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Benign brenner tumor of ovary with mucinous cystadenoma : A case report

Pranati Pradhan [1], Lity Mohanty [1], Dilleswari Pradhan [2], Sujata Pujari [2], Asaranti Kar[1]

1 Associate Professor, Dept. of Pathology, SCB Medical College, Cuttack, Odisha, India.
2 Assistant Professor, Dept. of Pathology, SCB Medical College, Cuttack, Odisha, India.

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***Corresponding author:**

Email : asarantikar@yahoo.co.in
Tel.: +91 - 9437170442

ABSTRACT

Brenner tumor of Ovary is a rare neoplasm of ovary affecting mostly post-menopausal women and constitute 2% of all ovarian tumors. It is mostly a benign tumor and malignant counterparts are a very rare occurrence. Brenner tumors are usually small and unilateral solid tumors. It is a type of surface epithelial tumor and the histogenesis is not clear. But the most accepted theory is it's origin from urothelial metaplasia of ovarian surface epithelium. Association of Brenner tumor with other neoplasms is a rare occurrence. We report here a case of unusually big benign Brenner tumor in association with a large mucinous cystadenoma with emphasis on it's clinical presentations, morphological spectrum and diagnostic morphologic features . A brief review of histogenesis of Brenner tumors has been submitted.

INTRODUCTION

Brenner Tumors are rare neoplasms of ovary constituting 2% of all ovarian tumors [1] with special predilection for post-menopausal women[2]. These are mostly benign and are detected incidentally[3]. Malignant tumors are extremely rare, seen roughly in 2-5% of all Brenner tumors[4]. These constitute a type of fibroepithelial tumors of ovary with components consisting of transitional epithelial cell nests similar to bladder epithelium and abundant fibrous stroma. These tumors are usually unilateral and mostly small , solid masses of up to 2cm in size[6]. However, less frequently these can be of bigger sizes when they are invariably associated with cystic components . About 20% of these tumors occur together with mucinous or serous cystadenomas or benign teratomas[5] when they may attain massive size up to 20-30 cm. The Brenner component in these cases appears as a small firm nodule in the cyst wall.

CASE REPORT

A 52year old, multiparous post-menopausal woman presented to the Gynecology OPD of SCB Medical College & Hospital, Cuttack with complaint of mass in the lower abdomen associated with dull aching pain for 6 months. There was no past or present history of any gynecological operation or major diseases. She had no addiction history or history of diabetes/ hypertension. Her menstrual and obstetric history were not suggestive. Ultrasonography of abdomen and pelvis revealed a right sided large adnexal mass of size 22 x20cm with both solid and cystic components suggestive of an ovarian tumor. Wth this she was planned for laparotomy and her blood counts were within normal limits. She was negative for HIV and HBV. Total abdominal hysterectomy with bilateral salpingo-oophorectomy, regional lymph node dissection and omentectomy was done with suspicion of a malignant ovarian tumor due to its large size.

Gross specimen received consisted of uterus, cervix and bilateral apendages with the tumor mass attached to right side tube and ovary along with iliac, obturator, para-aortic group of lymph nodes and omentum. Involved ovary with the mass measured 25x20x18cm in size. Cross section revealed both solid and cystic areas which were multiloculated. The solid mass component measured 8x6cm in size with cut section showing firm, white to yellowish white areas with gritty sensation on cutting. Cystic areas measured 17cm in diameter and constituted of multiple small thin walled cysts containing clear fluid. There were no areas of necrosis and hemorrhage. Gross examination of specimens of uterus, cervix, left ovary ,both fallopian tubes, omentum and all resected lymph nodes did not reveal any abnormality.

Multiple sections from the tumor mass as well as other resected specimens were examined. Microscopic examination of sections from the tumor mass showed a biphasic pattern of tumor tissue comprising of many well circumscribed nests of transitional epithelial cells present in a back ground of rich fibrous

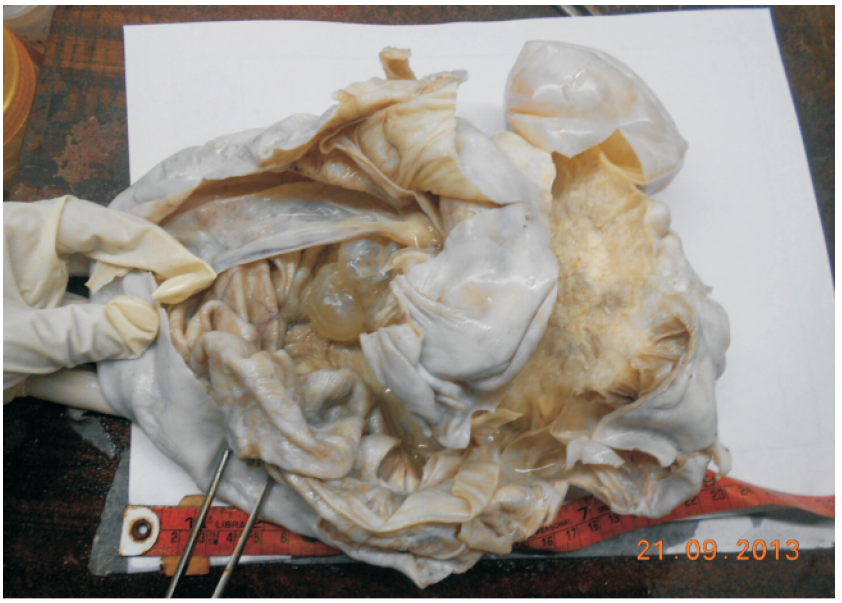

Fig 1 : Gross specimen of Brenner tumor (size:22x20cm) showing both cystic and solid components.

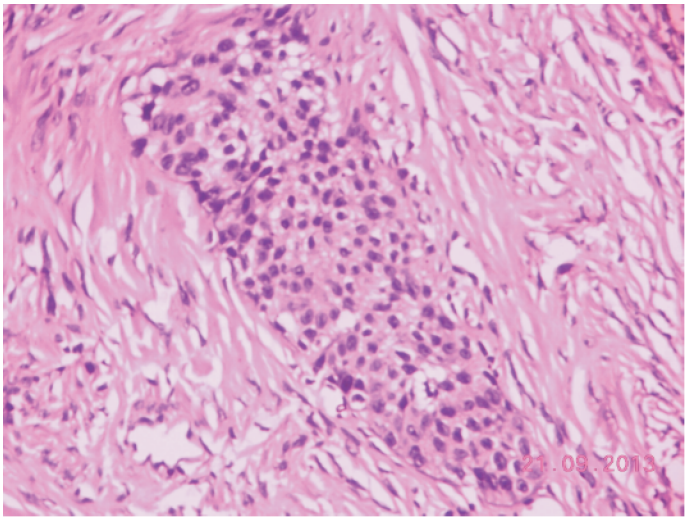

Fig 2a. : Microphotograph showing nest of transitional epithelium in a fibrous rich stroma. H&Ex100

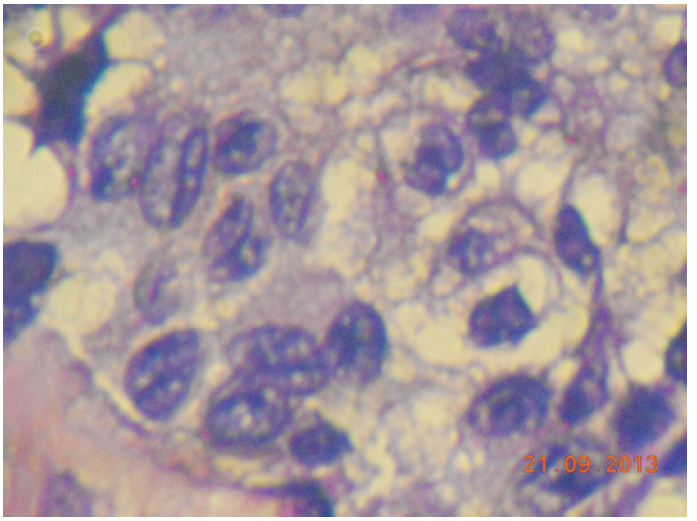

Fig 2c. : Microphotograph showing transitional cells with oval nuclei and nuclear grooving. H&Ex400

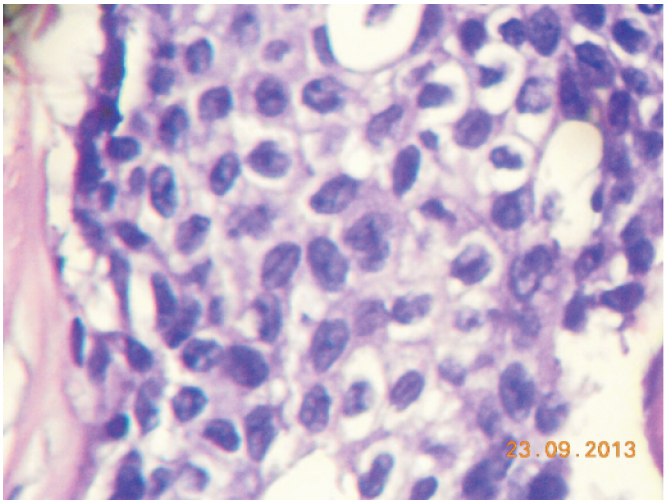

Fig 2b. : Microphotograph showing cells with clear cytoplasm and coffee bean nuclei. H&Ex200

stroma. The tumor cell nests contained oval to polygonal epithelial cells resembling the urothelium. Cells had moderate amount of clear or eosinophilic cytoplasm with round to oval vesicular nuclei ,some having single inconspicuous nucleoli. There were presence of prominent longitudinal nuclear grooving in some nuclei. Within the epithelial cell nests were some microcysts lined by metaplastic endocervical type columnar epithelial cells with little amount of eosinophilic secretions in the lumen. There were no areas of necrosis or hemorrhage. Microscopic examination of sections from other specimens and lymph nodes appeared normal. With this microscopic findings indicating presence of Brenner tumor of ovary with foci suggestive of benign mucinous tumor, a diagnosis of mixed tumor with components of Brenner and mucinous cystadenoma was rendered.

DISCUSSION

Brenner tumors are a rare type of surface epithelial tumors of ovary constituting about 1-2% of all ovarian tumors[1].The

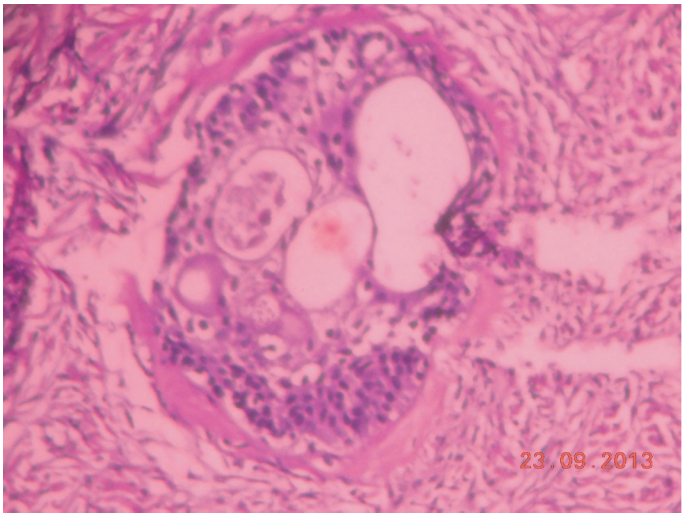

Fig 3a : Microphotograph showing microcysts inside epithelial cell nest. H&Ex100

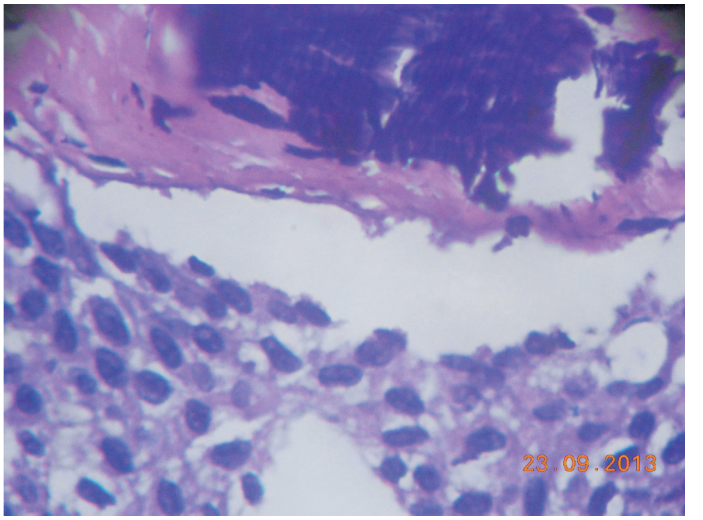

Fig 3b : Microphotograph showing focal area of calcification in fibrous stroma. H&Ex200

average age of presentation is around 50 years of age with a high predilection for post-menopausal women [2].

These are commonly asymptomatic and are incidental pathological findings on laparotomy but sometimes can present with symptoms like abdominal pain, vaginal bleeding or mass in the pelvis. These are classically unilateral and are seen as small, solid, firm, grayish white tumors of less than 2cm in size. However, these are bilateral in 5-7 % of cases [6,7] and could be large in size with both solid and cystic components. These tumors are often associated with mucinous or serous cystadenomas in around 20% of cases[5], when they can present as massive multiloculated cysts with solid component presenting as a small mural nodule. The present case had a large solid benign Brenner component in association with a huge mucinous cystadenoma .

Histologically, Brenner tumors are universally benign; malignant tumors are very rare, seen only in around 2-5% of cases [4]. Some borderline tumors have also been reported. The histogenesis of Brenner tumors has always been very fascinating and is still a subject of great controversy . Some of the advocated theories suggest origin from the granulosa cells of the Graafian follicle, rete ovarii and mesonephric remnants, Walthard cell rest, and coelomic epithelium[8,9]. The most widely believed histogenesis of these tumors support of their derivation from the surface epithelium of ovary or pelvic mesothelium through transitional cell metaplasia to form the urothelial like components seen in the tumors. The association of ovarian Brenner tumors with other tumors derived from surface epithelium (i.e., mucinous and serous cystadenomas) strongly favors a surface epithelial histogenesis.

Macroscopically, benign Brenner tumors are well circumscribed firm to hard mass with grayish white or slightly yellow cut surface which can be gritty on cutting due to frequent presence of foci of calcification [2]. Borderline tumors are typically cystic with polypoid masses projecting into the lumen. Malignant Brenner tumors are predominantly cystic with solid components. Microscopically, Brenner tumors are characteristically defined by sheets of transitional cells resembling those of urinary bladder forming solid and cystic epithelial nests surrounded by abundant dense fibroblastic stroma [10]. The cells have oval nuclei with distinct nucleolus and frequent nuclear groovings giving a coffee-bean appearance. The microcysts are lined by metaplastic columnar epithelium with eosinophilic secretions in the lumen which suggested features of mucinous cystadenoma. The stroma may show focal hyalinization and calcific deposits. The presence of both epithelial and stromal components have been described as the characteristic feature of Brenner tumors. The cytologic features of borderline or malignant Brenner tumors are polygonal cells in clusters or single cells with moderately pleomorphic nuclei having granular chromatin and multinucleate cells with variable mitotic figures.

CONCLUSION

Brenner tumor of the ovary has always been discussed by pathologists as an enigmatic tumor because of its rarity and the much disputed histogenesis. The present case has been reported because of its large size and its association with a large mucinous cystadenoma. Frequent reporting of these cases and their pathological associations might help in resolving the mystery surrounding the Brenner tumor.

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