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CASE REPORT

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Synchronous primary endometrium and ovarian carcinoma: A case report

Yasoda Rijal[1] | **Suraj Shrestha**[1] | **Laxmi Bogati**[2] | **Priyanka Regmi**[1] | **Sushi Shrestha**[1] | **Prabesh Luitel**[3] | **Chandra Narayan Yadav**[4] | **Bishal Khaniya**[4] | **Suvana Maskey**[4]

[1]Institute of Medicine, Tribhuvan University Teaching Hospital, Kathmandu, Nepal

[2]Manipal Medical College, Kathmandu University, Pokhara, Nepal

[3]Kathmandu Medical College, Kathmandu University, Kathmandu, Nepal

[4]Department of Gynecology and Obstetrics, Tribhuvan University Teaching Hospital, Kathmandu, Nepal

Correspondence
Suraj Shrestha, Institute of Medicine, Tribhuvan University Teaching Hospital, Kathmandu, Nepal.
Email: multisurazz@gmail.com

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1 | INTRODUCTION

Synchronous tumors of the female genital tract are rare comprising only about 1% of all genital malignancies.[1–3] The most common synchronous tumor is synchronous endometrial and ovarian cancer, accounting for 50%–70% of all.[1] However, most cases are metastatic arising from one organ and simultaneous primary cancer involving both organs is uncommon.[4]

As the incidence of synchronous primary endometrial and ovarian carcinoma (SPEOC) is limited, it can easily be confused with endometrial cancer with ovarian metastasis.[5] Thus, it is often challenging to diagnose such separate independent primary tumors and mandates careful consideration of the number of lesions, and histological and immunohistochemical features as the two entities have different therapeutic and prognostic implications.[6]

We report a case of a 38-year-old woman with an endometrioid variant of synchronous primary endometrial and left ovarian carcinoma.

2 | CASE PRESENTATION

A 46-year-old $P_{3+1}L_3$ regularly menstruating presented with a complaint of excessive per vaginal bleeding during the menstrual cycle for the past year and a half. She used 4–5 pads/day, fully soaked with the passage of clots without dysmenorrhea. There was no history of intermenstrual bleed, post-coital bleed, and dyspareunia. Also, there was no other illness and no history of malignancy in the family.

On examination, she had a BMI of 25.2 kg/m^2 and her vitals were normal. Per abdominal examination was unremarkable. Per speculum examination revealed a healthy cervix with a bloodstain. On per vaginal examination, there was a left adnexal mass around 6×5 cm, firm to solid cystic, smooth, mobile, and non-tender with the groove felt between the mass and uterus. Routine investigations and tumor markers were sent with suspicion of an ovarian mass. (Table 1).

Transvaginal ultrasound showed a complex solid cystic lesion measuring 6.9×5.3 cm with the fatty component

within the left adnexa and a 3.3 × 2 cm heteroechoic well-defined lesion arising from the posterior wall of the body of the uterus likely fibroid with normal endometrial thickness. CT scan of the abdomen and pelvis revealed approximately 7.1 × 4.8 × 4.5 cm well-defined heterogeneous solid cystic lesion in the left adnexa. The solid components showed heterogeneous enhancement in post-contrast images. Medially, the mass was abutting the urinary bladder wall, laterally it was abutting the common iliac vessel and superiorly the bowel loops. The uterus was bulky measuring approximately 9.6 × 5.2 cm with mild heterogeneous collection noted in the endometrial cavity. (Figure 1) All the features were suggestive of left ovarian neoplasm.

TABLE 1 Routine investigation and tumor markers

Parameter	Reference Range
Tumor Markers	
a. LDH–287 U/L	140–280 U/L
a. Beta-HCG–2.3 mIU/ml	<5 mIU/ml
a. AFP–4.18 ng/ml	<7.51 ng/ml
a. CEA–5.54 ng/ml	<3 ng/ml
a. CA-125–48 U/ml	<35 U/ml

Endometrial biopsy was also done which showed atypical endometrial hyperplasia.

After the positive frozen section pathological examination in the ovaries, the patient underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy with bilateral pelvic and para-aortic lymphadenectomy, omentectomy, appendectomy, and peritoneal biopsies. (Figure 2) Intraoperatively, there was an irregular mass of around 6 × 6 cm arising from the left ovary. A cross-section of the ovary revealed fatty material and cheesy material inside. There was no internal septation or papillary projection. The uterus was 10 cm with the body and cervix 7 and 3 cm respectively with a rough towel appearance. Myometrial thickness was 3 cm with endometrial hyperplasia noted. The endocervical canal was empty. (Figure 3) Her post-operative period was unremarkable and was discharged on the 4th postoperative day.

Histopathology of the excised specimens revealed endometrioid endometrial carcinoma and left ovarian endometroid carcinoma with histological grade 2. The tumor was limited to the inner half of the myometrium and 5 mm within the capsule of the ovary. Lymphovascular invasion was not seen. (Figures 4 and 5) Owing to the financial constraint and unavailability of immunohistochemical analysis, the immunotyping

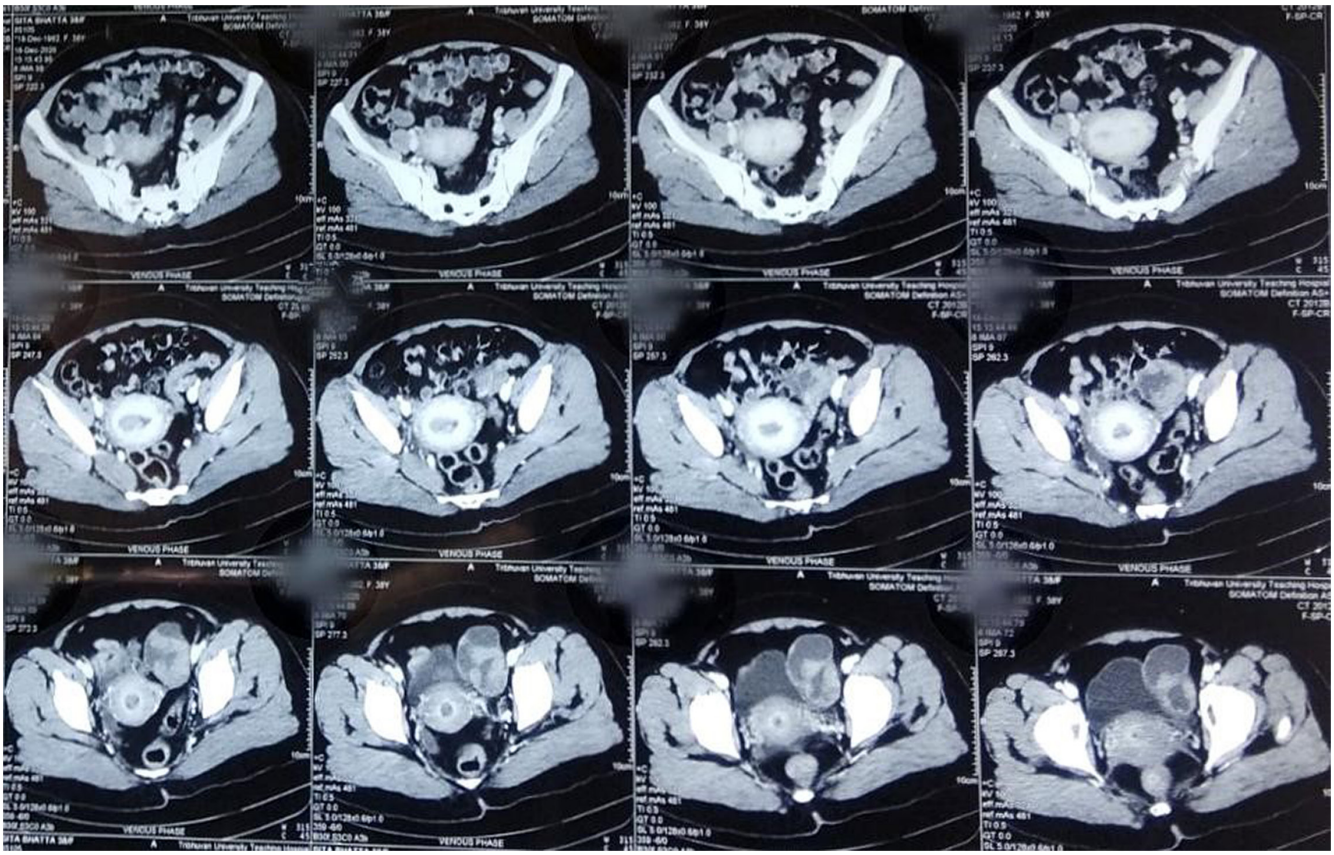

FIGURE 1 CT scan of abdomen and pelvis shows a well-defined heterogeneous solid cystic lesion in the left adnexa; features suggestive of ovarian neoplasm.

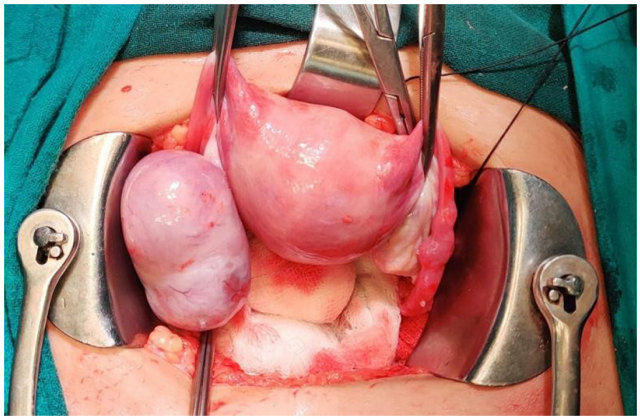

FIGURE 2 Intraoperative image showing bulky left ovary

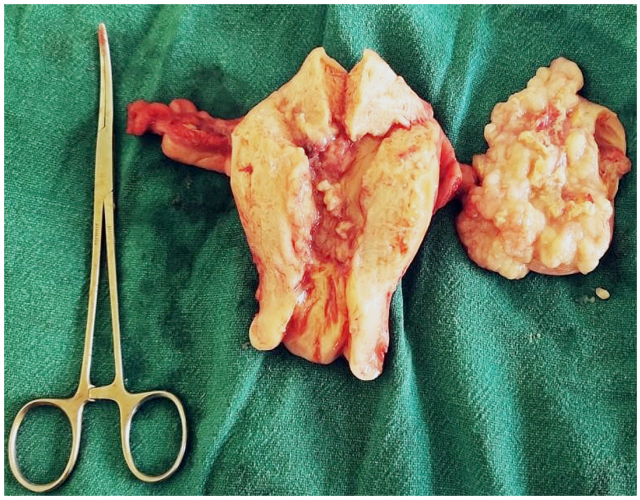

FIGURE 3 Specimen of the excised uterus and the left ovary which shows fatty/cheesy material with no projections or septations and an empty endocervical canal.

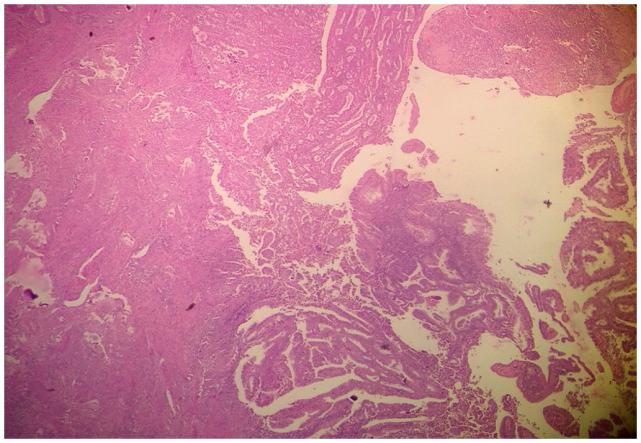

FIGURE 4 Section from endometrium shows tumor cells lined by pseudostratified columnar epithelium showing mild nuclear polymorphism. Invasion into less than half of the myometrium is seen without lymphovascular and perineural invasion.

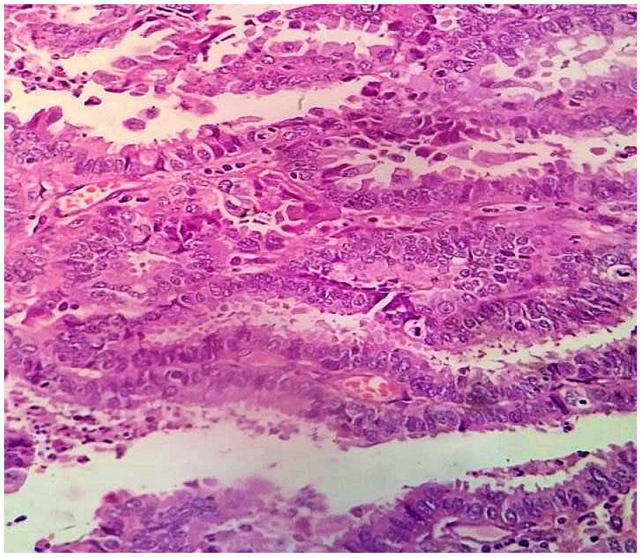

FIGURE 5 Section from left ovary shows tumor cells arranged in papillae, tubules, and micropapillae showing moderate atypia. Tumor cells have a moderate amount of eosinophilic to granular cytoplasm, vesicular nuclei, and inconspicuous nucleoli without capsular invasion.

of the tumor was not performed. Peritoneal cytological washing and biopsies, as well as lymph nodes, were negative for malignant cells. The final diagnosis of synchronous FIGO Ia endometrioid endometrial carcinoma and FIGO Ia endometrioid ovarian carcinoma was made. The patient is disease-free at 9 months of follow-up with no evidence of recurrence.

3 | DISCUSSION

SPEOC is found in approximately 10% of all females with ovarian cancer and 5% of all females with endometrial cancer. As the entity is uncommon, it is often misdiagnosed as FIGO stage III of endometrial cancer or FIGO stage II of ovarian cancer.[5] The majority of women with SPEOC are 41–54 years old, 40% of them are nulliparous, 2/3 of them are premenopausal, and 1/3 are obese.[7] In the reported case, the patient is multiparous, premenopausal, and had a BMI of 25.4 kg/m^2. Moreover, SPEOC is observed among the younger age group as compared to endometrial or ovarian cancer alone.[8]

As with this case, abnormal uterine bleeding is the most common presentation of synchronous endometrial and ovarian cancer, though some patients may present with pelvic pain or a palpable pelvic mass.[7] In ultrasonography, most of the ovarian masses in SPEOC appear as unilateral multilocular-solid or solid masses but such ovarian masses in cases of endometrial cancers with ovarian metastasis are

often solid masses bilaterally.[9] Our patient also had a solid-cystic lesion in her left ovary only supporting this statement.

The endometroid subtype of the primary tumors is the most common histological finding which is found in 50%–70% of cases and the primary independent tumors are often grade 1 or 2.[7] In the reported case, it was the endometrioid subtype with histological grade 2. The development of the surface epithelium of the ovary from the embryological Mullerian duct and sharing of estrogen receptors in predisposed tissues are the likely reasons for their synchronous growth.[10] Because of this common histological finding in both the localization, differentiation of the primary origins from primary endometrial cancer with metastases to ovaries, or primary ovarian cancer with metastases to the endometrium is pivotal.[11] In our case, histology revealed no evidence of metastasis as the tumor from the section of endometrium was limited to the inner half of the myometrium and 5 mm within the capsule of the ovary without lymphovascular invasion.

Although primary surgery has been recognized as the main treatment for SPEOC, whether adjuvant therapy should be administered remains controversial. Using FIGO guidelines, a patient with dual primaries limited to the ovary and the uterus represents two Stage I cancers. Systematic surgical staging is the mainstay of the management for such patients and often includes total abdominal hysterectomy with bilateral salpingo-oophorectomy, total omentectomy, appendectomy, pelvic and para-aortic lymphadenectomy, and complete resection of all diseases.[10] Considering the positive frozen section examination, our patient too underwent the aforementioned staging surgery.

These patients have a good prognosis and depending on the substage may not require radio or chemotherapy. However, no guidelines for adjuvant therapy in patients with synchronous cancers have been established yet and the treatment of respective cancer guides the adjuvant treatment. In ovarian cancer, all but stage IA/B are to receive chemotherapy and in endometrial cancer, it is indicated when the risk of distant metastasis is high.[11] Considering stage Ia of the ovarian tumor, adjuvant chemotherapy was not given to our patient.

The prognosis of patients with synchronous endometrial and ovarian carcinoma is better than the patients with single-organ cancer with ovarian or endometrial spread with the median 5-year disease-free survival (DFS) rate reported to be 65% for synchronous endometrial and ovarian cancer but is less than 50% for stage IIIA endometrial cancer with ovarian spread.[12,13] A review of 43 cases of SPEOC showed that nine patients had recurrence (20.93%). The median time to recurrence was 10 months (range, 5–30). The five-year survival rate of the patients was 86.05%.[8] Also, in a large series study with 84 cases, a favorable prognosis among patients with concordant endometrioid tumors of the endometrium and ovary was observed, with median survival approaching 10 years.[12] In addition, a study of double cancer in 1500 patients showed that the prognosis improved with younger age (less than 55 years), earlier stage, lower stage, the premenopausal state, and lymph node dissection.[13] Also, synchronous primary endometrial and ovarian cancer endometroid types have better overall survival than patients with non-endometrioid or mixed histologic types.[14] Considering all, the prognosis of our patient is good and our patient is now disease-free at 9 months of surgery and is under regular follow-up.

4 | CONCLUSION

Synchronous endometrial and ovarian tumors are rare variants of gynecological cancers. However, young women with endometrial cancer can have synchronous ovarian cancer. They must be differentiated from either primary endometrium or ovarian tumors with metastasis.

AUTHOR CONTRIBUTIONS

Suvana Maskey (SM), Bishal Khaniya (BK), and Chandra Narayan Yadav (CNY) involved in study concept, data collection, and surgical therapy for the patient. Yasoda Rijal (YR), Suraj Shrestha (SS), Chandra Narayan Yadav (CNY) involved in writing—original draft preparation. Laxmi Bogati (LB), Priyanka Regmi (PR), Sushi Shrestha (SS), and Prabesh Luitel (PL) helped in editing and writing. SM and BK are the senior authors and helped in manuscript reviewer. All the authors read and approved the manuscript.

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None.

DATA AVAILABILITY STATEMENT

All the necessary data and materials are within the manuscript.

CONSENT

Written informed consent was obtained from the patient and her husband for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

ORCID

Yasoda Rijal https://orcid.org/0000-0002-3977-8755
Suraj Shrestha https://orcid.org/0000-0001-6888-260X

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