International Journal of Research in Medical Sciences
Mahadani JW et al. Int J Res Med Sci. 2016 Dec;4(12):5516-5518
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20164245

Case Report

Borderline mucinous ovarian tumour – a rare bilateral presentation

Jayawant W. Mahadani, Surabhi S. Kulkarni*, Nilima D. Lodha, Nigar Fatema M. Khan

Department of Pathology, SVNGMC Yavatmal, Maharashtra, India

Received: 20 October 2016
Accepted: 15 November 2016

***Correspondence:**
Dr. Surabhi S. Kulkarni,
E-mail: surabhi.pimparkar@gmail.com

ABSTRACT

Surface epithelial tumours are the most common ovarian tumours. According to the cell type, surface epithelial tumours can be serous, mucinous, endometrioid etc. Mucinous tumours of ovary are the neoplasms characterized by glandular, cystic architecture and are lined to variable extents by mucin-containing epithelium. Further these tumours are sub-classified into benign, borderline and malignant category. Typically, borderline tumours are non-invasive neoplasms that have nuclear abnormalities and mitotic activity intermediate between benign and malignant tumours of similar cell type. Borderline ovarian tumours are clinical entities less frequently encountered by pathologists and gynaecologists. Mucinous borderline ovarian tumours are among the most difficult ovarian neoplasms for surgical pathologists to interpret. They occur in younger women and present at an early stage. However, borderline tumours are difficult to diagnose correctly preoperatively using imaging methods because their macroscopic features overlap with invasive and benign ovarian tumours. Most importantly, these tumours have a superior prognosis when compared with ovarian carcinomas stage for stage. The borderline tumours may be of intestinal type or mullerian (endocervical like) type. The intestinal type tumours are by far the most common. Approximately 5% of the borderline mucinous tumours are bilateral. We here report a rare case of bilateral borderline mucinous tumours diagnosed on histopathology.

Keywords: Borderline, Intestinal type, Mucinous, Mullerian type, Ovarian

INTRODUCTION

The concept of borderline epithelial tumours of the ovary has been controversial. Taylor introduced the term 'semi-malignant' tumour in 1929.[1-3] The features of mucinous borderline tumours were probably first documented in a study from the Cleveland Clinic in 1955.[4]

In 1961, the Cancer Committee of the International Federation of Gynaecology and Obstetrics (FIGO) proposed a classification of common primary epithelial ovarian tumours, subdivided into three groups: benign cystadenoma; cystadenoma with proliferating activity of the epithelial cells and nuclear abnormalities, but with no infiltrative destructive growth (low potential malignancy); and cystadenocarcinoma.[5] The World Health Organization (WHO) applied the designation 'tumour of borderline malignancy' and added the synonym 'carcinoma of low malignant potential' (LMP) in their 1973 classification of ovarian tumours.[6]

According to the WHO definition, a borderline epithelial tumour lacks obvious invasion of the stroma and has mitotic activity and nuclear abnormalities intermediate between clearly benign and unquestionably malignant tumours of a similar cell.[7] The absence of obvious stromal invasion is a principal diagnostic criterion for borderline tumours. Identification of stromal invasion is a particularly vexing problem in predominantly glandular tumours, such as those of endometrioid and mucinous types. In the latter, complex aggregates of glands and cysts often have little intervening ovarian stroma.

In addition, one or more foci of stromal micro invasion by cells with the same borderline cytological features may be found in otherwise typical serous and mucinous borderline tumours. Architectural and cytological patterns of non-invasive carcinoma may be found within otherwise typical borderline tumours, especially in the mucinous category. These include pronounced degrees of cellular stratification, often with the formation of intraglandular bridges, cribriform patterns and micropapillae devoid of connective tissue cores in which the neoplastic cells have high-grade (moderate- to-severe) nuclear atypia.[8,9] Borderline tumours of every surface epithelial cell type (serous, mucinous, endometrioid, clear cell, transitional cell and mixed epithelial cell) have now been reported. We report a rare case of bilateral borderline mucinous ovarian tumour in a 36 year old female.

CASE REPORT

A 36 year old female complained of lump in abdomen since 06 months. On ultrasonography, bilateral solid-cystic ovarian masses of size 14x9 cm and 15x10 cm were found. Uterus and cervix was unremarkable, there was no evidence of any free fluid collection in the abdominal cavity. Taking into consideration large ovarian masses, a decision to perform total abdominal hysterectomy with bilateral salphingo-ophrectomy was taken. The surgery was uneventful. The specimen was sent for histopathology.

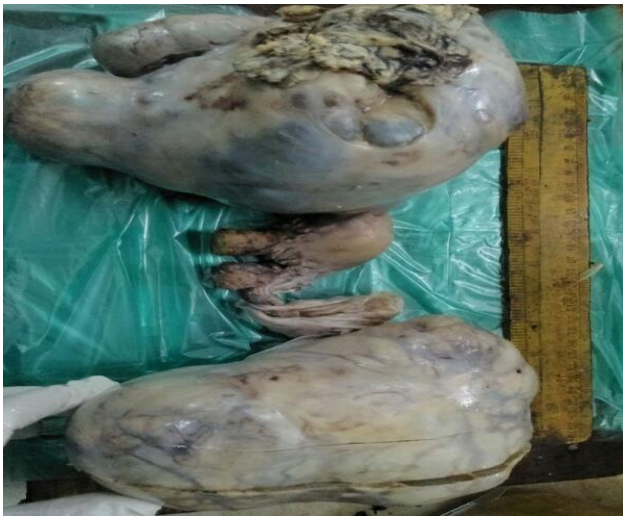

Figure 1: External surface - both ovaries and uterus with cervix).

On gross examination, specimen comprised of uterus with cervix and two ovarian masses. Uterus with cervix unremarkable on external and cut surface. Two large, solid-cystic ovarian masses with attached fallopian tubes were received separately. The masses measured 16x11x7 cm and 14x9x8 cm. and were nodular, greyish white on external surface. No capsular breach was noted. The cut surface of both the masses showed multiloculated cyst containing mucinous, gelatinous material. Interspersed between the cysts was solid, greyish white area. No focus of haemorrhage and necrosis was seen.

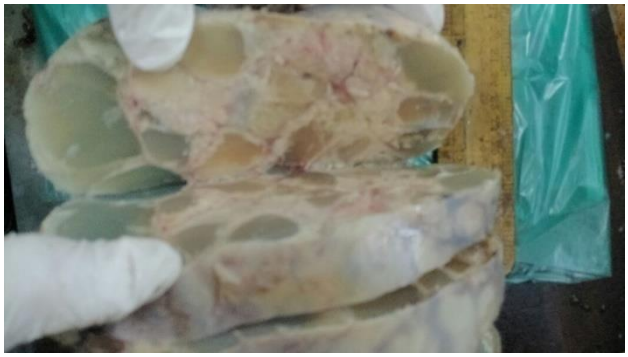

Figure 2: Cut surface - solid grey white area with multiloculated cysts with mucoid material.

On histopathological examination, both the masses showed similar histomorphology in the form of a cystic neoplasm lined by mucin secreting columnar epithelium. Complexly branching papillary pattern was also seen. The lining epithelium showed stratification upto three layers. Moderate nuclear atypia was seen. The ovarian stroma showed extravasated pools of mucin and associated inflammatory cell response. No stromal invasion was seen. With above gross and microscopic features, diagnosis of bilateral borderline mucinous tumour was made.

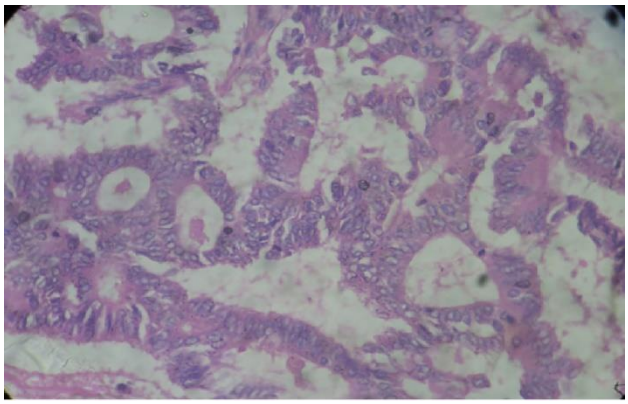

Figure 3: Mucinous borderline tumour; nuclear stratification is evident.

DISCUSSION

Borderline mucinous tumours are less common than serous borderline tumours. Typically, they produce large multicystic masses and over 90% are unilateral. Since bilateral borderline mucinous tumours are rare, a main differential of metastatic carcinoma from the gastrointestinal tract most commonly appendix is to be ruled out.[10,11] Two basic types of borderline mucinous tumours are the intestinal type (85%) and the endocervical-like (15%) type.

Almost 75% of women with borderline tumours complain of abdominal pain/abdominal discomfort/ tense abdomen/abdominal mass. Few cases may be asymptomatic. Women with borderline ovarian tumours report significantly longer duration of symptoms than women with invasive ovarian cancer.[12] The diagnosis of borderline ovarian tumours is made on histopathology specimen. Preoperative diagnostic criteria for borderline tumours has not been extensively studied; tumour markers, USG, Doppler, CT and MRI have got limited clinical utility.[1]

Various studies have not found uniform and consistent elevation, correlation with clinical stage of specific ovarian tumour markers like CA-125, CA 19-9.[13,14]

The FIGO classification (International Federation of Gynaecology and Obstetrics (1987) is used for staging. The exclusive treatment is surgery. Total abdominal hysterectomy and bilateral salpingo-ophorectomy with peritoneal cytology, omentectomy and multiple peritoneal biopsies is the gold standard treatment. For women of child bearing age group fertility sparing treatment has become well consolidated approach.[15] Long-term prognosis for patients with borderline ovarian tumour is good and the main independent prognostic factor for disease-free survival and long-term survival was FIGO stage, followed by histologic type and patient age.[16]

CONCLUSION

Bilateral borderline ovarian tumours are rare epithelial ovarian tumours with excellent prognosis. Tumour heterogeneity requires judicious and extensive sampling for microscopic evaluation; problems in the differential diagnosis of primary and metastatic mucinous ovarian tumours can be overcome with thorough clinical, radiological and pathological examination.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Exacoustos C, Romanini ME, Rinaldo D, Amoroso C, Szabolcs B, Zupi E, et al. Preoperative sonographic features of borderline ovarian tumours. Ultrasound Obstet Gynecol. 2005;25(1):50-9.
2. Fattaneh TA, Peter D. WHO. Pathology and Genetics of Tumours of the Breast and Female Genital Organs. Lyon: IARC Press; 2003;2:125-6.
3. Taylor Jr HC. Malignant and semi-malignant tumours of the ovary. Surg Gynecol Obstet. 1929;48:204-30.
4. Fisher ER, Krieger JS, Skirpan PJ. Ovarian cystoma. Clinicopathological observations. Cancer. 1955;8:437-45.
5. FIGO. International Federation of Gynaecology and Obstetrics. Classification and staging of malignant tumours in the female pelvis. Acta Obstet Gynecol Scand. 1971;50:1-7.
6. Serov SF, Scully RE, Sobin LH. International Histologic Classification of Tumours. No. 9. Histological Typing of Ovarian Tumours. World Health Organization: Geneva. 1973.
7. Scully RE, Sobin LH. Histologic Typing of Ovarian Tumors, 2nd edn. In: World Health Organization International Histological Classification of Tumors. Springer-Verlag: Berlin, Heidelberg. 1999.
8. Hart WR, Norris HJ. Borderline and malignant mucinous tumours of the ovary. Histologic criteria and clinical behavior. Cancer. 1973;31:1031-45.
9. Hart WR. Ovarian epithelial tumours of borderline malignancy (carcinomas of low malignant potential). Hum Pathol. 1977;8:541-9.
10. Ronnett BM, Kurman RJ, Zahn CM, Shmookler BM, Jablonski KA, Kass ME, et al. Pseudomyxoma peritonei in women: a clinicopathologic analysis of 30 cases with emphasis on site of origin, prognosis, and relationship to ovarian mucinous tumours of low malignant potential. Hum Pathol. 1995;26:509-24.
11. Misdraji J, Yantiss RK, Graeme-Cook FM, Balis UJ, Young RH. Appendiceal mucinous neoplasms: a clinicopathologic analysis of 107 cases. Am J Surg Pathol. 2003;27:1089-103.
12. Paulsen T, Kaern J, Kjaerheim K, Tropé C, Tretli S. Symptoms and referral of women with epithelial ovarian tumours. Int J Gynaecol Obstet. 2005;88(1):31-7.
13. Gotlieb WH, Soriano D, Achiron R, Zalel Y, Davidson B, Kopolovic J, et al. CA 125 measurement and ultrasonography in borderline tumours of the ovary. Am J Obstet Gynecol. 2000;183(3):541-6.
14. Engelen MJ, de Bruijn HW, Hollema H, ten Hoor KA, Willemse PH, Aalders JG, et al. Serum CA 125, carcinoembryonic antigen, and CA 19-9 as tumour markers in borderline ovarian tumours. Gynecol Oncol. 2000;78:16-20.
15. Tinelli R, Tinelli A, Tinelli FG, Cicinelli E and Malvasi A. Conservative surgery for borderline ovarian tumours: a review. Gynecol Oncol. 2006;100:185-91.
16. Trope CG, Kristensen G, Makar A. Surgery for borderline tumour of the ovary. Semin Surg Oncol. 2000;19:69-75.

Cite this article as: Mahadani JW, Kulkarni SS, Lodha ND, Khan NFM. Borderline mucinous ovarian tumour – a rare bilateral presentation. Int J Res Med Sci 2016;4:5516-8.