

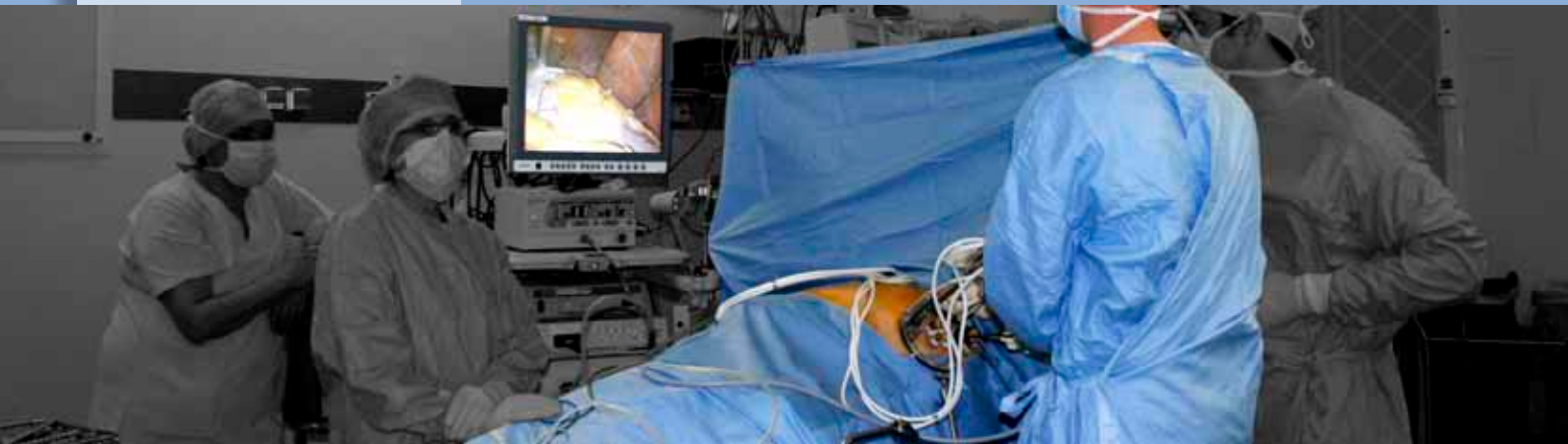
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LESS Radical and Partial Nephrectomy

compared to the Conventional Laparoscopic Approach



CLINICAL REPORT

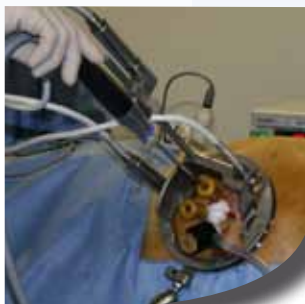
Laparoendoscopic single-site surgery (LESS) has been reported as technically feasible in numerous ablative and reconstructive urologic procedures, particularly with radical nephrectomy (RN). We present our initial experience with LESS partial (PN) and radical nephrectomy in addition to a comparison with the conventional laparoscopic approach.

PATIENTS AND METHODS

Case-control study comparing 12 consecutive LESS nephrectomies (6 RN/6 PN) with a control group of 18 consecutive laparoscopic nephrectomies (9 RN/9 PN) performed between January to September 2009.

Both groups were compared with regards to preoperative, peri-operative, and immediate postoperative parameters.

Peri-operative and pathologic data were entered and prospectively recorded.



TECHNIQUE

This study featured a transperitoneal approach for all cases with umbilical keyhole trocar placement.

A 5 mm 30° endoscope was used, as well as conventional straight laparoscopic instruments, with ultrasonic scissors. Final specimen extraction was made through the umbilical incision.

In Partial Nephrectomy, when hilum clamping was necessary, an external vascular clamp was introduced through an additional port (4th port on the umbilicus).

Radical (RN)	LESS	Conventional	p-value
Age (y)	68 (59-83)	69 (61-82)	0.74
Tumor size (mm)	55 (45-60)	63 (35-120)	0.47
OR Time (mn)	152 (90-180)	118 (90-180)	0.03
EBL (cc)	136 (0-700)	86 (0-100)	0.67
n° Transfusion (units)	1	2	
Morphine req (mg)	26 (0-100)	30 (0-90)	0.85
Complications (n)	2	2	
Hospital stay (d)	6.8	5.8	0.53
Conversion (n)	1	0	

9 of the 12 operations were performed using the ViKY® system which provided for a steadier video image. The ViKY® system also provides the surgeon with an unobstructed operating field as ViKY® replaces the need to have the assistant surgeon's hand in the operating field holding the laparoscope it eliminates crowding and makes more floor space available. ViKY® is a complementary tool for LESS which facilitates surgeon's work. Indeed, the system was controlled by voice by the surgeon who could easily move the camera with very simple orders without having to take his hands off of the instruments.

RESULTS

Mean age was 68 vs. 69 years, $p=0.74$ in the RN group and 65 vs. 58, $p=0.29$ in the PN group.

Mean tumor size was 55.4 vs. 63mm, $p=0.47$ in the RN group and 28.5 vs. 33.2mm, $p=0.49$ in the PN group.

All final pathology were confirmed RCC except 2 (AMLs) in the LESS cohort and 2 (AML, adenoma) in the control group.

There was a significant difference noted in the RN mean operative time analyses (152.5min LESS vs. 118.3 min conventional, $p=0.03$).

In 2 LESS PN, a vascular clamping mean time of 32.5 min was recorded compared with 23.8 min for 7 conventional PN ($p=0.44$).

Surgical margins were negative for all cases.



Partial (PN)	LESS	Conventional	p-value
Age (y)	65 (27-74)	58 (48-67)	0.29
Tumor size (mm)	28 (18-50)	33 (15-40)	0.49
OR Time (mn)	112 (90-180)	138 (120-180)	0.18
EBL (cc)	200 (50-600)	270 (50-600)	0.76
n° Transfusion (units)	1	1	
Morphine req (mg)	36 (0-90)	112 (0-110)	0.39
Complications (n)	1	2	
Hospital stay (d)	4.8 (4-7)	7.2 (4-9)	0.18
Conversion (n)	0	0	

CONCLUSION

LESS approach is feasible for RN and in highly selected patients for PN. Peri-operative and short-term post-operative outcomes are comparable. Mean operative time for the LESS approach in RN is longer compared with conventional laparoscopy in our initial series.

ABOUT EndoControl

EndoControl is an innovative company specializing in the development of robotic surgical solutions for endoscopic surgery. It markets a range of products including ViKY®, a robotic assistant for laparoscopic, pelvic and thoracoscopic surgery. EndoControl has established an international distribution network that

utilizes independent specialized distributor partners.

EndoControl has also developed clinical relationships with many renowned clinicians and institutions in laparoscopic surgery (Institut Mutualiste Montsouris, Paris; Cleveland Clinic, USA; Fox Chase Cancer Center, Philadelphia, USA; Fundacion Puigvert, Barcelona;...).



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