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Case Report

A rare case of malignant Brenner tumour of ovary: a case report

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ABSTRACT

Ovarian Brenner tumor (BT) is a rare epithelial ovarian cancer that accounts for less than 2% of ovarian neoplasms. The World Health Organization (WHO) classifies Brenner tumors into three categories: benign, borderline and malignant. Malignant Brenner tumors (MBT) of the ovary are 3-5% of Brenner tumors. They carry a poor prognosis. They generally affect women during the perimenopausal and postmenopausal periods and presents with mass per abdomen. A case of 55 years old Female with complaints of post-menopausal bleeding since 3-4 months and pain abdomen since 2 days. Patient attained menopause 20 years ago. Clinically patient appeared stable. On per abdomen hypogastric fullness +, dull note heard over the region. On per speculum examination altered minimal bleeding +, on bimanual examination, mass 10×6 cm in hypogastric region felt separately from fundus of uterus. Serum markers were: beta-human chorionic gonadotropin (β-hCG) – 0.26, alpha-fetoprotein (AFP) – 1.92, CA 125 – 84.18 and anti-Müllerian hormone (AMH) <0.010. Magnetic resonance imaging (MRI) scan showed right ovarian malignant tumour 10.6×14.2×16 cm. Patient was operated and frozen section was sent which confirmed Brenner tumour. Histopathological reporting- malignant Brenner tumour- right ovary. Left ovary and omentum were unremarkable. Ascitic fluid showed malignant cells. Patient was discharged and referred to oncologists. Incidence of malignant Brenner tumour is <2% which makes it uncommon, histopathologically consists of transitional epithelium. We report a case of ovarian malignant Brenner tumour, detailing the clinical presentation, diagnosis, pathologic review, imaging findings, and management.

Keywords: Brenner tumour of ovary, Malignant, Meigs syndrome

INTRODUCTION

Ovarian Brenner tumor is a rare epithelial ovarian cancer that accounts for less than 2% of ovarian neoplasms.[1] Brenner Tumors are categorized as benign, borderline, or malignant. Malignant Brenner tumors are a particularly rare subset that account for less than 5% of all Brenner tumors.[1,2] Clinical presentation of malignant Brenner tumor varies but may include abdominal distension, pelvic discomfort, or postmenopausal bleeding.[3] Malignant Brenner tumor does not possess pathognomonic imaging features, and thus diagnosis of malignant Brenner tumour requires surgical excision and pathologic review. Further, diagnosing malignant Brenner tumor histologically can be difficult due to overlapping morphologic and histopathologic features with benign Brenner, proliferative Brenner, and transitional cell carcinoma. The cornerstone for treatment is surgical staging and observation. Given the rarity of the disease, there are limited studies investigating the role of adjuvant chemoradiation for malignant Brenner tumour. However, the prognosis is generally considered good.

CASE REPORT

A 55-years-old woman, P4L4, with a history of hypertension and class II obesity was referred for consultation at the department of obstetrics and gynaecology, Basaweshwar Teaching and General Hospital for postmenopausal bleeding. Patient presented

with complaint of post-menopausal bleeding for 3-4 months, also had complaint of pain in abdomen which was acute, for 2 days, dull aching in nature, intermittent, radiating to back. Patient had complaint of fever for 2 days, intermittent, high grade, not associated with chills or rigors relieved on taking treatment. Patient attained menopause 12 years ago. Her vitals were pulse rate of 100 bpm, blood pressure (BP) of 140/90 mmHg, respiratory rate of 20 cpm. Diagnosed hypertension 2 days back, started on tablet stamlo 5 mg OD. Clinically patient appeared stable. On per abdomen hypogastric fullness + with a solid mass measuring 10×8 cm, dull note heard over the region. On per speculum examination altered minimal bleeding +, on bimanual examination, mass 10×8 cm in hypogastric region felt separately from fundus of uterus. Groove test was positive. Nodules were felt in anterior fornix.

Diagnosis

Routine investigations were done and reported normal. Transabdominal ultrasonography revealed a normal uterus and a right adnexal mass measuring 10.6×14×16 cm hypoechoic, suspicious for ovarian fibroma (Figure 1). Minimal ascitic fluid with minimal plueral effusion was seen giving a picture of Meig's syndrome. Further correlation with magnetic resonance imaging (MRI) scan was advised. An MRI scan of pelvis revealed a solid mass lesion with few cystic areas arising from right adnexa measuring 10.6×14.2×16 cm suggestive of right ovarian malignant tumour with mild ascites and right sided minimal plueral effusion (Figures 2 and 3). Differential diagnosis of right ovarian fibroma was given and haptoglobin-related protein (Hpr) correlation was advised. Pre-operative CA-125 measured – 84.18, beta-human chorionic gonadotropin (β-hCG) measured – 0.26, alfa feto protein (AFP) measured – 1.92 and anti-Mullerian hormone (AMH) <0.010.

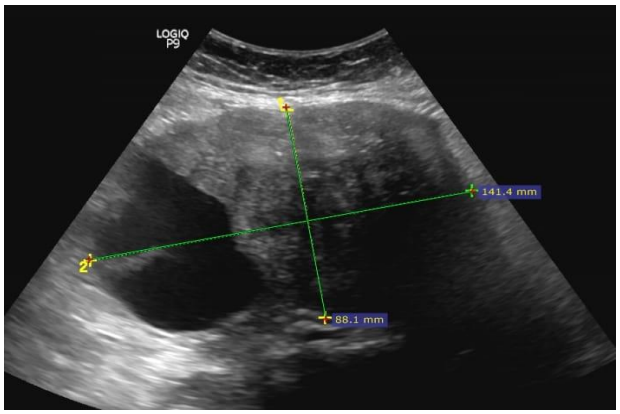

Figure 1: USG showing solid lesion with cystic component measuring 10.6×14×16 cm.

Outcome

The patient underwent total abdominal hysterectomy, bilateral salpingo-oophorectomy, and omentum sampling for cancer staging. In surgery, a large cystic mass was noted arising from the right ovary, measuring approximately 10.5×9×16 cm. There was no evidence of metastatic disease. Frozen section was sent and interpreted as Brenner tumour, however possibility of malignancy was not confirmed. Final histopathology reporting confirmed malignant Brenner tumour of right ovary.

Section studied from uterocervix shows endometrium – proliferative phase, myometrium – unremarkable, cervix – nonspecific cervicitis.

Section studied from left ovary was unremarkable.

Section studied from omentum was unremarkable.

Section studied from ascitic fluid cell block showed malignant cells.

Patient was discharged on post op day 10 and referred to oncologists for further management where she was advised chemotherapy.

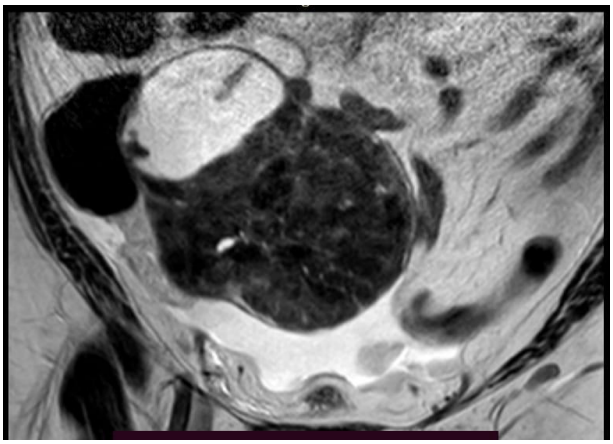

Figure 2: MRI T2 coronal image showing hypointense lesion with cystic component having septa within.

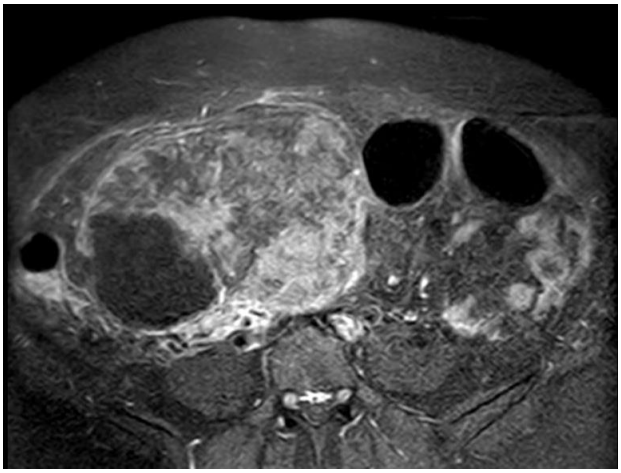

Figure 3: MRI post contrast T1 showing intense heterogeneous enhancement with enhancement of septa.

Figure 4: Gross specimen sent for frozen section.

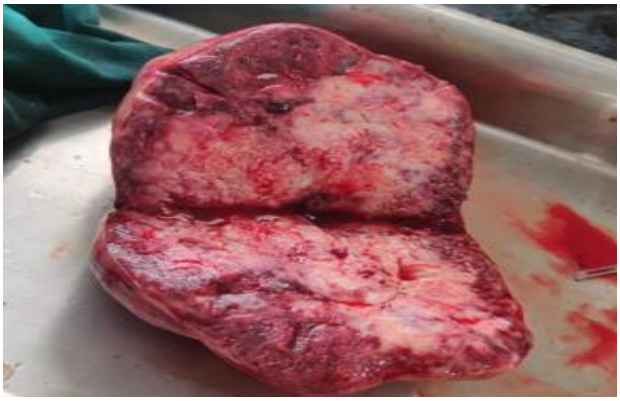

Figure 5: Cut section of the specimen for frozen section - reported as Brenner tumour.

DISCUSSION

Median age of diagnosis of malignant Brenner tumour is 55 years. Similar to most ovarian malignancies, malignant Brenner tumour presents with vague symptomatology. There are currently no reliable tumor markers for diagnosis of malignant Brenner tumour, although CA-125 has been reported to be elevated in 30–70% of cases.[4,5] Definitive diagnosis requires surgical resection of the ovarian tumor and histopathologic evaluation. One differential diagnosis of malignant Brenner tumour is transitional cell carcinoma. Histologically, diagnosis of malignant Brenner tumour requires the presence of both benign and malignant epithelial components with cellular atypia, evidence of stromal invasion, and necrosis.

We report a case of malignant Brenner tumour with post-menopausal bleeding and raised CA 125. Histologically right ovary showed tumor tissue with abundant ovarian stroma, among which were seen islands and nests of tumor cells with some showing microcystic change with tumour cells invading stroma.

Prognosis for malignant Brenner tumour is generally considered good. The 5-year disease-specific survival rate is 94.5% in women with disease confined to the ovary and 51.3% in women with extra-ovarian disease.[5] The recurrence rate has been reported to be as low as 28% with cases of extra-uterine disease to the dura, lung, peritoneum, omentum, skin, and bone.[5-10] The mean time to recurrence is 11 months.[2] Given the limited number of reported cases, and thus the inability to study the efficacy of chemotherapy in a large clinical trial, there is currently no standardized chemotherapy regimen for treatment of malignant Brenner tumour. The use of platinum-based chemotherapeutic agent plus paclitaxel post-operatively has demonstrated survival benefit in a small, retrospective study.[4]

CONCLUSION

We report a case of ovarian malignant Brenner tumour, detailing the clinical presentation, diagnosis, pathologic review, imaging findings, and management. Due to the rarity of these tumors, the best treatment strategy will likely be developed through the reporting of clinical experiences, while surgical excision of the tumour remains the constant. Although frozen section during surgery remains a mainstay for diagnosis of malignant tumours.

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REFERENCES

1. Lee KR, Tavassoli FA, Prat J, IARC Press. Tumors of the ovary and peritoneum. In: World Health Organization Classification of Tumours. Pathology and Genetics of Tumors of the breast and Female Genital Organs. 2003;113-45.
2. Lang SM, Mills AM, Cantrell LA. Malignant Brenner tumor of the ovary: review and case report. Gynec Oncol Rep. 2017;22:26-31.
3. Gezginc K, Kartatayli R, Yazici F. Malignant Brenner tumor of the ovary: analysis of 13 cases. Int J Clin Oncol. 2012;17(4):324-9.
4. Han JH, Kim DY, Lee SW. Intensive systemic chemotherapy is effective against recurrent malignant Brenner tumor of the ovary: an analysis of 10 cases within a single center. Taiwan Obstet Gynecol. 2015;54(2):178-82.
5. Nasioudis D, Sisti G, Holcomb K, Kanninen T, Witkins SS. Malignant Brenner tumors of the ovary: a population-based analysis. Gynecol Oncol. 2016;142:44-9.
6. Ahr A, Arnold G, Goring UJ. Cytology of ascetic fluid in a patient with metastasizing malignant Brenner tumor of the ovary: a case report. Acta Cytol. 1997;41(4):1299-304.
7. Akman L, Akdemir A, Terek MC, Zekiogiu O. Ovarian malignant Brenner tumor in patients over 65 years of age. Kaohsiung J Med Sci. 2014;30(3):159-60.
8. Baizabal-Carvallo JF, Barragan-Campos HM, Alonso-Juarez M. Dural metastases as presentation of a Brenner tumor. J Clin Neurosci. 2010;17(4):524-6.

9. Beck H, Raahave D, Bolesen P. A malignant Brenner tumour of the ovary with subcutaneous metastases. Acta Pathol Microbiol Scand. 1977;85(6):859-63.
10. Chen KT. Bilateral malignant Brenner tumor of the ovary. J Surg Oncol. 1984;26(3):194-7.

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