

Ovarian sparing cystectomy for borderline serous tumor through vNOTES (vaginal Natural Orifices Transluminal Endoscopic Surgery)

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vNOTES (vaginal Natural Orifices Transluminal Endoscopic Surgery) is a novel approach to the abdominal cavity. Some authors have reported its efficacy and safety regarding oophorectomy and ovarian cystectomy.¹⁻⁴ Ovarian cystectomy through a 2.5 cm culdotomy is feasible even for large cysts. Furthermore, it is possible to concurrently respect oncologic principles.

In Video 1 we present a 22-year-old patient with pelvic discomfort. She was diabetic, a smoker, and her body mass index was 42.4 kg/m². She had reported an ovarian cyst 5 years ago and her ultrasound scan in 2015 showed an 893 mL unilocular cyst on the left side of the pelvis. Magnetic resonance imaging in 2019 additionally showed a 14 mm solid component inside the cyst.

Since there was bilateral normal ovarian parenchyma at the imaging examinations, increasing the likelihood of tumor benignity,⁵ and because of the reported morbidities, vNOTES ovarian cystectomy with intra-operative frozen biopsy was indicated.

Under general anesthesia, the patient was positioned in stirrups in the Trendelenburg position. Standard sterilization was performed. A 2.5 cm transverse incision was made at the posterior fornix and a self-constructed vaginal port with Alexis and a surgical glove was inserted at this point and CO₂ pneumoperitoneum was inflated to 12 mmHg. Two 5 mm trocars and one 10 mm trocar were connected to the vaginal port. A 30° endoscopic camera was inserted through the 10 mm trocar and an advanced bipolar device (Ligasure blunt tip) and a grasper were inserted through the 5 mm trocars. Peritoneal washing was collected and the abdominal cavity was inspected. The uterus, right ovary, and right tube were normal and there was no sign of implants. A 9 cm cyst attached to the left ovary and firmly adhered to the left tube/mesosalpinx was observed. After left ureter and normal left ovarian parenchyma were identified, cystectomy was performed. The decision was made that the left tube could not be spared because the tube and the broad ligament had firmly adhered to the cyst and eventual dissection of the tube from the cyst would probably leave the tube without adequate vascularization.

An endobag was inserted vaginally to bag the cyst (with adhered left tube) and the opening ring was



Video 1

brought out from the vagina allowing safe cyst ullage. Frozen biopsy reported serous adenoma. The pelvis and abdomen were inspected again, the vaginal port was removed, and the vaginal mucosa was closed with a lock-stitch suture. A vaginal pack was inserted and removed the next day. Surgery time was 120 min and the estimated bleeding was 200 mL.

The final pathology report presented a borderline serous tumor. The case was discussed by the Institutional Tumor Board and it was decided for follow-up semiannually. It is notable that if it was decided to perform omentectomy, it could be done through vNOTES.⁶

The potential advantages of this technique are scarless surgery, expected painless surgery, and expected faster recovery. The limitations of vNOTES are the difficulty in assessing the mesenteric surface (but not too different from conventional laparoscopy), difficulty reaching the upper abdomen, and specific training for vaginal surgery. Some of these limitations can be overcome using gelpoint instead of gloveport and instruments designed for obese patients.

In conclusion, ovarian sparing cystectomy for borderline serous tumor through vNOTES is feasible. Since vNOTES is an evolving technique, it should be reserved for selected cases and oncologic principles must be considered for all cases.

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Video article

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