

RESEARCH AND REVIEWS: JOURNAL OF MEDICAL AND HEALTH SCIENCES

Right Serous Cystadenoma with Left Brenner Tumour in a Post-Menopausal Female: A Rare Case of Bilateral Ovarian Tumour.

Saeeda Wasim^{1*}, and Sharique Ahmad²

¹Department of Gynaecology and Obstetrics, Integral Institute of Medical Sciences and Research, Lucknow, Utter Pradesh, India.

²Department of Pathology, Era's Lucknow Medical College and Hospital, Lucknow, Utter Pradesh, India.

Case Report

Received: 22/08/2014
Revised: 13/09/2014
Accepted: 15/09/2014

*For Correspondence

GF-A, Royal Palace
Vivekanandpuri, Mahanagar
Lucknow – 226003. Utter
Pradesh, India
Mobile: +91 7275005025

Keywords: Brenner tumour
,serous cystadenoma of
ovary, bilateral ovarian
tumour

ABSTRACT

Brenner tumors is a rare type of epithelial derived ovarian neoplasm with around 1-2% incidence. The vast majority of them are benign. Average age at presentation is 50 year and around 71% cases occur in females of > 40 years of age. These tumors may vary in size. Mostly these tumors are unilateral, however bilaterality of 9.8% has been also reported but most of the tumors are less than 2 cm and usually diagnosed as incidental finding. The most frequent occurrence has been observed with mucinous cystadenomas. Other associations with germinal inclusion cysts, simple cysts (Steven g), Struma ovarii, cystic teratomas, Stromal sarcomas & chocolate cyst ovary has also been reported. Though Brenner tumors have been commonly reported along with other epithelial tumours in the same ovary, however it was rare that brenner tumor associated with an epithelial tumor in contralateral ovary. In the present case report, Brenner tumour was associated with serous cystadenoma in contralateral ovary in a 78 year old post-menopausal woman and was observed incidentally.

INTRODUCTION

By histogenesis, ovarian neoplasm's can be classified into three major groups comprising of epithelial, stromal and germ cell types. Out of these, epithelial tumors form the largest and the commonest category of ovarian tumors [1]. These neoplasms may range from benign to borderline to malignant depending on their cellular features and presence/ absence of invasion. Brenner tumors is a rare type of epithelial derived ovarian neoplasm with around 1-2% incidence and the vast majority of them are benign [2].

In the communication present we report a rare case of incidentally diagnosed Brenner tumor in a 78 year old female who was operated per se for a large serous cystadenoma in right ovary.

Case Report

A 78 year old post- menopausal woman was presented at a peripheral referral hospital with a complaint of gradual distension of abdomen and related pressure symptoms. Examination revealed markedly enlarged abdomen with ascites. The patient had no past history of serious illness or surgery. Ultrasonography revealed a large cystic ovarian tumor on right side and mildly enlarged ovary on left side. The hematological and biochemical profile of the patient did also not reveal any significant findings. The patient underwent a total abdominal hysterectomy with bilateral salphingoophorectomy and the specimen was sent for histopathological evaluation.

Gross findings

Uterus and cervix along with enlarged cystic right sided ovarian tumor and mildly enlarged left ovary were received. Right ovarian cystic mass measure 15 cm in maximum diameter. On puncture serous fluid was obtained. Cut surface showed a bilocular cyst with larger cyst filled with serous fluid and the smaller cyst showed white gelatinous material (fig1). Wall was smooth with no papillary proliferation. Left ovary measures of 5.3x3x2.5cm. Cut surface was mostly solid, yellow white and nodular and capsular break was not evident.



Figure 1: Gross appearance of left Brenner tumor and right serous cyst adenoma ovary.

Microscopic findings

Section from the left ovary showed a benign Brenner tumour with bundles of tightly packed stromal cells enclosing solid islands of epithelial cell nests composed of polygonal cells with regular oval nuclei and longitudinal grooving (coffee-bean appearance) (fig.2). Section from the right ovary showed a serous cyst adenoma lined by flattened epithelium with uniform fibrous wall. The patient was well after proper follow up action.

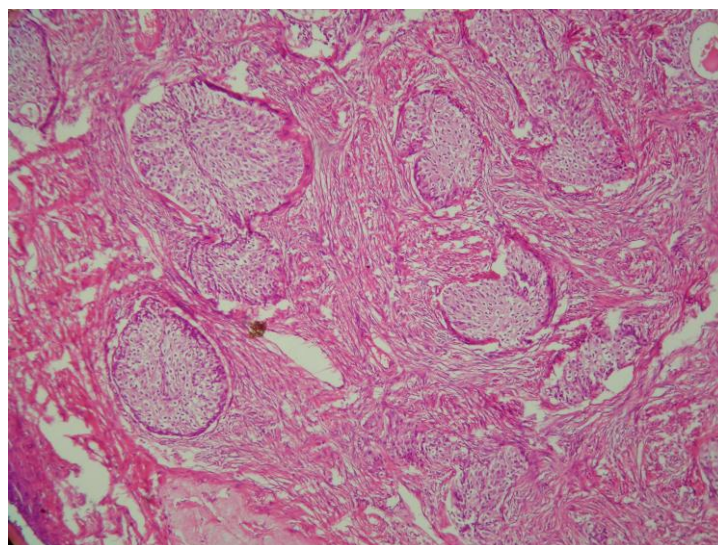


Figure 2: The epithelial nests of Brenner tumor are composed of cells with oval nuclei embedded with in the fibrous stroma.

DISCUSSION

Epithelial ovarian tumours that resembled transitional cell neoplasm of the urinary tract are subclassified into brenner tumour and Transitional cell carcinoma (TCC). Brenner tumours are rare tumors comprising 1-2% of ovarian neoplasm [2,3]. Average age at presentation is 50 year and around 71% cases occur in females of > 40 years of age [3,4].

Brenner tumors have slow rate of growth and rarely they are associated with ascites. These tumors may vary in size. Mostly these tumors are unilateral, however bilaterality of 9.8% has been reported by Marian Waxman but most of the tumors are less than 2 cm and usually diagnosed as incidental finding [4]. Grossly they are firm with white or yellowish white in colour [5].

It is not unusual for Brenner tumor to coexist with other neoplasm. The most frequent occurrence has been seen with mucinous cystadenomas. Other associations with germinal inclusion cysts, simple cysts [6], Struma ovarii [2,7] cystic teratomas, Stromal sarcomas and chocolate cyst ovary [8] has also been reported. Though Brenner tumors have been commonly reported along with other epithelial tumours in the same ovary, however it was rare that Brenner tumor was associated with an epithelial tumor in contralateral ovary. Brenner tumor have also been reported with TCC of urinary bladder [2]. In our case Brenner tumour was associated with serous cystadenoma in contralateral ovary and was found incidentally.

Tanja Pejovic et al [9] found amplification of 12q14 – 21 sequences in both (Mucinous and Brenner) tumors. These tumours occurred simultaneously, one in each ovary, in a patient. Same genetic alteration of these tumors suggested that both tumors were clonally related.

Serous cystadenoma have been also found associated with Brenner tumors but to lesser extent [4].

Brenner tumors are believed to arise from urothelial metaplasia of ovarian surface epithelium [3,4]. Ultrastructural studies revealed similarities between brenner epithelium, urothelium and walthard nest which strengthened the theory of urothelial metaplasia of the celomic epithelium [4,10].

Recent Immunohistochemical investigations have concluded true urothelial differentiation in ovarian brenner tumor [11]. In a study by Logani, Brenner tumor was differentiated from transitional cell carcinoma of the bladder (TCC-B) and transitional cell carcinoma of the ovary (TCC-O) using uroplakin III (UROIII), thrombomodulin (THR) and cytokeratin 20 (CK20). This study concluded that Brenner tumor had 82% positivity for UroIII and 76% for THR which supports true urothelial differentiation, whereas TCC-O and TCC-B had partial immunophenotypic overlap.

TCC-O rarely expressed Uro III, THR & was negative for CK20 with 82% WT1, positivity where as TCCB expressed 40% Uro III positivity, 61% THR positivity with CK20 positivity but was negative for Wilm's tumor protein (WT1) [11].

Molecular genetic analysis of 19 TCC including 13 Brenner and 6 TCC done by Cuatrecasas M showed different expression of EGFR p16 and p53 by Brenner tumor and TCC. Malignant Brenner tumors were negative for p16, RB & p53, while strong positivity of cyclin D1, Ras & EGFR was seen. TCC showed over expression of p53, p16 & was negative for EGFR, cyclin D1 & Ras. These results suggest that Brenner and TCC follow different tumorigenic pathways [12].

CONCLUSION

This case of bilateral ovarian tumour has been reported because of

- Infrequent occurrence of Brenner tumor.
- Its detection in as an incidental finding on pathologic examination
- Age of the patient which is less common for Brenner tumor.
- Occurrence of epithelial serous cystadenoma which is less frequent as compared to mucinous cystadenoma

REFERENCES

1. Scully RE, Clement PB, Young RH (ed). Sternberg's Diagnostic Surgical Pathology, 4th Edn Vol3, Philadelphia: Lippincott Williams & Wilkins, 2004; 2568-2570.
2. Rosai J. (Ed). Akerman's Surgical Pathology, 9th Edn Vol2, Harcourt Brace and Company, 2004; 1671-1672.
3. Hemalatha AL, Prakash K. Bilateral malignant Brenner tumor of ovary. J Obstet Gynecol India. 2005; 55; 81-82.
4. Marian Waxman MD. Pure and mixed Brenner tumors of the ovary Clinicopathologic and Histogenetic Observations. Cancer. 1979; 4; 1830- 1839.
5. Silverberg SG. Principles and practice of surgical pathology and cytopathology, 3rd Ed, New York. Churchill Livingstone 1997; 2544-2546.
6. Steven GS. Brenner tumor of ovary: A clinicopathologic study of 60 tumors in 54 women. Cancer. 2006; 28; 588-596
7. Yoshida M, Obayashi C, Tachibana M, Minami R. Coexisting Brenner tumor and struma ovarii in the right ovary: case report and review of the literature. Pathol Int. 2004; 54; 793-797.
8. Hiwale KM, Bakane BC. Mixed Ovarian neoplasm: Brenner tumor with chocolate cyst. The Antiseptic. 2002; 99; 287-288.
9. Tanja Pejovic , Nicole Bürki , Kunle Odunsi , Paul Fiedler, Natalie Achong , Peter E. Schwartz, and David C. Ward. Well-Differentiated Mucinous Carcinoma of the Ovary and a Coexisting Brenner Tumor Both Exhibit Amplification of 12q14-21 by Comparative Genomic Hybridization. Gynecol Oncol. 1999; 74(1):134-137.
10. Kumiko Ogawa, Sonny LJ, Samuel M.C, Immunohistochemical analysis of uroplakins, urothelial specific proteins in Ovarian Brenner tumors, normal tissues, and benign and neoplastic lesions of the female genital tract. Am J Pathol. 1999; 155; 1047-1050.
11. Logani S, Oliva E, Amin MB, Folpe AL, Cohen C, Young R.H. Immunoprofile of ovarian tumors with putative transitional cell (urothelial) differentiation using novel urothelial markers: histogenetic and diagnostic implications. Am J Surg Pathol. 2003; 27; 1434-1441.
12. Cuatrecasas M, Catusus L, Palacios J, Prat J. Transitional cell tumors of the ovary: a comparative clinicopathologic, immunohistochemical, and molecular genetic analysis of Brenner tumors and transitional cell carcinomas. Am J Surg Pathol. 2009 ; 33; 556-67.