




An advantageous technique for fertility sparing staging surgery of epithelial ovarian cancer with a single umbilical incision

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Transumbilical laparoendoscopic single site surgery has significant advantages in terms of minor incision, specimen retrieval, slight pain, and rapid recovery. The feasibility and safety of performing ovarian cancer staging surgeries through a single site approach has been proved.¹ However, the risk of intraoperative complications during transperitoneal lymphadenectomy, including vascular, intestinal, and ureteral injuries, is increasing due to the lack of assistance, especially for obese patients. Previous studies reported the lateral extraperitoneal approach to achieve better exposure and dissection of the para-aortic lymph nodes with a lower risk of complications, while bilateral obturator regions were poorly explored due to limitations of views and instrumental degrees.²

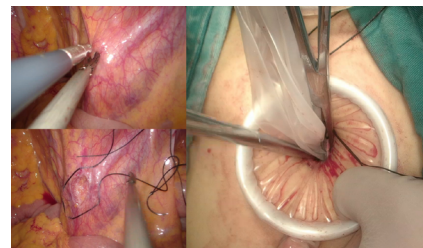


Figure 1 Establishment of the extraperitoneal approach.

Thus we designed an innovative extraperitoneal approach through the same umbilical incision which achieves satisfactory visualization and lymph node

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Transumbilical Laparoendoscopic single-site extraperitoneal approach for lymphadenectomy in fertility-sparing staging surgery of epithelial ovarian cancer

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Video 1 Transumbilical laparoendoscopic single site extraperitoneal approach for fertility sparing staging surgery in ovarian cancer

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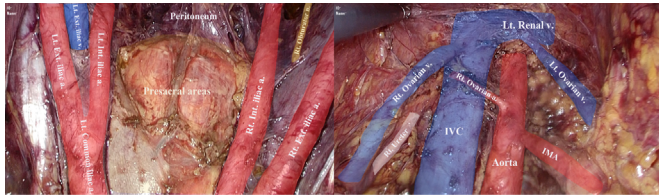


Figure 2 Accomplishment of lymphadenectomy.

retrieval of both pelvic and para-aortic areas.^{3,4} Also, we found that the approach was particularly suitable for fertility sparing because it can maintain an intact peritoneum and reduce intraperitoneal adhesion, which might contribute to a future pregnancy. It also enables easier specimen extraction from the umbilical incision in fertility sparing surgery without hysterectomy compared with multi-port laparoscopy.

Here we demonstrate the procedure steps and advantages of the transumbilical laparoendoscopic single site extraperitoneal approach in fertility sparing staging surgery of epithelial ovarian cancer, with a surgical video and a summary of the case series. The whole surgical procedure was completed through a 2 cm umbilical incision. A purse string suture and incision of the posterior peritoneal incision above the aortic bifurcation were completed under laparoscopy. An appropriate port was inserted into the extraperitoneal space to perform lymphadenectomy. Other concomitant procedures were completed intraperitoneally.

To date, four patients diagnosed with stage I epithelial ovarian cancer with fertility sparing demands were treated with this surgical technique. Mean operative time was 225 min. Mean blood loss was 107.5 mL and no transfusion was required. No intraoperative complications or conversions occurred. Mean postoperative hospital stay was 3.0 days. Final pathology examination revealed a median count of 25.3 for retrieved pelvic lymph nodes and 14.3

for para-aortic nodes. Two patients subsequently became pregnant. The transumbilical laparoendoscopic single site extraperitoneal approach is of great advantage in fertility sparing staging surgery of epithelial ovarian cancer, with promising reproductive outcomes.

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Competing interests None declared.

Patient consent for publication Consent obtained directly from patient(s)

Ethics approval This study involves human participants and was approved by West China Second University Hospital (protocol identification No: 2020150). Participants gave informed consent to participate in the study before taking part.

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