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SYNCHRONOUS PRIMARY SEROUS CYSTADENOCARCINOMA OF THE OVARY AND ENDOMETRIOID CARCINOMA OF THE ENDOMETRIUM IN A POSTMENOPAUSAL WOMAN: A CASE REPORT

Obstetrics & Gynaecology

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ABSTRACT

Background: Synchronous primary cancers of the female genital tract are uncommon, accounting for approximately 1–2% of all gynaecological malignancies. The most frequent combination involves the endometrium and the ovary, often presenting at an early stage and carrying a relatively favourable prognosis. Distinguishing synchronous primaries from metastatic disease is critical because management and prognosis differ substantially.**Case Presentation:** A 52-year-old nulliparous postmenopausal woman with type 2 diabetes mellitus and hypertension presented with three months of postmenopausal bleeding and one week of white vaginal discharge. Speculum examination revealed a 1 × 2 cm cervical polyp with otherwise healthy cervix and vagina. Bimanual examination demonstrated a normal-sized, retroverted, mobile uterus with a full, non-tender right fornix. Imaging showed a large (12.3 × 17.3 × 21 cm), well-defined cystic adnexal lesion. Serum CA-125 was elevated while CEA was within normal limits. The patient underwent staging laparotomy with intraoperative frozen section, total abdominal hysterectomy with bilateral salpingo-oophorectomy, total omentectomy, and pelvic lymph node dissection. A multiloculated right ovarian cyst (18 × 20 cm) containing chocolate-brown fluid was identified, with a normal uterus and contralateral adnexa. Final histopathology confirmed serous cystadenocarcinoma of the right ovary (FIGO Grade 1, pT1b pN0) and endometrioid endometrial carcinoma (FIGO Grade 1, pT1a pN0). The postoperative course was uneventful, and the patient was referred for adjuvant therapy planning.**Conclusion:** Synchronous primary ovarian and endometrial cancers should be considered in postmenopausal women with concurrent abnormal bleeding and an adnexal mass. Comprehensive surgical staging with intraoperative frozen section is essential for accurate diagnosis and optimal management.

KEYWORDS

Endometrial Neoplasms; Ovarian Neoplasms; Carcinoma, Endometrioid; Cystadenocarcinoma, Serous; Postmenopause.

INTRODUCTION

Gynaecological malignancies remain a major contributor to cancer-related morbidity and mortality among women worldwide, with an estimated 1.4 million new cases reported globally in 2020.[1] Endometrial carcinoma is now the most commonly diagnosed gynaecological cancer in high-income countries, while ovarian carcinoma carries the highest case-fatality ratio among female reproductive tract tumours.[1]

Epithelial ovarian cancer accounts for approximately 90% of all ovarian malignancies, with serous histology constituting around 60% of cases.[2] Within the serous category, low-grade tumours represent a distinct entity characterised by relatively indolent behaviour, frequent KRAS or BRAF mutations, and a more limited response to platinum-based chemotherapy compared with their high-grade counterparts.[2] Endometrioid carcinoma, on the other hand, is the predominant histological subtype of endometrial cancer, comprising 75–80% of cases, and is typically associated with unopposed oestrogen exposure and a generally favourable prognosis when detected at an early stage.[3]

The simultaneous occurrence of two histologically distinct primary tumours in the female genital tract is uncommon, with synchronous primary cancers of the endometrium and ovary reported in approximately 1–2% of all gynaecological malignancies and in up to 5–10% of women diagnosed with either ovarian or endometrial cancer.[4] Differentiating synchronous primaries from a metastatic process — particularly when both tumours share endometrioid morphology — remains a recognised diagnostic challenge with substantial therapeutic and prognostic implications.[5] We report a case of synchronous primary serous cystadenocarcinoma of the ovary and endometrioid endometrial carcinoma in a postmenopausal nulliparous woman, highlighting the clinical, surgical, and histopathological considerations involved.

CASE PRESENTATION

A 52-year-old nulliparous woman presented to our outpatient department with a three-month history of intermittent postmenopausal bleeding and one week of associated white vaginal discharge. She had attained natural menopause ten years prior and reported no prior gynaecological surgeries. Her medical history was significant for type 2 diabetes mellitus and systemic hypertension, both under regular pharmacological control. There was no personal or family history of breast, ovarian, endometrial, or colorectal malignancy. The patient denied weight loss, abdominal pain, urinary symptoms, or altered bowel habits.

On general examination, the patient was conscious, oriented, and haemodynamically stable. Abdominal examination revealed a non-tender, soft abdomen without any clinically palpable masses, organomegaly, or free fluid. Per speculum examination demonstrated a small endocervical polyp measuring approximately 1 × 2 cm protruding from the cervical canal; the cervix and vagina were otherwise healthy without erosion, growth, or ulceration. Bimanual pelvic examination revealed a normal-sized, retroverted, mobile uterus, a full but non-tender right fornix, and a free, non-tender left fornix.

Routine haematological and biochemical investigations were within acceptable preoperative limits. Random blood sugar and blood pressure were well controlled at the time of admission. Tumour marker assessment showed an elevated serum CA-125 with a normal carcinoembryonic antigen (CEA) level. Pelvic ultrasonography followed by contrast-enhanced computed tomography demonstrated a large, well-defined, predominantly cystic lesion measuring approximately 12.3 × 17.3 × 21 cm arising from the right adnexa, without obvious solid components, ascites, or evidence of distant spread. The uterus and contralateral adnexa appeared unremarkable on imaging.

Following multidisciplinary discussion and informed written consent, the patient was scheduled for staging laparotomy with intraoperative frozen section. Intraoperatively, a multiloculated right ovarian cyst measuring approximately 18 × 20 cm and containing chocolate-brown fluid was encountered (Figure 1). The uterus, fallopian tubes, and left adnexa appeared grossly normal. Peritoneal washings were collected for cytological evaluation. Frozen section examination of the right ovarian mass was reported as a malignant epithelial neoplasm. Based on this finding, the procedure was extended to a comprehensive staging operation comprising total abdominal hysterectomy with bilateral salpingo-oophorectomy, infracolic omentectomy, and bilateral pelvic lymph node dissection. On opening the uterine cavity

ex vivo, a small focal endometrial growth was identified and submitted separately for histopathological examination.

Definitive histopathological evaluation confirmed the dual pathology: serous cystadenocarcinoma of the right ovary (FIGO Grade 1, pT1b pN0) and endometrioid carcinoma of the endometrium (FIGO Grade 1, pT1a pN0) (Figure 2). All sampled lymph nodes, the omentum, and the contralateral ovary were free of malignancy, and peritoneal washings were negative for malignant cells. The postoperative course was uneventful, with timely removal of the urethral catheter, early mobilisation, and resumption of oral feeds. The patient was discharged on the seventh postoperative day with stable vital parameters and a healthy abdominal wound. She was subsequently referred to the medical oncology service for adjuvant therapy planning, and at the most recent follow-up remains clinically well on regular three-monthly review with serum CA-125 monitoring.

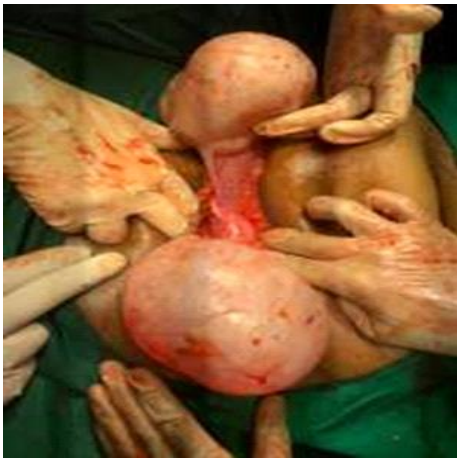

Figure 1. Intraoperative photograph showing the multiloculated right ovarian cystic mass (approximately 18 × 20 cm) with adjacent normal-appearing uterus and left adnexa.

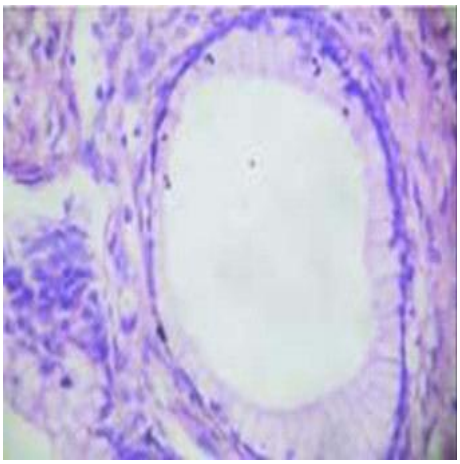

Figure 2. Photomicrograph (Haematoxylin & Eosin stain, high-power view) showing the glandular epithelial architecture corresponding to the dual epithelial pathology demonstrated on histopathological examination.

DISCUSSION

Synchronous primary cancers of the ovary and endometrium represent an uncommon but well-recognised clinical entity. Reported series suggest an overall incidence of 1–2% among all gynaecological malignancies, although the reported frequency rises to 5–10% among women diagnosed with either ovarian or endometrial cancer.[4,6] The peak age at presentation is generally a decade earlier than for sporadic endometrial or ovarian cancer, with most cohorts reporting median ages between 45 and 55 years. Our patient, at 52 years and 10 years post-menopause, falls within this characteristic demographic range.[6]

The two histologies most commonly encountered in this setting are endometrioid endometrial carcinoma and endometrioid ovarian carcinoma, often raising the diagnostic dilemma of synchronous primaries versus metastatic disease.[7] The criteria proposed by Ulbright and Roth, and subsequently refined by other investigators, remain widely applied: synchronous primaries are favoured when both tumours are confined to their organs of origin, when there is no direct extension between them, when the histology and grade differ, when the endometrial tumour shows an associated atypical hyperplasia or the ovarian tumour shows associated endometriosis, and when there is no evidence of lymphovascular invasion at unusual sites.[7,8] More recently, molecular and clonality analyses have demonstrated that even tumours sharing endometrioid morphology in both sites are frequently clonally related, suggesting that some apparently "synchronous" cases may in fact represent metastatic disease with a particularly favourable biology.[9] In our patient, the two tumours showed unequivocally distinct histology — serous cystadenocarcinoma of the ovary and endometrioid carcinoma of the endometrium — supporting the diagnosis of true synchronous primaries with little diagnostic ambiguity.

The clinical presentation in our case combined features attributable to both malignancies. Postmenopausal bleeding, the cardinal symptom of endometrial pathology, is reported in up to 90% of women ultimately diagnosed with endometrial carcinoma and warrants prompt evaluation in any postmenopausal woman.[10] The concurrent presence of a large adnexal mass with elevated CA-125 raised legitimate concern for ovarian malignancy and prompted comprehensive imaging and tumour marker assessment. Risk factors in our patient — nulliparity, type 2 diabetes mellitus, and hypertension — are recognised contributors to the type I endometrial carcinoma pathway and may also overlap with risk profiles for low-grade serous ovarian neoplasia.[10]

Standard surgical management of presumed early-stage ovarian cancer comprises comprehensive staging laparotomy with peritoneal washings, total abdominal hysterectomy, bilateral salpingo-oophorectomy, infracolic omentectomy, and bilateral pelvic and para-aortic lymphadenectomy, supplemented as required by appendicectomy and multiple peritoneal biopsies.[11] The 2023 FIGO staging update for endometrial cancer further emphasises the integration of molecular classification (POLE-mutated, mismatch repair-deficient, p53-abnormal, and no specific molecular profile groups) into routine staging, with significant implications for adjuvant treatment selection and prognostication.[12] In our patient, intraoperative frozen section played a pivotal role in tailoring the surgical extent in real time and prevented the need for a second-look operation. Both tumours were ultimately staged as FIGO Stage I, conferring an overall five-year survival exceeding 80% in most contemporary series.[6,11]

What makes this case noteworthy is the unusual combination of two histologically distinct early-stage primaries identified during a single surgical episode in a postmenopausal nulliparous woman, with the endometrial component clinically silent on preoperative imaging and detected only on careful gross and microscopic examination of the uterine specimen. This underscores the importance of routine comprehensive uterine evaluation — including opening of the specimen on the operating table and dedicated histopathological assessment — even when preoperative work-up directs attention primarily toward an ovarian lesion.

CONCLUSION

Synchronous primary cancers of the ovary and endometrium, although uncommon, should be considered in postmenopausal women presenting with concurrent abnormal uterine bleeding and an adnexal mass. Careful surgical staging, intraoperative frozen section, and systematic histopathological evaluation of both organs are essential to distinguish synchronous primaries from metastatic disease and to define the appropriate adjuvant strategy.

This case reinforces the principle that the discovery of one gynaecological malignancy does not preclude the coexistence of another. A high index of suspicion, a multidisciplinary approach, and adherence to current FIGO staging recommendations together translate into early diagnosis, complete surgical management, and the favourable long-term outcomes that are typical of early-stage synchronous gynaecological primaries.

DECLARATIONS

Patient Consent: Written informed consent was obtained from the patient for publication of this case report and any accompanying clinical photographs and histopathological images. The patient's identity has been kept strictly confidential, and all directly identifying information has been omitted.

Conflict of Interest: None declared.

Ethical Approval: Not applicable for individual case reports as per institutional policy. Where required, institutional approval and a waiver of formal ethics committee review were obtained.

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