



Mucinous Carcinoma of the Ovary: A Rare Histotype and Incidental Occurrence of Synchronous Primary Gynecological Malignancies

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Introduction

- Ovarian cancer is the most lethal and second most common gynecological cancer¹
- Mucinous carcinomas of the ovary are a rare, malignant histotype of epithelial ovarian cancer^{2,3}
- Metastatic mucinous carcinomas to the ovary are more common than primary mucinous carcinomas of the ovary, with gastrointestinal (GI) and pancreaticobiliary tract origins accounting for the majority of cases^{2,4}
- Primary ovarian mucinous carcinomas account for approximately 5% of mucinous tumors and 3% of ovarian cancers⁵
- Approximately 0.7-1.8% of all gynecologic tumors are synchronous primary malignancies⁶⁻⁸
- Synchronous ovarian and endometrial cancers are detected in 3.3-5.0% of endometrial cancer patients and 2.7-10.0% of ovarian cancer patients⁶⁻⁸
- The U.S. Preventative Services Task Force does not recommend screening the general population for ovarian cancer⁹
- Risk factors include low parity, early menarche, late menopause, estrogen replacement therapy for 5+ years, genetic syndromes (i.e., Lynch syndrome), BRCA gene mutations or family history suggesting genetic predisposition, and obesity¹⁰
- Patients may be asymptomatic; presenting symptoms are non-specific, including fatigue, abdominal fullness, constipation, back pain, nausea, pelvic pain, and urinary symptoms¹¹
- Laboratory testing, such as a CBC, CMP, and serum CA-125 level, should be performed if a patient presents with non-specific symptoms^{9,12}
- Transvaginal ultrasonography is the first line of imaging used to evaluate an adnexal mass; MRI is helpful to assess further indeterminate masses^{9,10,13}

Case Description

History

- A 51-year-old G3P2012 female presented to the clinic with a chief complaint of intermittent post-menopausal bleeding for two weeks
- Patient reported having gone through menopause around the age of 46 and had been on hormonal replacement therapy for five years. She reported a 13–14-year history of oral contraceptive use
- She denied recent weight loss, fevers, chills, night sweats, abdominal bloating, cramping, or foul discharge odor
- Past medical history: diverticulosis, Hashimoto’s thyroiditis, colonic polyps
- Past surgical history: colonoscopy
- Family history: lymphoma (father), melanoma (maternal aunt), breast cancer (cousin), cervical cancer (cousin)
- Social history: alcohol socially, denies tobacco or recreational drug use
- Medications: cholecalciferol 50 mcg tablet PO once daily; levothyroxine 100 mcg tablet PO once daily

Physical Exam

- Vitals: BP 116/74 mmHg | Pulse: 84 bpm | Respirations: 14 breaths per minute | Temperature: 97.5°F | SpO2: 98 (%) on room air
- Alert, well-appearing female, not in acute distress
- Abdomen soft, non-tender, non-distended, normoactive bowel sounds
- Normally developed female genitalia with no external lesions or eruptions
- Speculum exam revealed a small amount of bright red blood from cervical os
- No lesions, erythema, edema, or tenderness of vagina or cervix
- Bimanual and rectovaginal exam failed to reveal any palpable masses or nodules
- Uterus was midline, smooth, not enlarged, and mobile
- No palpable inguinal lymph nodes
- Remainder of physical exam was within normal limits

Diagnostic Results

- Abdominal ultrasound: complex cystic and solid left adnexal mass measuring up to 13.9 cm; endometrial thickening with increased vascularity with the maximum endometrial thickness measured 17.1 mm; 41 mm right unilocular, anechoic, avascular ovarian cyst; no free fluid seen in the pelvis or upper abdomen
- Endometrial biopsy: fragmented endometrium containing focal atypical papillary proliferation
- CA-125 and CEA values were within the normal range preoperatively
- BRCA testing negative
- Routine complete blood count and chemistries were within normal range
- Surgical procedure: exploratory laparoscopy, robotic-assisted hysterectomy, bilateral salpingo-oophorectomy, tumor debulking
- Figures 1 and 2 show the gross image and histopathology of the left adnexal mass

Discussion

Case Outcome

- Final diagnosis: Left ovarian mucinous carcinoma stage IC3 shown in Figures 1 and 2; endometrial adenocarcinoma stage IA ; right ovarian clear cell adenofibroma with borderline features

Recommended Treatment for Ovarian Mucinous Carcinoma

- National Comprehensive Cancer Network guidelines recommend either observation or systemic treatment as adjuvant treatment for stage IC mucinous carcinoma of the ovary¹⁴
- Patient was in favor of chemotherapy over observation
- Yale tumor board consensus opinion: FOLFOX and Avastin every fourteen days for twelve cycles
- Prognosis for patients with stage IC mucinous carcinoma of the ovary is about 94.1%¹⁵

Conclusion

- Mucinous carcinomas of the ovary are a rare histotype of epithelial ovarian cancer
- A thorough histologic, clinical, radiographic, and pathologic evaluation must be performed to establish the correct diagnosis and staging of ovarian cancer
- Given the predominance of mucinous carcinomas in the GI tract, a GI workup should be performed to rule out metastasis to the ovary
- Although mucinous carcinomas of the ovary are rare, providers must be cognizant of the differences in diagnosis and management compared to other ovarian neoplasms

Fig 1. Gross Image of Left Adnexal Mass



Fig 2. Histopathology of Adnexal Biopsy

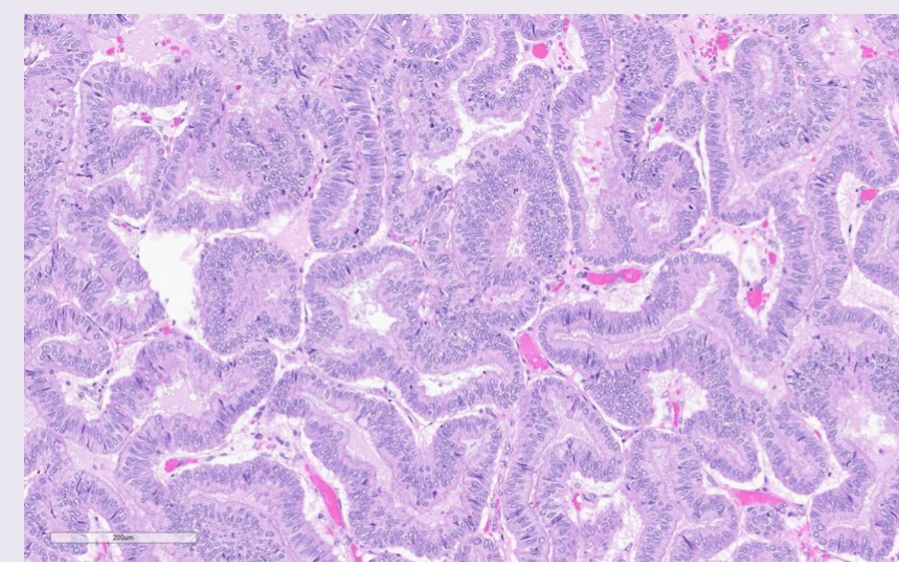


Table 1. Differential Diagnosis of Adnexal Mass

Primary ovarian carcinoma	Metastatic carcinoma to the ovaries
Benign ovarian tumor	Functional ovarian cyst
Endometrioma	Ovarian torsion
Endometriosis	Tubo-ovarian abscess
Uterine fibroid	Ectopic pregnancy

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