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Case Report

Paraovarian Tumor of Borderline Malignancy: A Case Report

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Abstract

Paraovarian tumors of borderline malignancy (PTBM) are exceedingly rare, with only slightly over 60 cases reported worldwide. This report presents the case of a 22-year-old nulliparous patient who incidentally discovered a left paraovarian mass during a routine abdominal ultrasound. Subsequent MRI revealed a 2.5×2.1 cm cystic lesion located in close proximity to, but outside of, the left ovary, with no other pathological findings. A laparoscopic cystectomy was performed with meticulous care to prevent tumor spillage, and the patient experienced an uneventful recovery. Histopathological examination unveiled irregularly shaped tissue measuring 2.2×1.2×1 cm, characterized by fibrous tissue/wall with spindle cell stroma and an epithelium displaying features consistent with a serous borderline tumor. Our multidisciplinary team recommended diligent follow-up. This case contributes to the existing literature on PTBM and highlights the imperative for additional cases to enhance our comprehension of the optimal management of these exceedingly rare tumors.

Keywords

adnexal mass, fertility-sparing, low malignant potential, paratubal, paraovarian

INTRODUCTION

Paraovarian cysts (POCs), located between the fallopian tube and the ovary, comprise around 10% of adnexal masses.[1] While their precise occurrence remains uncertain, they are estimated at roughly 3% in the general population, peaking in the third and fourth decades of life.[1] Predominantly benign, these cysts are often asymptomatic and discovered incidentally during clinical examinations.[1] Treatment usually involves laparoscopic cystectomy, guided by factors like cyst size and patient age.[1,2] However, rare cases of malignant or borderline tumors exist, posing diagnostic challenges due to similarities in symptoms and imaging features with benign cysts. Given the lack of specific treatment guidelines, reporting such cases becomes crucial. This report presents a case of a 22-year-old woman with a pelvic mass near the left ovary.

CASE REPORT

A 22-year-old nulliparous female presented as an outpatient at our institution with a pelvic mass located in close proximity to the left ovary. The patient did not report any symptoms, had no significant medical history and had a negative family history for malignancy.

The discovery of the mass was incidental during a routine outpatient abdominal ultrasound. Outpatient transvaginal

ultrasound (TVUS) revealed a cystic lesion measuring 2.5 cm in size, closely associated with the left ovary. The lesion exhibited numerous echogenic papillary projections on the cyst wall. Subsequent MRI of the lower abdomen confirmed the presence of a cystic lesion measuring 2.5×2.1 cm, located in close proximity to the left ovary but outside of it ***(Figs 1-4)****. This lesion contained smaller nodules inside, with a maximum diameter of 4 mm. Laboratory assessments, including tumor markers, yielded normal results (CA-125: 10.7 U/mL, CEA: 0.97 ng/mL, CA 15-3: 11 U/mL, AFP: 2.83 IU/ml, CA 19-9: 3.30 U/mL, HE-4: 47.11 pmol/l).*

The patient underwent laparoscopic cystectomy, during which a laparoscopic bag was used and no tumor spillage was observed within the abdominal cavity. Subsequently, the patient experienced an uneventful postoperative recovery and was discharged from the hospital on the first postoperative day. The pathology report described a grayish mass with irregular dimensions of 2.2×1.2×1 cm, identified as the wall of a ruptured cystic lesion (macroscopic report). Microscopically, examination revealed the presence of fibrous tissue with occasional spindle cell stroma, as well as an epithelium displaying histopathological features consistent with a serous borderline tumor (World Health Organization 2020[3]) ***(Figs 5-7)****.*

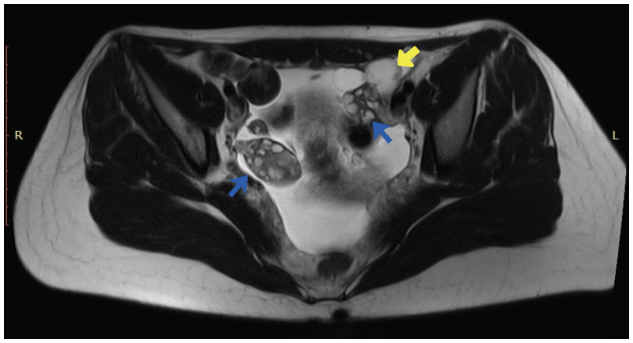

Figure 1. MRI T2-weighted examination of small pelvis. Right and left ovaries appear normal (blue arrows). The PTBM is in contact with, but outside of, the left ovary (yellow arrow, axial plane).

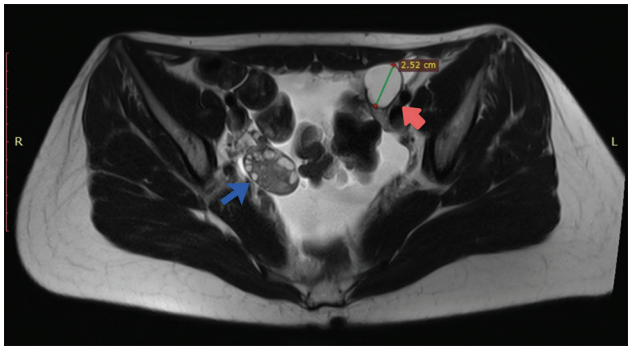

Figure 2. MRI T2-weighted examination of PTBM. Right normal ovary (blue arrow) and the PTBM measuring 2.52 cm (red arrow, axial plane).

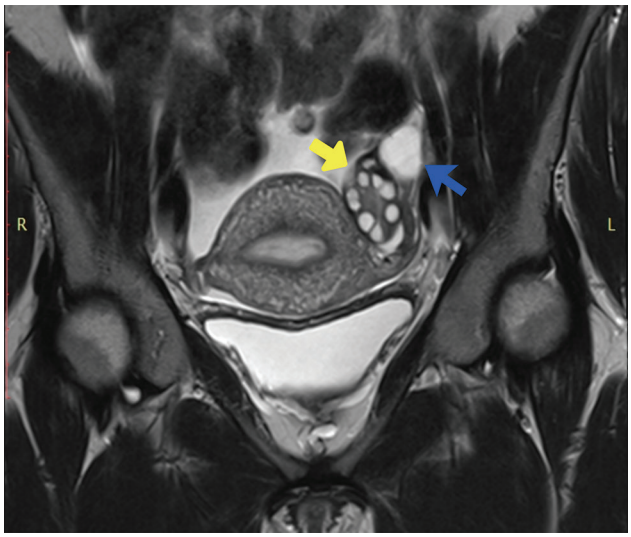

Figure 3. MRI T2-weighted examination of uterus, left ovary and PTBM. The PTBM (blue arrow) appears to be in contact with, but outside of the left normal ovary (yellow arrow, coronal plane).

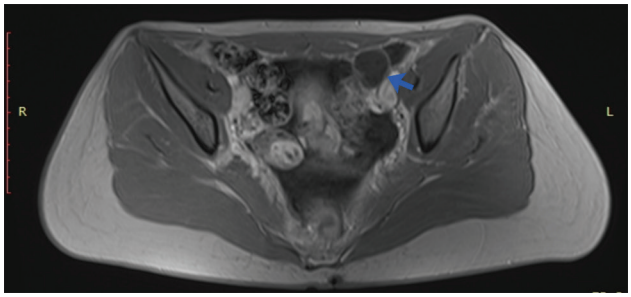

Figure 4. MRI T1-weighted examination of small pelvis. PTBM (blue arrow, axial plane).

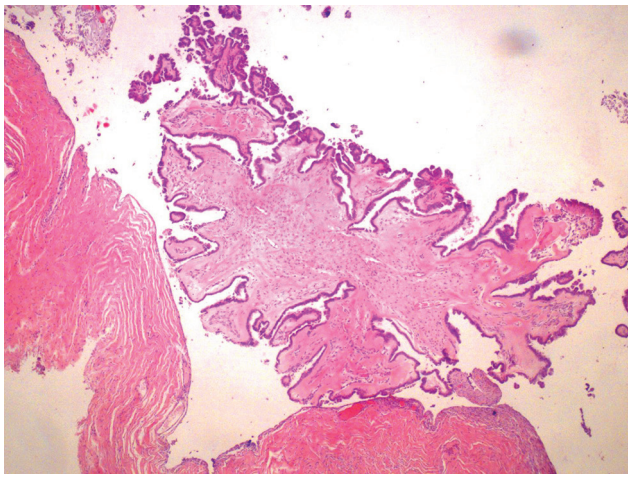

Figure 5. Hematoxylin and eosin staining (×40). Fibrous cystic wall with complex branching papillary stromal proliferation lined by epithelium with areas of epithelial proliferation (>10% of the tumor epithelium).

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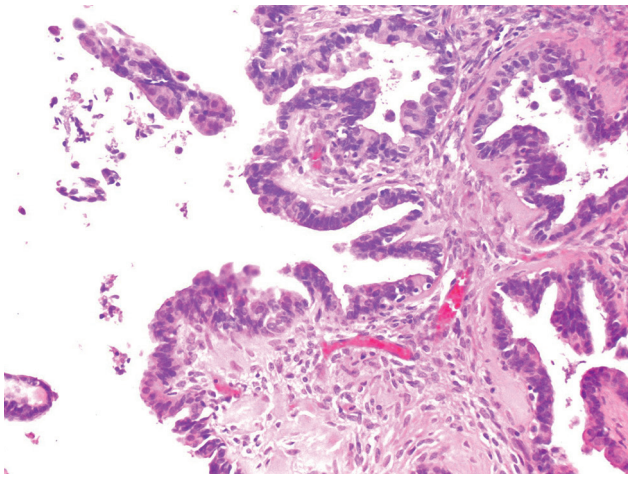

Figure 6. Hematoxylin and eosin staining (×200). Papillary architecture with cuboidal to columnar serous type cells with tufting and nuclear atypia.

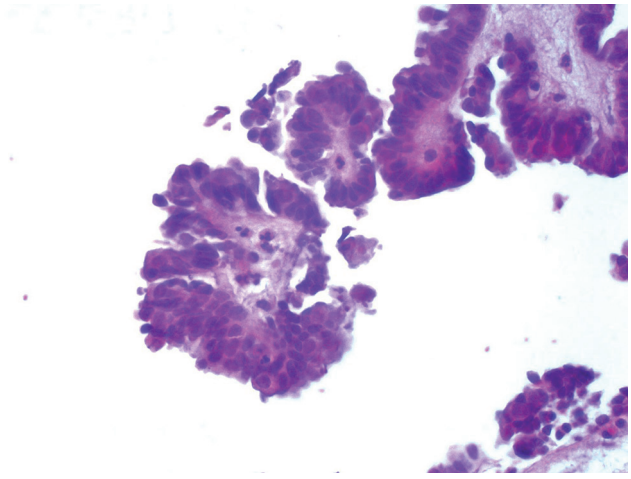

Figure 7. Hematoxylin and eosin staining (×400). Uniform mild cytologic atypia, epithelial pseudostratification and tufting, without prominent mitotic activity.

The patient's case was thoroughly reviewed by our multidisciplinary team, and a decision was made to proceed with close follow-up examinations. No further interventions were planned unless remaining disease was detected. Remarkably, the patient remained disease-free at the 12-month follow-up mark. Images in this publication have been used with the explicit written consent of the patient involved, ensuring adherence to ethical standards and patient confidentiality.

DISCUSSION

While PTBM are rare and often asymptomatic, their diagnosis poses challenges. Imaging techniques, such as ultrasound, CT, and MRI, provide limited preoperative specificity.[4] Histologically, PTBM exhibit distinct features, resembling ovarian borderline tumors.[2] Yet, due to their infrequency, establishing standardized guidelines for their treatment remains challenging.

The range of surgical interventions for PTBM is guided by factors such as patient age and fertility considerations. These procedures span from fertility-preserving surgeries to more extensive interventions like hysterectomy.[4,5] The absence of standardized protocols for specific procedures in managing PTBM, such as lymphadenectomy or omentectomy, highlights the need for clearer guidelines in this domain.

Given the rarity of PTBM, devising specific treatment guidelines presents a significant challenge. Typically, due to patients' age demographics, there's a preference for fertility-preserving surgeries along with vigilant postoperative surveillance.[5-8] Conversely, patients without the intent to maintain fertility may undergo more comprehensive surgical measures, such as hysterectomy along with bilateral salpingo-oophorectomy. Considering the young age of our patient, we opted for a fertility-sparing approach, coupled with careful monitoring. Our case highlights the intricacies in diagnosing PTBM and emphasizes the urgent need for standardized management protocols for these uncommon conditions.

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Параовариальная опухоль пограничной злокачественности: клинический случай

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Резюме

Параовариальные опухоли пограничной злокачественности (ПОПЗ) встречаются чрезвычайно редко: во всём мире зарегистрировано лишь немногим более 60 случаев. В этом сообщении представлен случай 22-летней нерожавшей пациентки, у которой случайно во время планового УЗИ брюшной полости было обнаружено образование в левой параовариальной области. Последующая МРТ выявила кистозное поражение размером 2.5×2.1 см, расположенное в непосредственной близости от левого яичника, но за его пределами, без каких-либо других патологий. Лапароскопическая цистэктомия была проведена с особой осторожностью, чтобы предотвратить распространение опухоли, и пациентка выздоровела без происшествий. Гистопатологическое исследование выявило ткань неправильной формы размером 2.2×1.2×1 см, характеризующуюся фиброзной тканью/стенкой со стромой веретенообразных клеток и эпителием, имеющим признаки, соответствующие серозной пограничной опухоли. Наша мультидисциплинарная бригада рекомендовала тщательное последующее наблюдение. Этот случай дополняет существующую литературу по ПОПЗ и подчёркивает необходимость дополнительных случаев для улучшения нашего понимания оптимального лечения этих чрезвычайно редких опухолей.

Ключевые слова

образование придатков, сохранение фертильности, низкий потенциал злокачественности, паратубальный, параовариальный