

RECURRENT STAGE I BORDERLINE SEROUS OVARIAN TUMOR

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Borderline ovarian tumors (BOT) are epithelial tumors with a low rate of growth and low malignant potential (LMP). They account for 5%-20% of all ovarian tumors.¹ These tumors tend to occur in younger patients, and often in a stage of disease earlier than the invasive epithelial carcinomas.

In about 50% of cases, the tumors are discovered through incidental examinations.² However, patients may present with diverse symptoms, including abdominal pain, distension, abnormal bleeding, urinary symptoms or primary infertility. The overall recurrence rate of the disease is 4.6%, compared with 2.1% for stage I disease, 7.1% for stage II, and 14.4% for stages III and IV of the disease.³ Long-term follow-up of patients with BOT is required, as the tumor can recur up to 20 years after the initial diagnosis, especially in later stages.¹ In contrast, however, stage I serous ovarian BOT rarely, if ever, recurs.⁴

The patients at highest risk for recurrence are those over the age of 70 years, patients with stage II or III tumors, and those whose histology is not of the serous type.⁵ We report a case of recurrence of stage I borderline serous cystadenoma in the preserved ovary after initial resection of the tumor.

Case Report

A 19-year-old nulliparous patient presented with abdominal pain and distension of two months' duration. She had a previous history of laparotomy and left ovarian cystectomy for a 20-cm size pedunculated, semi-solid ovarian tumor two years previously. The diagnosis turned out to be an ovarian serous papillary tumor of borderline malignancy. Unfortunately, there was no mention of a surgical staging during this operation. The tumor marker CA 125 was elevated three-fold preoperatively, but fell back to normal after the operation. A second-look laparotomy for staging purposes and multiple biopsies

from both ovaries and the peritoneum one year after the original laparotomy were negative for malignancy.

Two years after the initial laparotomy, a third laparotomy was performed, and a huge multicystic left ovarian cyst, 20x19 cm in size, and a small right ovarian cyst of 3x4 cm in size were found. Frozen sections of the cysts revealed both to be borderline ovarian tumors. Unilateral left-sided salpingo-oophorectomy and right-sided ovarian cystectomy, partial omentectomy, multiple peritoneal and para-aortic lymph node biopsies were performed. Peritoneal wash for cytology was negative for malignancy, and the tumor was classified as stage I.

Histopathology of the tumor confirmed borderline serous cystadenoma in both ovaries (Figures 1 and 2). The patient's postoperative recovery was satisfactory, and she was given cisplatin chemotherapy. There was no recurrence during the four-year follow-up. The repeat CA 125, which was elevated ten-fold prior to the third laparotomy, fell back to normal values.

Discussion

The diagnosis of BOT is based on the histopathological finding that is characterized by epithelial proliferation greater than that seen in benign tumors of the corresponding cell type. The gross pathology usually consists of multicystic mass. Reports suggest that serous BOTs have a 38%-40% rate of bilaterality, while mucinous BOTs are bilateral in only 6%.¹ The specific histologic criteria of BOT vary, however, depending upon the cell type, for example, serous BOT shows epithelial stratification, atypia, mytotic activity and tufting in the absence of destructive stromal invasion.⁶

Factors associated with poor prognosis in BOT include aneuploidy, micro-invasive disease, residual disease after primary surgery, cytologic atypia, and high mytotic index.¹ Patients with such criteria are at a comparatively high risk of relapse and death, compared with patients without, and those who present with higher stages of disease have, more often than not, features associated with a poor prognosis.¹

BOTs are staged using the FIGO criteria developed and applied to invasive ovarian carcinomas.¹ Most BOT present as stage I lesion (50%-80%), while stage III lesions occur in 8%-35% of cases.⁷ Fifty percent of BOT are

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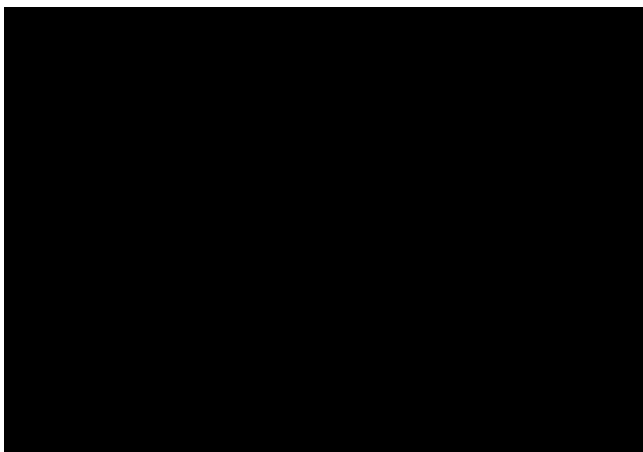


FIGURE 1. Intact stroma underneath multilayer atypical cells.

serous in type, 46% are mucinous, and 3.9% are mixed, clear cell, or Brenner tumor.¹

Complete surgical resection is the most important part of therapy. This treatment includes bilateral salpingo-oophorectomy, omentectomy, peritoneal washings, lymph node sampling and random biopsies of peritoneum.¹ The survival rate for stage I disease is near 100%,⁷ and unilateral salpingo-oophorectomy, or possibly ovarian cystectomy is, therefore, justified in selected patients. As our patient was only 17 years old and nulliparous at her first presentation, this conservative approach was carried out initially.

The need for a second-look, complete staging laparotomy in patients with BOT may arise, and these tumors may be upstaged at that time. Our patient had a staging laparotomy only a year after her initial operation, and had no evidence of any residual disease from a peritoneal implant. Yet she presented with a recurrence of the same histological tumor type two years after the primary operation. As the patient wanted to have children, unilateral salpingo-oophorectomy and one-sided ovarian cystectomy were performed, preserving the healthy ovarian tissues.

The question arises as to the advisability or otherwise of postoperative adjuvant chemotherapy. Kennedy and Hart⁸ reported 76 patients with serous BOT, and only two (11%) of 18 conservatively managed patients developed recurrent disease. Currently, no evidence exists to show

that adjuvant chemotherapy has a role in early stage disease.¹ Furthermore, all studies that have evaluated treatment have been retrospective, and none has shown any advantage for the use of postoperative adjuvant radiation therapy, chemotherapy, or a combination of radiation and chemotherapy, when compared with no postoperative treatment.⁴

The findings of these previous studies, in conjunction with the tendency of BOT to occur in young women, would tend to raise questions about the management of these patients for which, at present, there is no consensus. For example, the natural history of these tumors, as well as their clinical behavior in relation to the histologic types, are yet to be resolved. Furthermore, the risk of postoperative adjuvant therapy in these patients, as well as the need for second-look laparotomy, will still need to be re-assessed.

In an effort to resolve many of these issues, the Gynecologic Oncology Group (GOC) undertook a long-term prospective analysis of patients with BOT.⁴ Even then, a lot of questions remain to be answered about this disease. Until more information is available regarding the management of BOT and especially its recurrence, the use of adjuvant chemotherapy for such cases would appear to be the appropriate solution, as was undertaken in this case.

References

1. Link CJ, Reed E, Sarosy G, Kohen EC. Borderline ovarian tumor. *Am J Med* 1996;101:217-25.
2. Marchal LA, Sinn J, Levin W, et al. Borderline epithelial ovarian tumor: a review of 81 cases with an assessment of the impact of treatment. *Int J Radiat Oncol Biol Phys* 1992;22:867-74.
3. Massad LSJ, Hunter VJ, Szpak CA, et al. Epithelial ovarian tumor of low malignant potential. *Obstet Gynecol* 1991;78:1027-32.
4. Barnhill DR, Kurman RJ, Brady MF, Omura GA, Jordan E, Given F, et al. Preliminary analysis of the behavior of stage I ovarian serous tumors of low malignant potential. A Gynecologic Oncology Study Group. *J Clin Oncol* 1995;13:2752-6.
5. Schaebler DLS, Children RJ, Young RC. Gynecological malignancies. *Cancer Chemother Biol Response Modif* 1996;16:564-91.
6. Goldman TL, Chalas E, Chumas J, Loesch M, Mann WJ. Management of borderline tumor of the ovary. *South Med J* 1993;86:423-4.
7. Leak JF. Tumor of low malignant potential. *Curr Opin Obstet Gynecol* 1992;4:81-5.
8. Kennedy AW, Hart WR. Ovarian papillary serous tumor of low malignant potential (serous borderline tumor): a long-term follow-up study, including patients with micro invasion, lymph node metastases and transformation to invasive serous carcinoma. *Cancer (United States)* 1996;78:278-86.