



Borderline Ovarian Tumors : A Clinical Challenge, a Case Report in Twenty Year Old Nullipara

KEYWORDS

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ABSTRACT Epithelial tumors of the ovary are among one of the most common gynecological malignancies. Mucinous ovarian tumors comprise 15 % of all ovarian tumors.

We report a case of 20 year old nullipara who presented with simple abdomino-pelvic cyst arising from right ovary approximately 19 X 9.2 X 15.4 cm. Cystectomy was done with retention of normal ovarian tissue. Histopathological diagnosis was borderline mucinous cystadenoma of endocervical type with no stromal invasion. Patient was advised regular follow-up.

Mucinous cystadenoma can occur at any age and can cause considerable anxiety also there are chances of complication such as torsion, rupture and transformation of benign into malignant. In young patients with apparently benign ovarian cysts requiring removal, conservative approach of cystectomy can be undertaken in order to retain functioning ovarian tissue for endogenous hormone production and future conception.

Introduction

In population-based cancer registries in India, ovarian cancer is the third leading site of cancer among women, trailing behind cervix and breast cancer.¹ Determination of various histological patterns of ovarian tumors is very important for diagnosis, prognosis and treatment of ovarian tumors.

Borderline ovarian tumors are an intermediate stage between benign cystadenomas and adenocarcinomas. The biggest challenge in the management of women with these tumors is to identify the subset that will behave in either malignant or benign fashion and treat the patient accordingly.

Case report

A twenty-year old nullipara came with history of abdominal discomfort since two days with one episode of high-grade fever. She gave no history of weight loss or irregular menses. She attained menarche at thirteen years of age with irregular cycles lasting for 2-3 days every 2- 3 months with moderate flow and no dysmenorrhea. On examination, her general condition was stable with no pallor, icterus or edema. On per abdomen examination uniform abdominal distention was noted up to the umbilicus, a mass with smooth surface of 19 X 24 cm size was palpable in the suprapubic region partly in the right iliac fossa, cystic in nature, arising from the pelvis with restricted mobility. There was no tenderness over the mass and dull note on percussion was elicited. There was no ascites. Examination of the genitalia showed a normal vulva with an intact hymen. Digital rectal examination revealed normal sized uterus deviated to left, mobile, separate from the mass, a groove was palpable between uterus and mass. Mass was also palpable in the right and posterior fornix. Provisional diagnosis of benign ovarian cyst was made.

Ultrasonography showed simple abdomino-pelvic cyst from right ovary , 19 X 9.2 X 15.4 cm with volume of 1243 cc causing right mild hydroureter with hydronephrosis.

Colour Doppler showed regular vascular branching and flow over the cyst. Ca 125 was 370 U/ml. Risk of malignancy index (RMI) was 370. Exploratory laparotomy was done. No signs of metastases, ascites, adhesions, peritoneal nodules were evident. Left side ovary was examined carefully and was found to be healthy. Right side cyst of 19 X 15 X 9 cms was seen. Cyst wall was intact, whitish, and smooth. Frozen section of the specimen showed no atypical or malignant cells. Peritoneal washings showed no malignant cells. Taking into consideration all the clinical and laparotomy findings, this tumor was treated as benign ovarian cystadenoma. Cystectomy was done by clean dissection. Functional ovarian tissue was preserved and remodeled. It was categorized as stage 1A . Histopathological examination revealed borderline mucinous cystadenoma of endocervical (müllerian) type with no stromal invasion.

Discussion

Mucinous tumors are the commonest large ovarian tumors. Approximately 20 % of primary ovarian mucinous tumors are borderline tumors, non- invasive or invasive carcinomas; remainder are cystadenomas. 5-10 % of all ovarian mucinous tumors are malignant mucinous cystadenocarcinoma.

Borderline (low malignant potential-LMP) ovarian tumors are of special interest because of their favorable behavior even when they are associated with one or more of the following: extra-ovarian disease, recurrence, and/or metastasis. The overall survival is 96% at 5 years and 94% at 10 years.²

The LMP ovarian tumors represent from 4% to 19% of all ovarian tumors.² Serous and mucinous types are the most common. A precise diagnosis with accurate staging according to 2014 FIGO Cancer Staging system³ is important because the prognosis, treatment, and the patient's future reproductive options depend on the type of neoplasm found.

Mean age at diagnosis in two case series for borderline serous and mucinous tumors is 40 years³. In contrast to this, in this case the age of the patient was 20 years.

Complaints associated with LMP tumors are abdominal mass, abdominal discomfort or abdominal cramps, changes in bowel habits, uterine bleeding, increased urinary frequency, dyspareunia, infertility and increased abdominal girth⁴. Approximately 30% of patients are asymptomatic⁵.

It is necessary to determine the primary or metastatic origin of the tumor.

The mucinous tumors are found to be large on examination. The large size does not necessarily indicate malignancy, even when they reach a diameter of 50 cm or more and weigh 50 to 150 kg⁶.

Majority of mucinous tumors are unilateral, especially when it is a primary ovarian tumour. A large retrospective series⁷ as well as a SEER database analysis⁸ have shown that 79 % of mucinous tumors are unilateral and only 7% borderline mucinous ovarian tumors are bilateral.

Taking into consideration size and laterality, Siedman et al have shown that unilateral tumor greater than 10 cm predicted primary ovarian origin of tumor in 82% cases and bilateral tumors less than 10 cm predicted metastatic origin in 95% cases.⁹

In this cases both size and laterality point towards primary origin in the ovary.

Preoperatively trans-vaginal color Doppler ultrasound has proven to be useful in differentiating between benign and malignant ovarian neoplasms.¹⁰ There are no tumor markers, which could predict the progression of a borderline ovarian tumor to invasive tumors, but the invasive course is only 0.7%¹¹.

The RMI scoring system is the method of choice for predicting malignancy. RMI 4 is the best predictive RMI for preoperative discrimination of BOT at a cutoff level of 200.¹²

Pongsuvareeyakul T et al found the sensitivity of frozen section diagnosis of LMP mucinous tumors to be low.¹³

Seidman et al found 83% mucinous cystadenomas are stage 1 at the time of diagnosis.¹⁴

At the time of surgery, Schmeler KM et al found no patient with stage 1 borderline or invasive mucinous cystadenomas with lymphatic metastases and concluded that it is not necessary to perform pelvic and/or para aortic lymphadenectomy at the time of staging in stage 1 primary mucinous cystadenomas.¹⁵

Diversity exists in the surgical management of LMP tumors among gynecologic oncologists options being conservative approach (cystectomy or unilateral salpingo-oophorectomy) or total abdominal hysterectomy with bilateral salpingo-oophorectomy.

Conservative surgery can be a therapeutic option in selected patients¹⁶ with low mortality but with high rate of new lesion or recurrence.¹⁷ Most important advantage of conservative approach is that most patients who desire pregnancy are able to conceive and deliver healthy offspring.¹⁷

LMP mucinous tumors can either be endocervical (müllerian) type or intestinal-epithelial type. According to Rutgers and Scully¹⁸, no patients with LMP mucinous ovarian tumors of müllerian type have recurrences of tumor outside of the ovary.

Transvaginal ultrasound is currently the most effective diagnostic technique for the follow-up of young patients treated conservatively for early borderline ovarian tumor.¹⁹

Conclusion

Borderline ovarian tumors are an intermediate stage between benign cystadenomas and adenocarcinomas.

Conservative management might be proposed in young patients who wish to preserve their fertility. It significantly increases the risk of recurrence but does not affect overall survival. Such management offers even patients with advanced disease the chance to have spontaneous pregnancy, but careful follow-up is required to detect tumor recurrence.

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