Serous Borderline Tumor of the Fallopian Tube: A Rare Case Highlighting the Role of Risk-Reducing Salpingo-Oophorectomy

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Introduction

- Ovarian cancer has been associated with origins in the fallopian tubes, although it is rarely detected at this early stage and is typically diagnosed after the disease has advanced.[1]
- As of July 2026, there have been an estimated 21,010 newly diagnosed cases of ovarian cancer.[2] High-grade serous carcinoma (HGSC) represents the predominant histologic subtype of ovarian cancer and is most frequently diagnosed at an advanced stage.[3]
- While serous borderline tumors are relatively well recognized in the ovary, primary paratubal borderline tumors are exceedingly rare, with only sixteen cases reported in the literature as of 2022.[4-5]
- Histologically, paratubal serous borderline tumors resemble ovarian borderline tumors. However, their clinical characteristics, optimal management, and long-term prognosis remain poorly characterized due to the limited number of reported cases.[5]

History of Present Illness

In July 2025, a 54-year-old Caucasian female G0P0000 presented with 7 months of post-menopausal bleeding (6-7 days twice per month), with no improvement despite previous hormone replacement therapy. Additional symptoms included decreased appetite, weakness, decreased bowel movements, and nausea. Zofran was used to decrease nausea. On physical exam, the patient was not in acute distress.

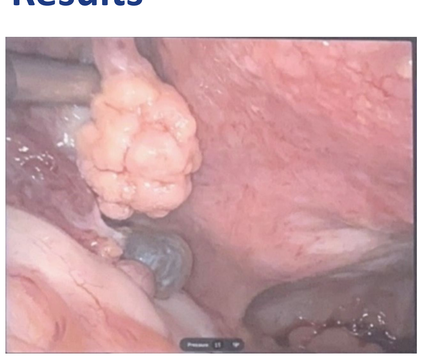
Past Medical History

Cervical dysplasia, cataracts, diverticulitis, hyperlipidemia, hyperprolactinemia, irregular heart beat, mitral valve prolapse, postmenopausal, and shortness of breath, acid reflux

Investigations

- In February 2025, a dilation and curettage biopsy revealed endometrial thickening. A June 2025 transvaginal ultrasound showed a 0.7cm endometrial stripe (an increase of 0.2 cm since February), a nabothian cyst, and a 1.2 x 1.1 x 0.7cm fibroid; uterus and ovary measurements were unremarkable.
- Following ineffective treatment with medroxyprogesterone (Provera) initiated in July 2025, the patient underwent a robot-assisted laparoscopic total hysterectomy with prophylactic bilateral salpingo-oophorectomy in October 2025.

Results



Gross Surgical Findings

- Surgical and gross inspection revealed largely unremarkable fallopian tubes without overt macroscopic malignancy, exhibiting only benign-appearing features (adhesions, paratubal cysts up to 1.4 cm, and a subtle 0.4 cm fimbrial nodule).
- Uterus and bilateral ovaries were grossly non-malignant, showing only small subserosal leiomyomas (up to 0.6 cm) and corpora albicantia.

Histopathology

- **Microscopic Divergence:** Despite the grossly normal appearance intraoperatively, microscopic examination revealed bilateral small foci of serous borderline tumor (SBT) arising in the fallopian tubes alongside paratubal serous cystadenofibroma.
- **Clinical Significance:** Identifies an incidental, pre-invasive/borderline lesion caught early at the microscopic stage via risk-reducing surgery before progression to invasive carcinoma.
- Cervix and endometrium showed no dysplasia or malignancy.

Management

- Prescribed medroxyprogesterone and gradually increasing dose by 20 mg did not decrease bleeding. Due to continued post-menstrual bleeding, a hysterectomy was recommended.
- **Tumor Marker:** Serum CA-125 remained within normal limits at 5-9 U/mL post-op (normal < 35 U/mL).
- **Imaging:** Postoperative CT of the chest, abdomen, and pelvis confirmed no evidence of residual disease, peritoneal spread, or distant metastasis.

Discussion

This patient, which showed no signs of ovarian cancer, reiterates the importance of implementing guidelines stipulated by ACOG for salpingo-oophorectomy for ovarian cancer risk reduction. The removal of the fallopian tubes along with the ovaries allowed early detection of a SBT that carried high risk for transition into a carcinoma. The prophylactic removal of both, the ovaries and fallopian tubes, reduces the risk of potential ovarian cancer in the future.

Take-Home Messages

- This case highlights the fallopian tube as a potential site of origin for ovarian malignancy.
- Prophylactic removal of the fallopian tubes and ovaries may reduce future ovarian cancer risk and can facilitate detection of occult or premalignant lesions.
- Although rare, fallopian tube serous borderline tumors warrant close clinical and pathologic evaluation given their potential for malignant transformation.

References

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