

Serous Borderline Tumor of the Fallopian Tube: A Case Report and Literature Review

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ABSTRACT

Paratubal cysts account for 5-20% of all adnexal lesions. Malignant modifications seldom arise in the paratubal cysts that are usually known as primary carcinomas of fallopian tube. Paratubal borderline tumors are very infrequent conditions and until now only sixteen cases of primary paratubal borderline tumors have been previously reported in the literature. Herein, we describe a rare paratubal serous borderline tumor occurring in a woman of reproductive age and provide insights into its management. A 32-year-old woman referred to Imam Hussein Hospital, Tehran with chief complaint of amenorrhea for the last year and transvaginal sonography (TVS) report indicating a 68×74 mm persistent right adnexal cyst from 10 months ago. The patient was candidate for laparotomy and due to the report of paratubal serous borderline tumor in frozen section she underwent right total salpingectomy and infracolic omentectomy. No evidence of recurrence or metastasis was observed after 3 years of follow up. Persistent adnexal cysts need to be evaluated precisely even in young women in order to rule out the malignancy of fallopian tubes.

Keywords: Fallopian tube, Fallopian tube cancer, Fallopian tube neoplasm, Paratubal cyst



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Introduction

Paratubal cysts are accounted for approximately 10% of all adnexal masses. Adenomatoid cyst, serous cystadenoma, and adenofibroma are the most prevalent recognized histological tumors of paratubal cyst (1). Malignant modifications seldom arise in paratubal cysts that are usually known as primary carcinomas of fallopian tube, predominantly adenocarcinomas. However, borderline ovarian tumors compose 4-14% of all ovarian neoplasms, atypical proliferative tumors or borderline tumors of fallopian tubes, which are very rare and was first published by Zhen et al. in 1996 (2, 3). Thus, there is not enough acknowledgment about it (1, 4). These tumors are generally distinguished in permanent pathology assessment which could be as serous, mucinous or endometrioid differentiations. The histopathological appearance of paratubal borderline tumors (PBTs) is comparable to the ovarian borderline

tumors and there is no stromal invasion, but the clinical characteristics, treatment, and prognosis are not well known. There is no standard care for the PBTs. It seems that comprehensive surgical staging surgery should be done and fertility-sparing surgery should be considered in the patients who desire fertility. In a review of the medical literature, 16 cases of primary PBT have been published to date. Herein, we describe a very rare case of paratubal serous borderline tumor occurring in a young woman and provide insights into its management.

Case Presentation

A 32-year-old woman gravid 1, para 1, referred to Imam Hussein Hospital as a tertiary center with chief

complaint of amenorrhea for the last one year. Transvaginal sonography (TVS) revealed a persistent right adnexal cyst measured 68×74 mm from 10 months ago but her recent TVS showed a right adnexal 83×55 mm cyst with some mural echogenic nodules, with the greatest dimension 14×10 mm suggestive for paratubal cyst in favor of malignancy changes. Tumor markers (CA125, AFP, CA19-9, βHCG) were within the normal ranges. In her past medical history, she was a known case of polycystic ovary syndrome, hypothyroidism, and hyperreactive airway disease. There was no family history of cancer.

Laparotomy with a Pfannenstiel incision was done. There was no ascites in the pelvic and abdominal cavity. Peritoneal washing was performed. Exploration of the entire peritoneal cavity showed no abnormal finding except for a paratubal cyst located adjacent to the fimbriae region of the right fallopian tube that was primarily cystic with papillary surface. The left and right fallopian tubes and ovaries were grossly

unremarkable. Paratubal cystectomy without rupture of the cyst was done. Frozen sections were reported with paratubal serous borderline tumor. Then the patient underwent right total salpingectomy and infracolic omentectomy. Lymphadenectomy was omitted. The patient was discharged from the hospital on the fourth postoperative day though. The final pathology was consistent with paratubal borderline serous tumor.

On microscopic examination, there was a papillary configuration (Figure 1) and nuclear stratification and hyperchromasia without stromal invasion (Figure 2). Evaluation of the right fallopian tube revealed adenomatoid hyperplasia (Figure 3). The omentum was free of tumor.

She didn't need adjuvant therapy based upon the literature review. The patient was followed up with serial TVS and tumor markers every 6 months for the first two years. She was asymptomatic and without any evidence of recurrence or metastasis after 3 years.

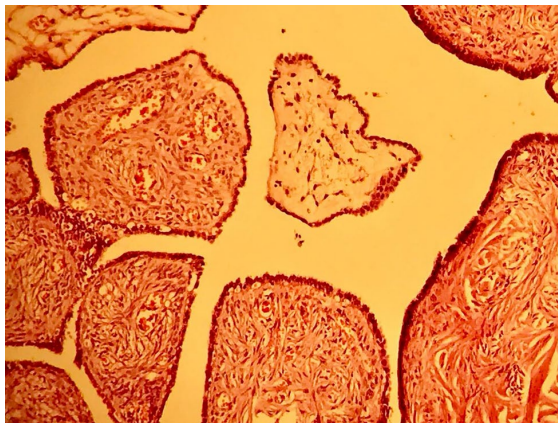


Figure 1. Paratubal cyst showing papillary configuration (H & E staining, low power field x 100).

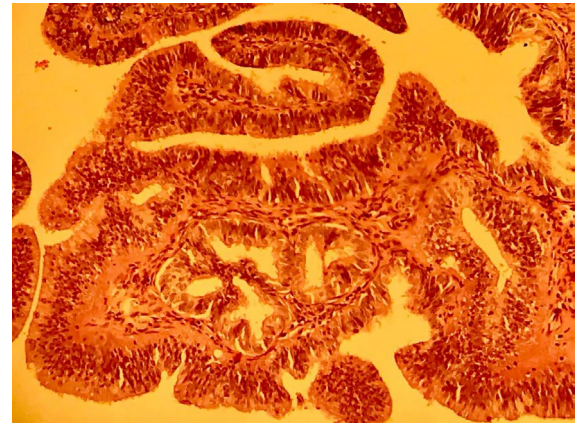


Figure 2. Fallopian tube showing epithelial hyperplasia (H & E staining, Medium power field x 200)

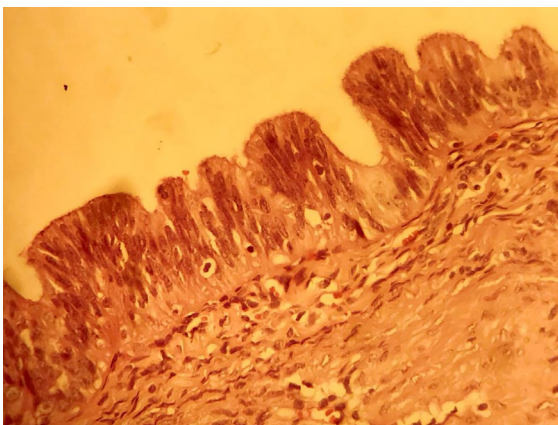


Figure 3. Fallopian tube serous borderline tumor reveals nuclear stratification and hyperchromasia without stromal invasion (H & E staining, high power field x 400)

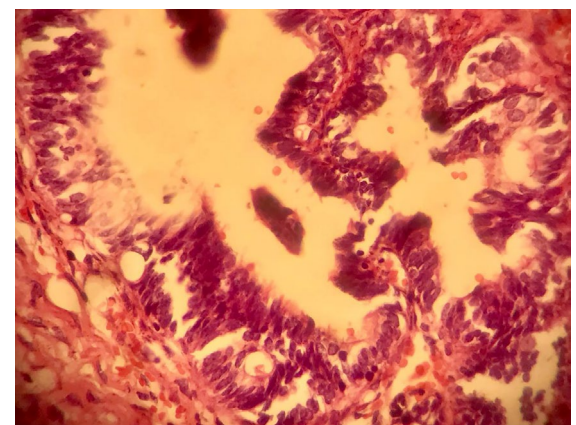


Figure 4. Fallopian tube showing marked epithelial cells hyperplasia as an adenomatous feature (H & E staining, high power field x 400)

Discussion

Paratubal cysts account for 5-20% of all adnexal lesions. They are believed to arise from paramesonephric (Mullerian) duct but might also be of mesonephric or mesothelial origin and most are benign (5). However, paratubal cysts are asymptomatic that were recognized incidentally by imaging or intraoperatively. They sometimes make clinical problems due to enlargement or torsion and present with abdominal pain (1, 6). Rarely, malignant changes occur within the cyst. By now, 16 cases of primary PBTs have been previously reported in the literature, of which fourteen cases were serous PBTs, 1 case was a mucinous PBT and one was an endometrioid PBT. Two cases of serous PBTs were reported in a postmenopausal woman (61 and 85 years old) and a 3-year-old female that was associated with Klippel–Trenaunay syndrome. The age of the patients ranged from 3 to 85 years and the average age was 34 years old. All reported cases were unilateral (1, 4, 6-17). They usually present with simple cysts and rarely with complex cysts in gross examination (similar to our patient). The cysts sizes observed in the literature were from 1 to 16 cm, and in the present case it was 10 cm. In microscopic evaluation, features of the paratubal serous borderline tumors were similar to those seen in the ovary, which includes epithelial proliferation and complexity without stromal invasion. The marked nuclear atypia and delineating characteristics of the serous intraepithelial carcinoma should also not be present (16). Fertility-sparing surgery with comprehensive surgical staging is reasonable, whereas the majority of patients are of reproductive ages and desire to maintain fertility, and also most of the PBTs are unilateral. The acceptable fertility-sparing surgery for the women who want to maintain fertility include ipsilateral salpingectomy and paratubal cystectomy in serous borderline tumors of the fallopian tube and paratubal serous borderline tumors, respectively. If childbearing is completed, bilateral salpingo-oophorectomy with total hysterectomy (TAH+BSO) is recommended. Adjuvant chemotherapy is likely unnecessary. Up to now, no cases of metastatic disease or invasive implants in borderline tumors of fallopian

tube have been documented. Also, there are no confirmed reports of recurrence in the patients with paratubal borderline neoplasm.

In this case, paratubal serous borderline tumor occurred in a young woman who was willing to fertility and therefore, fertility preservation surgery was done. At the follow-up of three years, the patient was asymptomatic and no pathologic finding was observed in the examination or imaging.

Conclusion

By now, the principles of management of fallopian tube borderline tumors are mainly based upon the articles related to the ovarian borderline tumors and therefore, the proper diagnosis and adequate management are challenging. More cases are needed to realize the pattern and prognosis of these tumors exactly and to make definite recommendations. Persistent adnexal cysts need to be evaluated even in young women to rule out malignancy. Paratubal borderline tumors should be considered in the differential diagnosis of the persistent adnexal cyst.

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Ethical Approval

Informed consent was provided for the purpose of publication of images and other clinical information in this case report. Also, in this paper, no identifiable personal details are included.

Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of the present article.

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