

Case Report

Conservative surgery and fertility outcomes of borderline ovarian tumours: Case series and review of literature

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Abstract. Borderline ovarian tumours are usually seen in younger aged women and the issue of conservative surgery is increasingly important in today's fertility-preserving concept. We present three borderline ovarian tumour cases who underwent conservative surgery in our institution between 2006-2008 and their long-term follow-ups for their reproductive capacity after treatment. No recurrence after conservative treatment in our cases had been noted. Fertility-preserving surgery may be the treatment of choice with careful follow-up in women with Stage I borderline ovarian tumours, who desire further childbearing. Assisted Reproductive Techniques should be taken into consideration after the initial treatment and second-look surgery may be performed in the course of a caesarean section.

Key words: Tumors of low malignant potential, borderline ovarian tumors, conservative surgery

1. Introduction

Tumors of low malignant potential (LMP) or borderline ovarian tumors constitute approximately 10-15% of all epithelial malignancies and are characterized by a less aggressive behaviour than invasive epithelial ovarian cancers. Taylor, originally described this clinical condition in 1929 (1), but till 1971 these tumors of ovary were not recognised as an important clinical entity (2).

Today, the diagnosis of ovarian tumors in reproductive age women have increased parallel to the improvements in diagnostic methods. The definitive management of epithelial ovarian cancer involves primary surgery, washings of the pelvis, tumor debulking, total abdominal hysterectomy, bilateral salpingo-oophorectomy, omentectomy, peritoneal biopsies and pelvic/para-aortic lymph node dissection. These procedures are usually followed by adjuvant chemotherapy, and second-look surgery (3).

Nowadays in Turkey, women tend to be older in their first deliveries so there is an increasing demand among young women in early-stage ovarian cancer to maintain their fertility. Conservative surgical approaches should be the first treatment option in these women. In this paper we are reporting three borderline ovarian tumor case series followed by successful pregnancies who were treated with conservative surgery and followed-up in Obstetrics and Gynecology Department of Gulhane Military Medical Academy.

2. Case reports

Case 1: A 26 years old women married for 4 years was referred to our tertiary center in 2006 for a left adnexial mass. Transvaginal ultrasound examination revealed the presence of a 46x52mm complex cystic mass with papillary formations originating from left ovary. Her status was discussed with the family in details and she requested her fertility to be preserved and a consent form was signed.

Under general anesthesia a laparotomy was performed with a Pfannensteil incision. After getting peritoneal washings, left ovarian cystectomy and ovarian biopsy was performed. The pathology report demonstrated cytology negative for malignant cells, right ovarian biopsy was free of disease, but the left cyst showed a serous borderline tumor where the hilus was not involved. She was discharged from the hospital on the 3rd postoperative day with a diagnosis of

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stage IA serous papillary tumor of the ovary. Controlled ovarian hyperstimulation was given on the fourth month after her operation and ICSI was performed resulting in a singleton pregnancy. A healthy female infant weighing 3860gr was delivered with caesarean section at term. Careful inspection of the ovary showed to be otherwise normal. Follow-up examinations included: clinical examination and tumor markers every 3 months and pelvic-abdominal computer tomography scan and chest X-Ray every 6 months.

A second look surgery with operative laparoscopy was performed in 2009. There weren't any pathological findings neither in peritoneal washings nor in peritoneal or ovarian biopsies. Three months later, the patient conceived spontaneously and in her second pregnancy CA125 levels stayed constant and she had delivered a 3130gr term male infant by caesarean section. No tumor involvement had been reported from the multiple biopsies, obtained during C-section. The patient is already in our follow-up program.

Case 2: A 26 years old nulligravid patient admitted to our clinic in 2006 with the complaints of pelvic pain and abdominal distension lasting for more than two weeks. We diagnosed a 60x80mm thin walled, hypoechoic cystic mass with papillary protrusions on the right adnexial area by transvaginal sonography. She desired a fertility preserving surgery if possible and a consent form was signed.

Laparotomy procedure was performed under general anesthesia with a Pfannenstiel incision. The 8cm adnexial mass was removed by stripping technique from the right ovary and the frozen section evaluation of the mass confirmed a borderline serous papillary carcinoma of the ovary. Considering the fertility desire of the patient, staging laparotomy procedure was performed. No macroscopic disease had been identified on peritoneal surfaces. The pathology report confirmed the borderline serous papillary tumor with reactive lymph nodes. The patient was classified as stage IC according to FIGO and discharged on her postoperative 4th day. Post operative period was free of disease with normalized CA125 levels (<35U/ml). On the sixth month after the operation, in her second clomiphene citrate trial she got pregnant. The patient gave birth to a term 3360gr healthy male infant with an elective cesarean section. During C-section second-look procedure was performed and a 2 cm serous cyst excised from her right ovary, multiple biopsies were obtained from the

contralateral side ovary and peritoneal surfaces. The pathology report of right ovarian cyst showed a serous cyst adenoma. Now she is already free of disease in our follow-up program.

Case 3: A 27 year old, gravidity 1, parity 0, abortion 1 woman married for 6 years was referred to our clinic with the complaints of menstrual irregularity in 2006. The sonographic evaluation revealed a septated left adnexal 75mm cystic mass. The laboratory findings were normal except for an increase of CA125 (105U/ml). She desired a pregnancy therefore asked for a conservative surgery. A Maylard incision was carried out and left ovarian cystectomy was performed. The frozen section examination revealed a borderline serous tumor of the ovary. At the same session, we performed the staging procedure in turns of contralateral ovarian wedge resection, bilateral ovarian reconstruction, infracolic omentectomy, appendectomy and paraaortic lymph node sampling with multiple peritoneal biopsies. Final pathology report confirmed the borderline serous tumor with a positive cytology and the patient was classified as stage IC. CA125 level was normalized on the sixth month after the operation and we begun the infertility investigations as the family wished to conceive soon. The patient was administered long protocol ovulation induction followed by ICSI which ended up with a twin pregnancy. She gave birth to two healthy infants at her 37th gestational week by caesarean section, weighing 2410 and 2650 grams. During the C-section, second look procedure was performed. There were no pathological findings in the inspection but still we obtained multiple biopsies from both ovaries and peritoneal surfaces. Till now no recurrence finding had been noted in our patient.

3. Discussion

Patients with borderline ovarian tumors tend to be younger than women with invasive ovarian cancer. In patients with LMP tumors, preserving fertility with conservative surgery may be the option for treatment even though the gold standard of management is total hysterectomy with bilateral adnexectomy. For tumor staging, peritoneal washing with multiple biopsies, omentectomy and resection of pelvic/para-aortic lymph nodes should be performed as necessary (4). Less aggressive attitudes were adopted when the more benign-like behavior of these tumours were understood. We gave up radiotherapy first and the chemotherapy became less frequent. Today, bilateral adnexectomy without hysterectomy is the standard procedure in most

patients, but more conservative treatment should sometimes be proposed for preserving the patient's reproductive capacity.

Many studies have suggested the safety of conservative surgery with unilateral salpingo-oophorectomy or cystectomy for patients with stage I borderline ovarian tumors (5, 6, 7). Another important step here for a clinician for giving the right decision is to discuss all details of treatment options with the patient and her family before surgery.

The patients who had conservative treatment have high recurrence rate than those who had radical surgery (8). This proportion is particularly higher after cystectomy (8, 9). Morice et al. reported that such management did not affect survival (8). Schilder and colleagues reported the estimated 5 and 10-year survivals of patients as 98% and 93% respectively (10), which was comparable with the reported survival rates of patients with Stage I ovarian cancer treated more radically by surgery (11).

We may conclude from our practice that debulking surgery is the most appropriate treatment to decrease the risk for recurrence of LMP tumors, but in young patients conservative surgery may be preferred to preserve the fertility potential. Our results also confirm that fertility outcome is good after successful conservative treatment of borderline ovarian tumors. We want to point out the importance of Assisted Reproduction Techniques, in case of advanced women age or persistent infertility after conservative surgery of LMP tumors. In pregnancy state caesarean section may be the preferred delivery method to perform a second-look surgery for the progress of the disease.

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