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PROLIFERATING BRENNER TUMOUR OF OVARY – A RARE ENTITY

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ABSTRACT

Aim: We report a case of proliferating Brenner tumour of the ovary, which is a rare clinical entity.

Case Report: A postmenopausal lady came with complaints of abdominal pain and distension for past 1 month. On examination, she had a uterine mass of 32 weeks size. Ultrasonography of the abdomen showed a cystic mass with multiple loculi having irregular septations. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was done. On gross examination, cut surface of the left ovarian mass revealed partly cystic and solid areas with yellowish white discoloration and papillary projections. On microscopic examination, multiple sections from the left ovarian mass showed well demarcated nests of epithelial cells resembling transitional epithelium, surrounded by stromal component of fibroblastic nature, with papillary formations at some places and coffee bean nuclei. The characteristic clinical and histopathological findings helped in clinching the diagnosis of proliferating Brenner tumour of the ovary.

Discussion: Proliferating Brenner tumours are a type of surface epithelial stromal tumours of the ovary and they have to be distinguished from their benign and malignant counterparts. Presence of papillary projections in the cystic areas of the tumour on gross examination as well as in microscopy, hint the diagnosis of proliferating Brenner tumour. Malignant Brenner tumours have cellular atypia and stromal invasion.

Conclusion: Prompt and correct diagnosis of the Brenner tumour of ovary and its sub-classification forms the basis for its correct management. This can be achieved with the knowledge of its characteristic histopathological findings discussed in this case report.

Key Words: Ovarian neoplasm, Surface epithelial tumours of ovary, Transitional cell, Ovarian carcinoma, Ovarian cancer

INTRODUCTION

Ovarian cancers are one of the deadliest malignancies with 44% of five year survival rate. (1) Ovarian cancers are of various types. According to the World Health Organisation (WHO) histological classification of the ovarian tumours, Brenner tumours are a type of surface epithelial stromal tumours and they are further classified into benign, borderline or proliferating, and malignant. (2) Proliferating Brenner tumour is a rare entity and very few case reports are available in literature. We report another case of proliferating Brenner tumour of the left ovary.

CASE REPORT

A 65 years old postmenopausal woman was admitted in our institute for complaints of dragging abdominal pain

and abdominal distension for past 1 month. She was a multipara with last child birth 35 years back. She underwent tubectomy and was menopausal for past 25 years.

On examination, she had an abdominal mass arising from uterus of 32 weeks size. Ultrasonography of the abdomen showed a large multilocular thin walled cystic mass measuring 25x19x23 cm. The cyst had multiple irregular septations. Both the ovaries could not be seen separately.

The patient was posted for staging laparotomy. Intraoperative findings revealed a large mass arising from the left ovary and extending up to the xiphisternum. The mass appeared vascular and contained 5 litres of mucinous material which was aspirated. It was sent for histopathological examination. The right ovary was normal. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was done. Postoperative period was uneventful.

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Gross:

The uterus with right adnexa was unremarkable. The left ovarian mass measured 22x18x12cm. Externally it showed congested blood vessels (Figure 1). On cut section, it revealed partly cystic and solid areas with yellowish white discoloration. There were multiple elevated solid prominences with papillary formations at some places (Figure 2).

Microscopy:

Sections from the cervix, endometrium, both tubes and right ovary appeared unremarkable. Multiple sections from the left ovarian mass showed nests of epithelial cells resembling transitional epithelium surrounded by stromal component of fibroblastic nature (Figure 3). At places, the tumour cells were arranged in papillary formations (Figure 4). The epithelial cell nests showed sharply defined outlines. The nuclei of the tumour cells were oval, some of which showed longitudinal grooves – coffee bean nuclei. There was no nuclear atypia. The cytoplasm of the individual tumour cell was clear. Foci of cystic change and tumour necrosis were also observed. Histopathologically, all the above findings are consistent with the diagnosis of proliferative Brenner tumour of the left ovary.

DISCUSSION

According to the World Health Organization (WHO) histological classification (2), transitional cell tumours of the ovary are a type of surface epithelial stromal tumours. They are further classified into the following 4 types:

- Benign Brenner tumour
- Proliferating or borderline Brenner tumour
- Malignant Brenner tumour
- Transitional cell carcinoma (non-Brenner type)

Brenner tumours are rare clinical entities and they constitute around 1 to 2% of all the ovarian tumours. Proliferating Brenner tumours are still rarer, accounting for 8% of the Brenner tumours.(3) Roth and Sternberg, in 1970 described proliferating Brenner tumour to be a distinct clinical entity having features inbetween their benign and malignant counterparts.(4)

Previous literatures (5,6) on benign Brenner tumour suggests their diagnosis on identification of the following gross and microscopic features. On gross examination, the tumour appears multilobulated, nodular with a glistening surface. The cut section may show whitish nodules which are well circumscribed and surrounded by fibromatous tissue. On histopathological examination, well demarcated nests of transitional epithelial cells with longitudinal nuclear grooves resembling coffee bean are

seen. These nests of urothelial cells are surrounded by abundant fibromatous stroma.

A case report (7) on proliferating Brenner tumours suggests their distinguishing features from benign Brenner tumours. On gross examination, the presence of cystic areas with papillary projections in addition to some solid areas favour proliferating Brenner tumour. On microscopic examination, they have papillary projections that are lined by transitional epithelium in addition to the transitional cell nests and surrounding abundant stroma seen in benign Brenner tumour. These cells do not show cellular atypia and stromal invasion, which if present, they will be classified as malignant Brenner tumour.

Our case had typical gross and histopathological features of proliferating Brenner tumour.

Proliferating Brenner tumours are usually asymptomatic and discovered incidentally. They are mostly unilateral tumours occurring in age group of 60 – 70 years. They are treated by surgical resection due to their well circumscribed nature and their recurrence rate is very low.(8)

Some Brenner tumours can be functional, especially estrogen secreting and hence can lead to proliferative hyperplasia of endometrium, fibromyoma and adenomyosis of the uterus.(9)

CONCLUSION

The characteristic histopathological features help us in differentiating between the benign, proliferating and malignant Brenner tumours of the ovary. Benign Brenner tumours have well demarcated nests of epithelial cells resembling transitional epithelium surrounded by fibroblastic stroma and coffee bean nuclei. In addition to these features, if papillary projections are present, it indicates the diagnosis of proliferating Brenner tumour. Presence of nuclear atypia and stromal invasion suggest malignant Brenner tumour.

We report this case of proliferating Brenner tumour of the ovary because of its clinical rarity and to emphasise the significance of its correct diagnosis and sub-classification which forms the basis for its correct management.

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Figure 1: Left ovarian mass with congested blood vessels on the external surface.



Figure 2: Cut surface of the left ovarian tumour showing multiple elevated solid prominences and papillary formations.

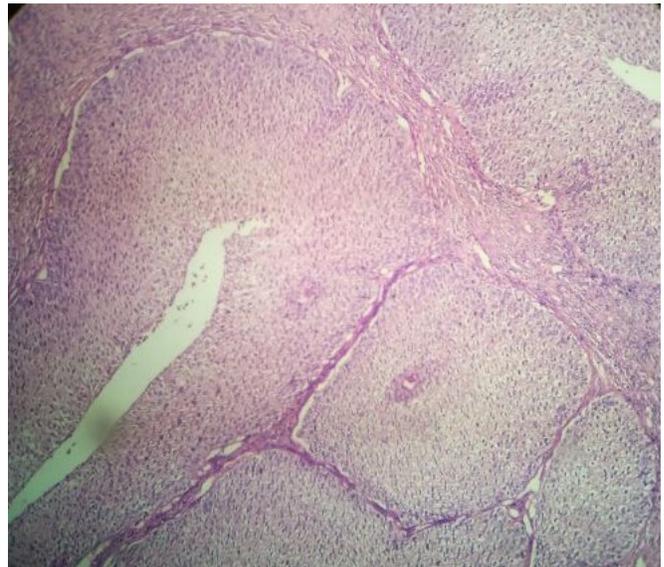


Figure 3: Microscopy of the tumour showing nests of transitional epithelial cells surrounded by fibrous stroma.

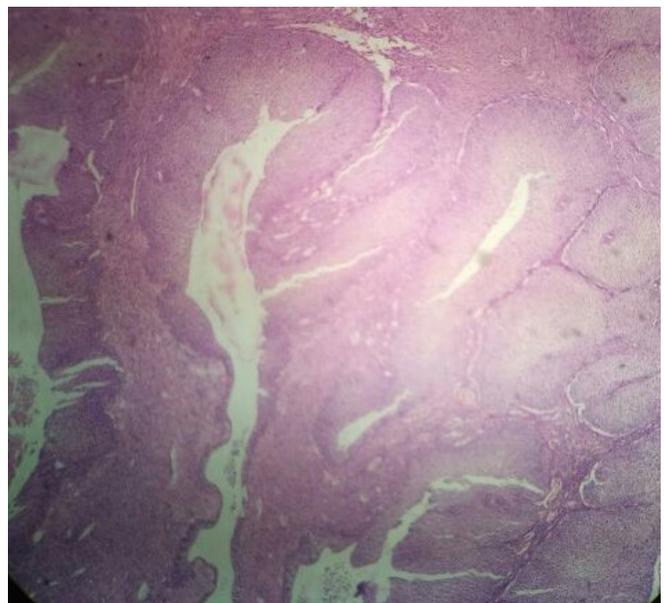


Figure 4: Microscopy of the tumour showing papillary projections.