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Case Report

The Tale of inconceiveable bilateral benign brenner tumor of the ovary in a young female

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Abstract

Brenner tumors of the ovary are rare tumors accounting for approximately 2 % of all ovarian malignancies.Predominantly unilateral in presentation.Bilateral behavior of the tumor is an unusual occurance that occurs in less than 10 % of all the Brenner tumors.Generally it occurs in postmenopausal and infrequently in young reproductive agegroup ,mostly presentation remains asymptomatic and mainly incidental findings are the key to diagnosis.They are now placed in the category of surface epithelial tumors of the ovary and thought of taking its origin fom surface epithelium via transitional cell metaplasia.They are mostly less than 2 cms ,generally well circumscribed.This extraordinary case is a case of a 30 year old female who presented with bilateral Brenner tumor of the ovaries.

Keywords: Bilateral Benign Brenner Tumor of Ovaries In a young female

1. Introduction

Brenner tumors of the ovary are rare tumors accounting for approximately 2 % of all ovarian malignancies.[1] Predominantly unilateral in presentation. Bilateral behavior of the tumor is an unusual occurrence that occurs in less than 10 % of all the Brenner tumors.[2] Generally it occurs in postmenopausal and infrequently in young reproductive age group, mostly presents as asymptomatic and mainly incidental findings are the key to diagnosis[2].They are now placed in the category of surface epithelial tumors of the ovary and thought of taking its origin fom surface epithelium via transitional cell metaplasia. They are mostly less than 2 cms ,generally well circumscribed.[2,3] They arise from ovarian surface epithelium or pelvic mesothelium (coelomic epithelium) through a transitional metaplastic process.[2,3]

In 30% of the cases an association with another epithelial ovarian neoplasm, including mucinous cystadenomas, serous cystadenomas, dermoid cysts, fibromas and simple cysts can be seen[3,4]

2. Case Report

A 30 year old female patient came to our hospital 3 months back, with history of lower abdominal pain dull in nature since one week. Patient was asymtomatic, till date. She was a homemaker and had two children and no similar complaints in the past. On examination bilateral palpable masses were found out in both the iliac fossas .MRI was done for

her which showed two masses in the corresponding fossas .The larger mass was right sided, msg 6.5x 4.5 cms ,left sided mass measured 4x3.5 cms. The masses were Homogenous and uniformly hypointense (fig 1 a).CT scan confirmed two solid masses. No lymph adenopathies were found in this patient. Bilateral salphingo-opherectomy was done. Post operative period was uneventful. Grossly two solid mases were received,the right sided mass measured 6.5 x 5.5 cms. Left sided mass measured 4.5 x 3.5 cms (fig 1 b). Outer surface of the tumor mass was whitish brown, nodular ,solid and hard in consistency (fig 1b). Cut surface showed yellowish brown well circumscribed solid areas and nodular, with flecks of grayish areas interspersed in between(corresponding to the fibrous stroma). (fig 1c)

Microscopically tumor showed dense fibrous stroma with several branching nests of aggregated epithelial tumor cells These tumor cells had abundant Amphophilic cytoplasm and distinct cell membrane, giving it a characteristic Coffee bean appearance(fig 2B,C,D).Histopathological findings were consistent with that of a Benign Brenner Tumor.

Fig 1 a : MRI Report

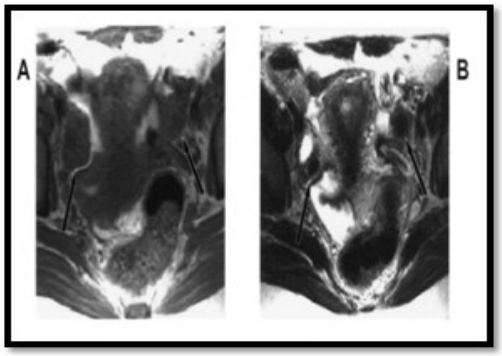
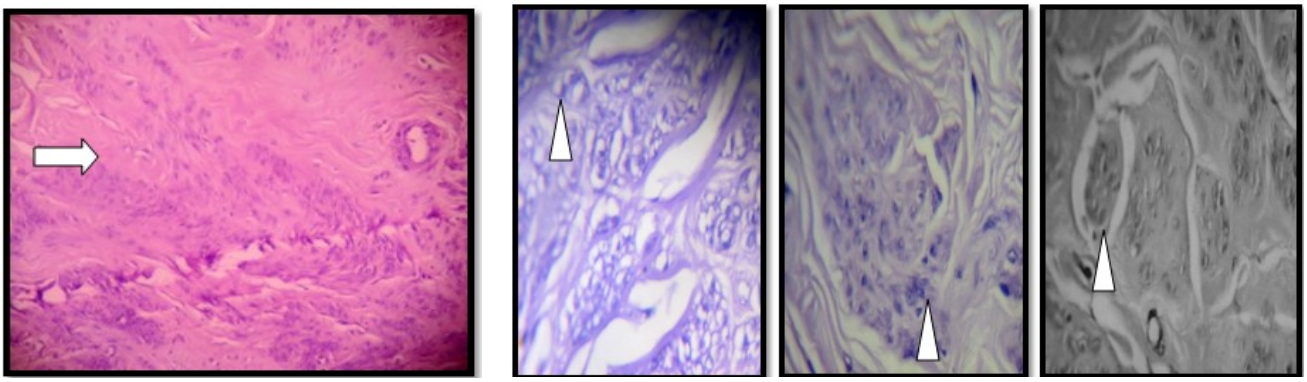


Fig 1 b :Outer surface solid and nodular

Fig 1 c: cut surface of both masses show yellowish areas

Fig 2A to D:A- low power-Dense fibrous stroma with several branching nests of aggregated epithelial tumor cells.

Figure 2 A **Figure 2B** **Figure 2C** **Figure 2D**



3. Discussion

Brenner tumor is a fibroepithelial tumor comprising of transitional cell epithelial nests which look similar to bladder epithelium.[1] Brenner tumor of ovaries are rare neoplasms that constitute about 1.4 -2.5 % of all ovarian tumors in the post menopausal agegroup.[1] Newer studies show that reproductive age holds good for the tumor .Brenner tumor presents with rounded nests of squamous cells or transitional cells like epithelium ,with speckles of glandular structures of cylindrical cells with abundant fibrous non epithelial cells.[2] 95% of the tumors are non malignant, only 2-5% are seen to lead to malignancies.[2]

In earlier studies it was presumed that it did not originate from ovarian surface epithelium, but tumor cells originated from islets of congenital epithelium that had reached ovarian stroma in an unknown way, however, they had also been postulated to originate from rete ovary.[3]Presently many studies show that Brenner tumors are derived from surface epithelium of ovary or pelvic mesothelium through transitional cell metaplasia.[4,5] Associations with other surface epithelium neoplasms either bilateral or unilateral is 30% in reports till date.[5,6] Bilateral Brenner tumors are rare less than 10%.[7,8,9,10] Bilaterality occurs in 5-7% of the cases.[11,12] Asymptomatic symptoms like lower abdominal pain, nausea, vaginal bleeding and palpable mass have been reported. [12] The vast majority of the Brenner tumors are benign, with less than 5 % reports of borderline or malignant counterparts. The median age of the patient at diagnosis is 45-50. The size of Brenner tumors varies from microscopic to huge, but most measure less than 5 cm in diameter.[12]

CT/MRI findings of Brenner tumor shows a solid tumor or mixed homogenous solid-cystic areas, with or without calcifications in the solid parts of the tumor.[11,12] These calcifications are frequently extensively amorphous in appearance, but peripheral round calcification or cloudy hazy granular calcification compatible with psammomatous calcification has been reported.[13] Differentials of the benign Brenner tumor can be unending, for instance to distinguish Benign Brenner from a fibroma and a fibrothecoma may be difficult with MRI, but they present with similar clinical implications as they have less chances of getting malignant. Large fibromas, show internal edema and cystic changes and fibromas and fibrothecomas are associated with endometrial polyps and hyperplasia and not with ipsilateral (or contralateral) ovarian neoplasms.[12,13] Other differential diagnoses encompasses solid ovarian masses, like benign teratoma, metastatic tumors of the ovary (Krukenberg tumors) and primary lymphomas, subserosal pedunculated or intraligamentous uterine leiomyomas and malignant Brenner tumors.[12,13]

The benign teratoma is composed of fat density and characteristic calcification consistent with teeth.[12,13] The Krukenberg tumors are usually bilateral, with additional findings of primary malignancy.[12,13,14] Primary lymphomas of the ovary usually show a non-specific solid mass, but no calcification. Malignant Brenner tumors are extremely rare and consist of mixtures of solid and cystic areas with necrosis and proliferating components. The solid components show marked enhancement after IV administration of gadolinium.[13,14] These findings could help to differentiate between benign and malignant Brenner tumor. Generally it is noticed that larger masses are nodular and cystic. Small tumors are composed of branching epithelial nests and fibrous stroma1 in various studies.[15,16] Brenner tumors observed in our study mostly occurred in older women, which is consistent with literature data.[16,17,18,19]

Therefore Brenner Tumor still remains an extraordinary tumor and lot has still to be excavated about its being with the two best adjuncts hand in hand, that is CT/MRI along with histopathological correlation for the same.

References

1. Yamamoto R, Fujita M, KuwabaraM, Sogame M, Ebina Y, Sakuragi N, Kato H , Fujimoto S. Malignant Brenner tumor of Ovary and Tumor case Reports. *Jpn J Clin OncoI* 1999;29(6):308-313.
2. Prat J.Transitional and Squamous cell tumors .In:Pathology of the Ovary. Philadelphia: Imprint of Elsevier 2004;175-177.
3. Heye S, Bielen D, Vanbeckevoort D. Left ovarian brenner tumor, *JBR–BTR*, 2005, 88: 245-246.
4. Outwater EK, Siegelman ES ,Kim B, Chiowanich P, Blasbalg R,Kilger A. Ovarian Brenner tumors:MR imaging characteristics. *Magn Reson Imaging*. 1998; 16: 1147-1153.

5. Moon WJ, Koh BH, Kim SK.Brenner tumor of the ovary: CT and MR findings. *J Comput Assist Tomogr*, 2000; 24: 72-76.3.
6. Ohara N, Teramoto K. Magnetic resonance imaging of a benignBrenner tumor with an ipsilateralsimple cyst. *Arch Gynecol Obstet* 2001; 265: 96-99.
7. Siegelman ES, Outwater EK. Tissue characterization in the female pelvis by means of MR imaging. *Radiology* 1999; 212: 5-18.
8. Merino MJ, Edmonds P, Volsi L. Appendecial carcinoma metastatic to the ovaries and mimicking primary ovarian tumors. *Int J Gynecol Pathol* 1985;4:110-120.
9. Cuatrecasas M , Guiu M , Prat J.Synchronous mucinous tumors of the appendix and the ovary associated with pseudomyxoma peritonei. *Am J Surg Pathol* 1996;20:739-746.
10. Ronnett BM et al.The morphologic spectrum of ovarian metastases of appendiceal adenocarcinomas.A clinicopathological and immunohistochemical analysis of tumors often misinterpreted as primary ovarian tumors from other gastrointestinal sites. *Am J Surg Pathol* 1997;21:1144-1155.
11. Young RH ,Hart WR .Metastases from carcinoma of pancreas simulating primary mucinous tumors of the ovary :a report of seven cases. *Am J Surg Pathol* 1989;13:748-756**.**
12. Damjanov I. Ovarij (jajnik). In: JUKIÆ S, et al. Patologija enskog spolnog sustava. 3rd ed. Zagreb. AGM 1999; 155-224.
13. Gregureviae M, Pavliae Z, Grizelj V. Ginekologija. Zagreb: *Jumena* 1987.20:15-17.
14. Moon WJ, Koh BH, Kim SK . Brenner tumor of the ovary: CT and MR findings. *J Comput Assist Tomogr* 2000; 24: 72-76.
15. Ohara N, Teramoto K. Magnetic resonance imaging of a benign Brenner tumor with an ipsilateral simple cyst. *Arch Gynecol Obstet* 2001; 265: 96-99.
16. Siegelman ES, Outwater EK. Tissue characterization in the female pelvis by means of MR imaging. *Radiology* 1999; 212: 5-18.
17. Moon WJ, Koh BH, Kim SK, Kim YS, Rhim HC, Cho OK, Ahm CK, Byun JY, Cho KS, Kim SH. Brenner tumor of the ovary: CT and MR findings. *J Comput Assist Tomogr* 2000; 24:72-6.
18. Pejovic T, Burki N, Odunsi K, Fiedler P, Achong N, Schwartz PE, Ward DC. Well-differentiated mucinous carcinoma of the ovary and coexisting Brenner tumor both exibit amplification of 12q14-21 by comparative genomic hybridization. *Gynecol Oncol* 1999;74:134-7.
19. Hoffman M,Ruffolo EH, Harris W. Giant Brenner tumor. Case report. *J Fla Med Assoc* 1989 ; 76:772-3.
20. Conforti S, Di Serio C, Donofrio V, Mastrantonio P. Bilateral Brenner tumor. *Eur J Gynaecol Oncol* 1989;10:438-41.