese (mean BMI  $26.5 \pm 4.8$  kg/m<sup>2</sup>), and 44 had undergone previous abdominal surgery.

Overall, 33 complications were recorded, yielding a complication rate of 17%. Most of the complications were early (30 occurred within 30 days of surgery) and of Clavien grade 1–2 ( $n = 26$ ). Additional ports were required in 77 cases, and conversion to open surgery was needed in 4 patients. Age, American Society of Anaesthesiologists (ASA) score, estimated blood loss, length of hospital stay and presence of malignant disease at pathology were associated with the occurrence of complications. On multivariate analysis, a higher ASA score (incidence rate ratio [IRR] 1.4, 95% CI 1.0–2.1;  $P = 0.0384$ ) and malignant disease at pathology (IRR 2.5, 95% CI 1.3–4.7;  $P = 0.0039$ ) were significantly associated with complications. The complexity of



the procedure, ranked from 1 (“slightly difficult”) to 5 (“extremely difficult”), was not predictive of complications.

The authors stress the importance of patient selection and surgeon experience when deciding when to perform LESS procedures in patients with upper urinary tract disease. Owing to the significant association between the presence of malignant disease at pathology and the incidence of complications, they recommend that surgeons who are new to LESS techniques start out on patients with benign disease and low surgical risk.

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