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Case Report

An Incidental Sertoli-Leydig Cell Tumor in a Perimenopausal Woman with Abnormal Uterine Bleeding: A Case Report

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ABSTRACT
Introduction: Sertoli-Leydig cell tumors (SLCTs) are rare ovarian tumors, accounting for less than 0.5% of all ovarian tumors, typically seen in younger women with virilization, their presentation in perimenopausal women without androgenic features is uncommon. We report a rare case of a 50-year-old female with complaints of heavy menstrual bleeding who underwent total abdominal hysterectomy for uterine fibroids, where an incidental omental SLCT was discovered intraoperatively. The diagnosis of SLCT was confirmed by histology and immunohistochemistry reports.
Conclusion: This case highlights the importance of intraoperative vigilance and complete excision of unexpected peritoneal masses to avoid missed diagnoses of rare extra-ovarian malignancies and the crucial role of immunohistochemistry in identifying rare tumors with atypical presentation.

Keywords: Abnormal Uterine Bleeding, Omental Mass, Ovarian Neoplasms, Perimenopause, Sertoli-Leydig Cell Tumor.

INTRODUCTION

Sertoli-Leydig cell tumors (SLCTs) are rare neoplasms belonging to the sex cord-stromal category of ovarian tumors. They typically occur in women under 40 years of age and are often characterized by signs of hyperandrogenism, including virilization, menstrual irregularities, and the presence of a pelvic mass. In contrast, SLCTs in perimenopausal or postmenopausal women may present without these hallmark features, rendering diagnosis more difficult. Moreover, while SLCTs are usually confined to the ovary, their occurrence in extra-ovarian sites is exceedingly uncommon. We report a rare case of an SLCT arising from the omentum in a perimenopausal woman, identified incidentally during a hysterectomy performed for abnormal uterine bleeding. From a surgical oncology perspective, unexpected extra-ovarian masses encountered during routine gynecologic surgery pose diagnostic and management challenges, particularly when oncologic behavior cannot be predicted intraoperatively.

Case Presentation

A 50-year-old multiparous woman (P4L2) presented with a one-year history of heavy menstrual bleeding. Her cycles were regular, lasting 5–6 days, with excessive flow requiring 10–12 sanitary pads per day. There was no history of abdominal distension, weight loss, or appetite loss. Notably, she had no symptoms of hyperandrogenism, including hirsutism, voice changes, or clitoromegaly. Her medical and surgical history was unremarkable.

On examination, the patient was hemodynamically stable with mild pallor. Abdominal examination revealed a firm, irregular, non-tender midline mass corresponding to a 16-week gravid uterus. Vaginal examination confirmed an enlarged uterus of similar size, with free and non-tender fornices.

Pelvic ultrasonography demonstrated a mildly bulky anteverted uterus measuring 11.98 × 7.49 × 7.46 cm, with a thickened endometrium of 21 mm. Multiple small heterogeneous hypoechoic lesions were noted within the

myometrium, suggestive of fibroids with adenomyotic changes. Color Doppler showed no significant vascularity. Endometrial aspiration revealed hyperplasia without atypia, and cervical cytology was negative for malignancy.

Given persistent symptoms, the patient was planned for total abdominal hysterectomy. Intraoperatively, the uterus was enlarged to 16–18 weeks' size, and both ovaries and fallopian tubes appeared grossly normal. An unexpected firm, lobulated omental mass measuring approximately 8 × 7 cm, with focal calcifications, was identified near the left adnexa. The mass was excised in toto and sent for histopathological examination. Considering the patient's age and uncertain nature of the mass, bilateral salpingo-oophorectomy was performed. No lymphadenopathy or additional peritoneal abnormalities were identified.

Gross examination of the omental mass revealed a solid, gritty cut surface (Fig.1). Microscopy showed neoplastic cells arranged in diffuse sheets and tubules, with uniform nuclei and eosinophilic cytoplasm. There was no significant atypia or increased mitotic activity. Examination of the uterus, fallopian tubes, and ovaries revealed no evidence of neoplasia, confirming the absence of a primary ovarian tumor.

Immunohistochemical analysis demonstrated strong positivity for inhibin, calretinin, S-100, vimentin, and pan-cytokeratin, while SALL4 was negative, excluding a germ cell tumor (Fig. 2). These findings were consistent with a diagnosis of Sertoli–Leydig cell tumor. Serum inhibin B levels were within normal limits. Whole-body PET-CT showed no evidence of residual or metastatic disease.

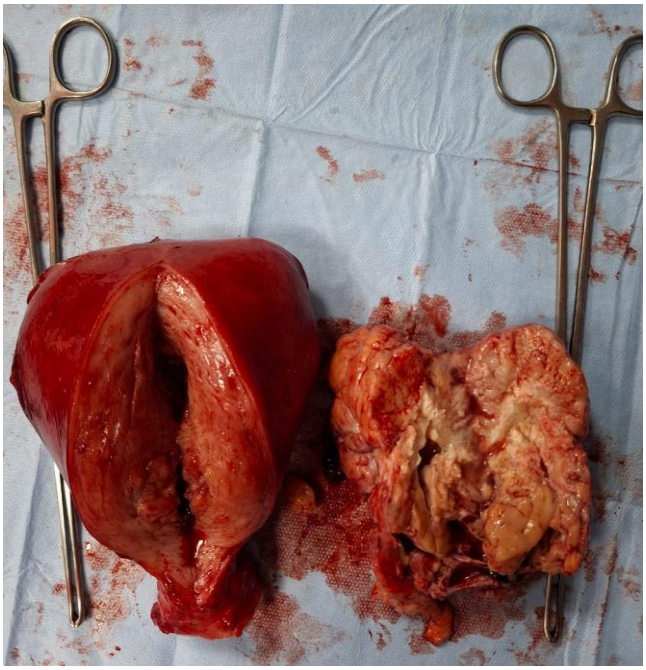

Fig.1: Gross Specimen of Uterus Showing Myohyperplasia along with Solid Omental Mass

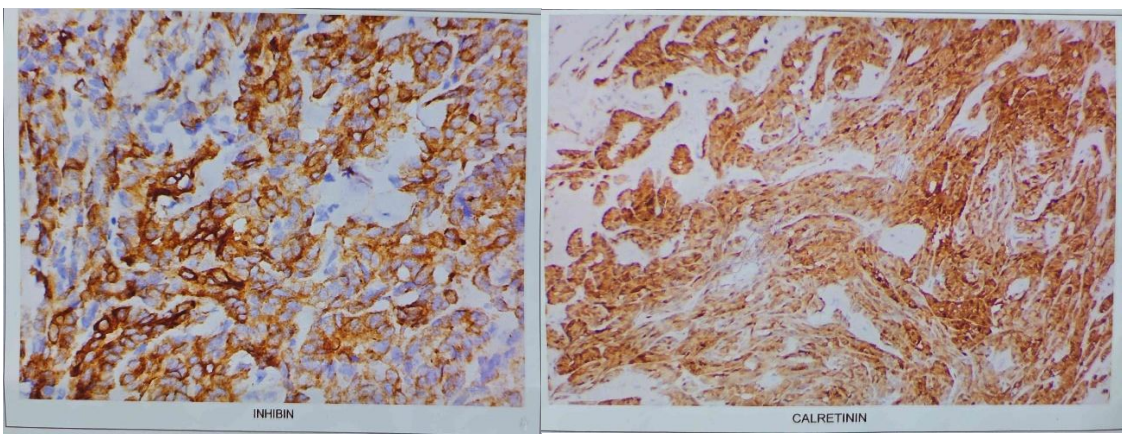

Fig.2: Immunohistochemistry Showing Positivity for Calretinin and Inhibin

DISCUSSION

Sertoli-Leydig cell tumors (SLCTs) are rare ovarian sex cord-stromal neoplasms that predominantly affect women under 40 years of age. They classically present with androgen excess symptoms such as hirsutism, voice deepening, or secondary amenorrhea. An increasing trend of hormonally inactive tumors without virilization is seen in peri- and postmenopausal patients, which complicates preoperative diagnosis. Verma et al. also reported a comparable atypical presentation without virilization, underscoring the diagnostic challenge [1].

The incidental identification of an SLCT within the omentum in the absence of any gross ovarian involvement, as in our patient, is exceptionally rare. Although bilateral tumors or extra-ovarian spread has been described; such behavior is reported in a small minority of cases, likely <2% and typically in advanced disease [4].

Immunohistochemistry is the key for diagnosis, with inhibin, calretinin, and S-100 being the most consistently positive markers, while SALL4 is used to exclude germ cell tumors. These marker profiles are consistent with the observations of Tsuzuki et al. which supported our diagnosis [2].

Most SLCTs are unilateral and confined to the ovary; extra-ovarian disease is unusual but documented, including omental involvement in advanced or bilateral tumors, as described by Rathna et al. [4]. In our case, the restriction of the tumor to the omentum with no macroscopic or microscopic ovarian disease is highly uncommon, to our knowledge, not previously detailed in the literature.

Surgical resection is the cornerstone of treatment. In patients beyond reproductive age or when intraoperative findings are indeterminate, total abdominal hysterectomy with bilateral salpingo-oophorectomy is appropriate. Adjuvant chemotherapy may be considered in the presence of adverse features-poor differentiation, tumor rupture, heterologous elements, or higher stage. As Rahmouni et al. note, the decision is individualized in the absence of standardized protocols and limited prospective data [3].

Although SLCTs have been associated with pathogenic DICER1 variants, particularly in younger patients and syndromic contexts, the relevance of this association in sporadic, late-onset, extra-ovarian tumors remains unclear. The absence of ovarian disease, lack of recurrence on imaging, and hormonally inactive behavior in this patient suggest that routine genetic testing may not be mandatory in all perimenopausal presentations. However, awareness of this association remains important for individualized risk stratification, especially in cases with bilateral disease, recurrence, or family history of DICER1-related neoplasms.

In the present case, the incidental discovery of a firm omental mass in a perimenopausal woman prompted complete excision and subsequent bilateral salpingo-oophorectomy, despite grossly normal ovaries. This decision reflects a pragmatic oncologic approach when the nature of an unexpected mass cannot be reliably determined intraoperatively. The case highlights the balance between avoiding under-treatment of a potentially malignant lesion and preventing unnecessary radical surgery, reinforcing the role of surgical judgment in such rare scenarios.

CONCLUSION

This case describes an exceptionally rare presentation of a Sertoli–Leydig cell tumor arising from the omentum in a perimenopausal woman without ovarian involvement or androgenic features. It underscores the importance of careful intraoperative assessment and complete excision of unexpected peritoneal masses. The case also highlights the indispensable role of immunohistochemistry in diagnosing rare tumors with atypical presentations and reinforces the need for individualized surgical decision-making in gynecologic oncology.

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Ethics Statement

The authors have nothing to report. This case report describes an individual patient and does not involve experimental or interventional research requiring institutional review board approval.

Funding

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Consent

Informed consent for publication of this case and accompanying images was obtained from the patient.

Conflict of Interest

The author declares no conflicts of interest related to this publication.

Disclosure

The authors have nothing to disclose. No part of this article has been previously published/ presented in abstract form.

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