



Bilateral Brenner Tumors of the Ovary with Unilateral Mucinous Cystadenoma: A Case Report

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Abstract

Brenner tumors are rare ovarian neoplasms and that are part of transitional cell tumors of the ovary. The majority of these tumors are benign and unilateral and they are commonly diagnosed during histopathology. We hereby report the case of a 46 years old premenopausal woman with bilateral Brenner tumor of the ovary treated surgically within a 4-year-period and the association with mucinous cystadenoma unilaterally. According to our case, when diagnosis of Brenner tumor is established in one ovary, a high index of suspicion for bilateral Brenner tumor is required when ovarian mass is detected in the other ovary.

Keywords: Brenner tumor; Mucinous cystadenoma; Ovarian neoplasm

Introduction

Brenner tumors are relatively uncommon and account for 1-2% of ovarian neoplasms [1]. Brenner tumors are a subgroup of transitional cell tumors of the ovary and histologically are characterized by epithelial nests of transitional cells surrounded by fibrous stroma [2]. The majority of these tumors are benign with a 2% incidence of malignancy and occur mostly in the postmenopausal women [3]. Most of Brenner tumors are unilateral and in 5-7% of cases the tumors are bilateral [4]. We hereby present a case with concurrence of bilateral Brenner tumor in a woman with a benign Brenner tumor as an incidental finding during subtotal hysterectomy and unilateral salpingo-oophorectomy due to an ovarian mass and a previous history of a surgically treated mucinous cystadenoma of the other ovary with benign Brenner component diagnosed 4 years before.

Case report

A 46 years old premenopausal woman presented to our outpatient department for her routine gynecological check-up. From past medical history, patient underwent a left adnexectomy 4 years ago due to an ovarian mass. Histopathology of the specimen revealed a mucinous cystadenoma with benign Brenner component. Since then, the annual examinations performed did not show any pathological findings. The cervix and the vagina were found to be normal on speculum examination. Bimanual examination revealed a retroverted uterus and a palpable mobile right adnexal

mass was incidentally detected. Accordingly, transvaginal ultrasonography confirmed the asymptomatic lesion in the right adnexa. Sonographic findings consisted of an approximately 5 cm mass with both solid and cystic components suggestive of an ovarian tumor. Hence, magnetic resonance imaging (MRI) along with tumor markers tests were suggested to the patient. MRI showed a lobulated enhancing lesion measuring 4, 4x3, 4x3, 2cm and tumor markers levels were within normal range. Patient was taken up for exploratory laparotomy after obtaining informed consent. Peri-operative findings included a normal shaped uterus and a multilobulated mass with both cystic and solid areas located on the right ovary. Thus, subtotal hysterectomy with right salpingo-oophorectomy was performed and the specimen was sent for pathological examination. Histopathology of the mass was consistent with a benign Brenner tumor of the right ovary. Immunohistochemistry was performed on serial sections to further confirm the nature of the tumor; epithelial cells of the tumor stained positively for cytokeratin (CK) 7 and were negative for CK20. Therefore, the diagnosis of Brenner tumor was established. Postoperative course of the patient was uneventful and she was discharged on postoperative day 3 with advice of regular follow-up.

Discussion

Brenner tumors are generally asymptomatic and the majority of them are diagnosed as incidental peri-operative finding or during histopathology of an adnexal mass [5]. Clinical presentations of Brenner tumors may include abdominal fullness or pain, a palpable pelvic mass, abnormal vaginal bleeding in postmenopausal women

and in some rare cases nausea, vomiting, back pain have been also described [6]. Diagnosis of Brenner tumors with imaging studies is considered difficult. Both ultrasound and computed tomography are techniques with limitations and low specificity, due to non-specific characteristics of Brenner tumors [7]. According to our case, Brenner tumors may coexist with other ovarian neoplasms; in approximately 20% of Brenner tumors these tumors mainly occur in association with mucinous or serous cystadenomas [8]. It has been recently described that Brenner tumors may also involve tissues around the female reproductive system, except for the ovary, such as the uterus, vagina, broad ligament and omentum [9].

On gross pathological examination, tumors vary in size and are vividly circumscribed solid gray, white, or slightly yellow with cystic spaces. Microscopically, abundant thick fibrous stroma with nests of transitional-like epithelial cells resembling urothelium. Malignant or borderline Brenner tumors are characterized by less prominent fibrous component than benign lesions [3,10] and histologically the epithelium of malignant Brenner tumors is similar to urothelial neoplasms. Therefore, when a malignant Brenner tumor is diagnosed, it is essential to exclude metastasis from the urinary tract [11]. Poorly differentiated adenocarcinoma of the ovary should be included in the differential diagnosis of malignant or borderline Brenner tumors. Hence, proper extensive sampling of the lesion and immunohistochemistry should be performed in order to make the distinction [6]. Malignant Brenner tumors activate signaling pathway PI3K/AKT through EGFR, whereas transitional cell carcinomas have p53 mutations with overexpression of p53 and p16 protein [12]. Surgical resection is considered the treatment of choice for Brenner tumors. When these tumors are surgically treated if symptoms are present, will subside and treatment is considered prompt and efficient [4]. Generally, the prognosis of Brenner tumors is considered favorable [3].

In conclusion, we herein present a premenopausal woman diagnosed with bilateral Brenner tumor of the ovary within a 4-year-period because of the rarity of concurrence, especially before menopause, and the co-occurrence with mucinous cystadenoma in one ovary. Moreover, when diagnosis of Brenner tumor is established in one ovary, a high index of suspicion for

bilateral Brenner tumor is required when ovarian mass is detected in the other ovary. It is important to identify and report cases of bilateral Brenner tumors, due to their challenging diagnosis via histopathology.

References

1. Hemalatha AL, Konanahalli P. (2005) Bilateral malignant Brenner tumor of ovary. *J Obstet Gynecol India*. 55: 81-2.
2. Woodruff JD, Dietrich D, Genadry R, Parmley TH. (1981) Proliferative and malignant Brenner tumors: review of 47 cases. *Am J Obstet Gynecol*. 141: 118-125.
3. Mittal N, Das B, Manuja S, Gupta R. (2019) Bilateral Brenner tumor of ovary with associated unilateral mucinous cystadenoma: a case report. *Int J Reprod Contracept Obstet Gynecol* 8: 212-224.
4. Katke RD, Acharya S. (2017) Huge Brenner's tumour of ovary (6.2kg) in a postmenopausal female - a rare case report and review of literature. *J Gynecol Women's Health*.
5. Giriyan SS, Barnawal AA. (2015) Mucinous cystadenoma of ovary with benign brenner component: a case report. *J Med Dent Sci Res*. 2: 7-10.
6. Zheng R, Heller DS. (2019) Borderline Brenner Tumor: A Review of the Literature. *Arch Pathol Lab Med*. 143: 1278-1280.
7. Green GE, Morteale KJ, Glickman JN, Benson CB. (2006) Brenner tumors of the ovary sonographic and computed tomographic imaging features. *J Ultrasound Med*. 25: 1245-1251.
8. Pradhan P, Mohanty L, Pradhan D, Pujari S, Kar A. (2017) Benign brenner tumor of ovary with mucinous cystadenoma: A case report. *Asian J Pharm Hea Sci*. 7: 1643-1646.
9. Hu RY, Deng YJ, Zhu HH. (2020) Extraovarian Brenner tumor in the uterus: a case report and review of literature. *Diagn Pathol*. 15: 22.
10. Borah T, Mahanta RK, Bora BD, Saikia S. (2011) Brenner tumor of ovary: An incidental finding. *J Midlife Health*. 2: 40-41.
11. Ramalingam P. (2016) Morphologic, Immunophenotypic, and Molecular Features of Epithelial Ovarian Cancer. *Oncology (Williston Park)*. 30: 166-176.
12. Ali RH, Seidman JD, Luk M, Kalloger S, Gilks CB. (2012) Transitional cell carcinoma of the ovary is related to high-grade serous carcinoma and is distinct from malignant brenner tumor. *Int J Gynecol Pathol*. 31: 499-506.