Borderline mucinous tumor arising in a paratubal cyst: a case report

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Summary

Background: Paratubal borderline tumors (PBTs) are found incidentally at frozen section or permanant pathology, and are extremely rare. We describe the first case of a paratubal borderline mucinous tumor (PBMT). *Case report*. A 20-year-old woman was referred with a complex right adnexal mass on pelvic sonogram. She underwent laparoscopic paratubal cyst enucleation. We used an endobag for cyst extraction. Cyst rupture or tearing of the endobag in the laparoscopic field was absent. Frozen section analysis was reported as a borderline mucinous tumor of low malignant potential. Currently, she has had no evidence of disease recurrence after a laparoscopic fertility-sparing staging procedure. *Conclusion*. A proper preoperative differential diagnosis of an adnexal mass is difficult. Thus, laparoscopy is needed in large or symptomatic cysts. Although growth, torsion and malignancy are rare in paratubal cysts, the possibility of tumor seeding should be excluded with use of an endobag.

Key words: PBMT, Paratubal cyst, Laparoscopy.

Introduction

Tumors of low malignant potential (LMP) originating in the fallopian tube and paratubal cysts are found to be extremely rare. Paratubal cysts are unusually large enough to be clinically significant and may be incidental findings. Borderline ovarian tumors (BOTs) often occur in reproductive-age women, generally behaving in a benign fashion. However, they can exist with metastatic disease and recur. BOTs account for 10-15% of all ovarian tumors. However, after a review of the literature borderline tumors arising in a paratubal cyst have been in a total of two previously reported cases, one being endometrioid [1] and one serous [2]. We report the first case of a paratubal borderline mucinous tumor (PBMT).

Case Report

A 20-year-old, nulliparous woman was referred with a one month history of a complex adnexal mass. Abdominal-pelvic CT scan revealed a 10 x 7.6 x 9.4 cm multi-lobulated cystic adnexal mass that contained an enhancing solid portion. There was no lymphadenopathy or ascites. Preoperative CA125 level was normal, and laparoscopy was performed. On laparoscopic inspection, the 10 x 8 cm paratubal cyst was located in the ampullary and fimbrial region of the right fallopian tube (Figure 1). Firstly, we obtained fluid for peritoneal cytology by washing with normal saline in the cul de sac and both paracolic gutter. Afer such, she underwent laparoscopic right paratubal cyst enucleation without cyst rupture. We used an endobag for extraction of the removed cyst. Rupture of the cyst was performed in the endo-bag. Frozen section analysis indicated a borderline mucinous tumor of low malignant potential (LMP) with areas suspicious for invasion. On examination of other internal organs and after peritoneal inspection there were no suspicious areas of metastasis. The patient underwent fertility sparing comprehensive surgical staging including right salpingo-oophorectomy, partial omentectomy, appendectomy, and bilateral pelvic lymphadenectomy. The ovary and fallopian tube were grossly unremarkable. The specimen of tumor consisted of multiple fragments of cystic mass, measuring 9 x 7.5 cm. The inner surface showed 5.3 x 2 x 0.6 cm in size multiple papillary excrescences. The microscopic finding is shown in Figure 2. The epithelium lining the papillae was remarkable for stratification and tufting. There were focally significant nuclear atypia and a tiny focus of stromal invasion. The stroma underlying the proliferating epithelium was fibrotic and focally hyalinized. In the final pathologic report, paratubal tumor was classified as a borderline mucinous tumor (BMT) of endocervical-like subtype with microinvasion and intraepithelial carcinoma (IECa). She was assigned as Stage Ia. The patient underwent no further therapy and is currently free of disease 30 months after the initial surgery.

Discussion

Paratubal cysts represent approximately 10% of all adnexal masses and the reported incidence of malignancy is about 2-3% [3]. They most frequently occur in premenopausal patients. Although growth, torsion and malignancy are rare in paratubal cysts, laparoscopy can be needed in large or symptomatic cysts. Papillary projections on the cyst wall should be searched carefully, as in our case, for the possibility of cystadenoma, adenofibroma and borderline tumor. There have been a total of 16 previously reported cases of tumors of LMP of the fallopian tube and paratubal cysts in the literature since 1966, ten being serous, four mucinous, and two endometrioid type. While endometrioid and serous borderline tumors arising in a paratubal cyst have been reported [1, 2], our case is the first report in the literature of PBMT. Previously reported BMTs have been associ-

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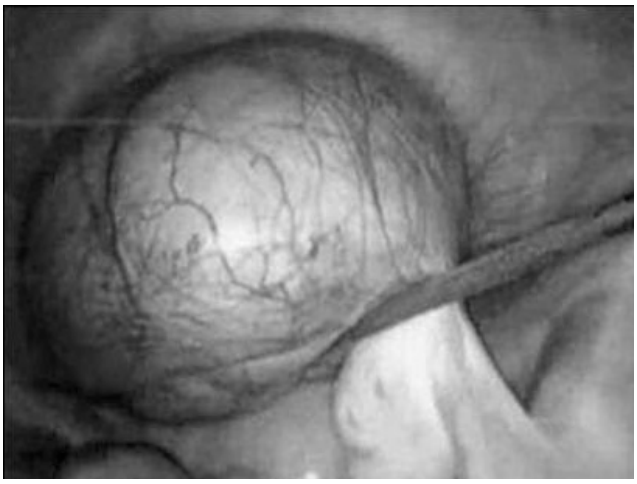
Fig. 1



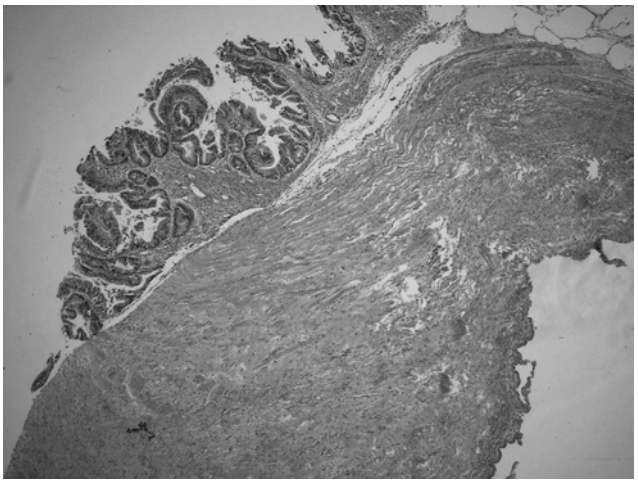


Fig. 2

Figure 1. — Laparoscopic view of fallopian tube with tumor completely independent of the normal ovary.
Figure 2. — A small amount of tearing of normal tubal structure attached to an enucleated papillary tumor (HE x 40).

ated with pseudomyxoma peritonei. The tumors occurred in the fallopian tube and had secreted mucinous material via the fimbrial end of the fallopian tube into the peritoneal cavity thus causing pseudomyxoma peritonei [4]. In this case, the tumor consisted of a cyst attached to the tube and independent of the lumen. Thus, it did not cause pseudomyxoma peritonei and may be better regarded as a paratubal lesion. BMTs have been subclassified into intestinal and endocervical-like subtypes. Pseudomyxoma peritonei is common in the intestinal type. Our case was the endocervical-like subtype. This type accounts for 5-15% of BMT. Single BMT may include IECa and microinvasion because of the heterogeneity of mucinous tumors. Our patient showed both IECa and microinvasion. Cancer progression rate of BMT is 1.6% and for tumors including IECa it is 6% [4]. There is no evidence-based recommendation for paratubal borderline tumors as yet, and clinical manifestation has been extrapolated from tumors of LMP of the ovary. Many young patients who have not completed childbearing can be safely treated with unilateral salpingo-oophorectomy after surgical staging for preserving fertility. In our case, the patient underwent laparoscopic cyst extraction without intraperitoneal rupture and fertility sparing staging surgery. Although the incidence of recurrence and cancer progression for borderline tumors are low, laparoscopic surgeons should be aware of the possibility of tumor seeding. Although laparoscopy for borderline tumors is controversal, laparoscopy of PBMT may be carefully performed without trocar site leakage or rupture of the cyst content by use of an endobag and skillful gynecologic oncology staff.

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