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Coexistence of Benign Brenner Tumor with Mucinous Cystadenoma in an Ovarian Mass

1. Dr. Anshita Garg, Resident, Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research centre, Dr. D.Y. Patil Vidyapeeth, Pimpri, Pune, Maharastra, India.
2. Dr. Rupali Bavikar, Professor, Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research centre, Dr. D.Y. Patil Vidyapeeth, Pimpri, Pune, Maharastra, India.
3. Dr. Shraddha Yadav (corresponding author), Resident, Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research centre, Dr. D.Y. Patil Vidyapeeth, Pimpri, Pune, Maharastra, India.
4. Dr. C.R. Gore , HOD & Professor, Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research centre, Dr. D.Y. Patil Vidyapeeth, Pimpri, Pune, Maharastra, India.

ABSTRACT

The most fatal gynecologic cancer is ovarian cancer. The most prevalent kind of ovarian cancer is the surface epithelial tumour. 15–20% of ovarian cancers among these are mucinous tumors. One of the most challenging ovarian neoplasms for surgical pathologists to understand is mucinous ovarian tumors. Other surface epithelial cancers can occasionally coexist with mucinous tumors. Making a correct diagnosis of mucinous tumors is so crucial. However, Brenner tumors seldom occur in conjunction with other neoplasms. Due to its rarity and contested histogenesis, ovarian Brenner tumor has traditionally been regarded by pathologists as a perplexing tumor. In this case report, we present a benign Brenner component in a large mucinous cystadenoma.

Introduction

In women, ovarian tumors are a frequent type of neoplasia. Ovarian cancers account for 30% of malignancies in female reproductive system, ranking as the seventh most often diagnosed cancer in women globally. [1] Among gynaecological malignancies, ovarian carcinoma has the greatest mortality rate, and often subclinical in their early stages.[2] Additionally, the patient presents with symptoms that are hazy and general. Ovarian cancers are divided into three primary types based on their origin: epithelial, stromal, and germ cell tumors.[3] The most typical sort of tumors are epithelial ones. The majority of primary ovarian cancers—roughly two thirds—are these tumors. About 2% of ovarian tumors are transitional cell tumors, a rare subtype of surface epithelial malignancy. 20% of these tumors co-occur with benign teratomas or mucinous or serous cystadenomas.[4] To warn gynaecologists and pathologists about the potential for such a conjunction , with the aid of histological and immuno-histochemical investigations, we are describing a case of a benign Brenner tumour that coexisted with a mucinous cystadenoma.

Case Report

A post-menopausal woman in her 76s was hospitalized with stomach pain that had been present for one to two months and abdominal distension that had been present for three months. The abdominal pain was diffuse, progressive, and slowly developing. There is no prior history of

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nausea, hematemesis, melena, loose stools, constipation, weight loss, or appetite decrease. There is no history of high blood pressure, diabetes, TB, asthma, allergies, or pertinent prior surgery. She is P2L2 and had no history of miscarriage or abortion. For 15 years, she had been postmenopausal. Her medical background was unremarkable. Vital signs remained steady. Physical examination revealed a massive abdomino-pelvic mass. The borders were uneven and not delicate to the touch. There were audible gastrointestinal sounds. The vaginal exam revealed nothing noteworthy.

Ultrasound examination showed a large cystic lesion is noted occupying the entire lower abdomen measuring 21x17 cm and showing multiple thick septations within suggestive of ? cystadenoma.

CT abdomen and pelvis (plain and contrast) revealed a large well defined homogenously hypodense, multi-septated complex cystic lesion with thin regular wall of approximate size 24x22x15cm arising from lower abdomen and pelvis not seen separately from B/L ovaries. On post- contrast images, there is enhancement of the septae and enhancement of the walls. Small solid soft tissue component is seen at the left posterolateral aspect of the lesion measuring about 5x4x2cm showing heterogenous post- contrast enhancement. Few venous vessels (arising from left adnexa – from left ovarian vein) are seen supplying this lesion near solid component, suggestive of neoplastic etiology – likely Cyst- adenocarcinoma.

Tumor markers (CA125 = 35.4 normal value - <30.2 U/ml , CA19-9= >1200.00 normal value - <37U/ml, CEA = 11.70 normal value - <5.00 ng/ml) were found to be high. Both the results of the chest X-ray and the laboratory data were normal. The patient gave written, fully informed consent. A midline incision was used to do abdominal and pelvic exploration under general anaesthesia. The left ovary had an enormous tumour that had a strong likelihood of being a mucinous cystadenoma.

Due to the high risk of cancer, a total hysterectomy along with bilateral salpingo-oophorectomy was done in this case.

Malignant cytology was done on ascitic fluid, and it revealed that there may have been some malignant cells present.

The resected specimen was sent to pathology department for histopathological examination. Grossly hysterectomy specimen with right ovary and bilateral fallopian tubes was observed measuring 9.5x4.5x2 cm. Right ovary was 1.5 cm in diameter while both fallopian tubes measured 2.1cm and 2.2 cm respectively. Additionally, a left ovarian cyst was sent seperately measuring 24 × 17x 16 cm with smooth external surface. (FIG 1.)

The cut surface of uterus with cervix along with right side ovary and bilateral fallopian tubes appeared normal. On cut open, left ovarian cyst showed multiloculated cysts filled with 8ml of thickened, dark brown mucinous fluid which oozed out along with few whitish soft tissue pieces. Few thickened areas were also noted. (FIG 2.)

Microscopy examination : Transitional epithelial nests are clearly seen amid a fibrous stroma. (FIG 3.) Multilocular cyst lined by mucinous secreting columnar epithelium was seen in the sections examined. (FIG 4.)These histological features are in accordance with focal borderline

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changes in mucinous cystadenoma with benign Brenner component. IHC marker p63 was done further to confirm the Brenner component which showed nuclear positivity in this case. (FIG 5.) A final diagnosis of Mucinous Cystadenoma with focal borderline changes and benign Brenner Tumour. Informed consent of patient is taken for the publication and research purpose. The patient is under follow-up.

Discussion

Despite the fact that the association between ovarian mucinous tumour and Brenner tumour is well known, it has only sometimes been documented that two different ovarian tumour types can coexist. Due to their histologic resemblance to the urothelium, Brenner tumors were previously characterised as transitional cell tumors. The median age of the patients is beyond 40years in 71% of cases., and the average age of presentation is 50years.[5] These tumors are occasionally discovered by chance during a pathologic evaluation for an oophorectomy that is being done for another cause. Brenner tumors typically show no symptoms.[6] Vaginal haemorrhage or stomach pain occasionally occurred. Histologically, benign tumors make up the majority of Brenner tumors; malignant tumors account for only about 2-5% of cases. With evolving histopathological criteria, Brenner tumors are uncommon. For malignant Brenner tumors, there is currently no known tumour marker. Despite the fact that ovarian Brenner tumors don't secrete hormones, accounts of Brenner tumors that do exist exist. Brenner tumour histogenesis has always been fascinating despite much debate. According to some theories, the origin may have originated from the rete ovarii and mesonephric residues, Walthard cell rest, coelomic & follicular epithelium, in addition to leftover granulosa cells of the Ovarian follicles.[7] According to the most frequently accepted histogenesis, these malignancies are caused by the ovarian epithelia or the pelvic mesothelium. A surface epithelial histogenesis is strongly supported by the presence of ovarian Brenner tumors and other malignancies (mucinous and serous cystadenomas) originating from the surface epithelium.

When viewed under a microscope, Brenner tumors are characterised by an abundance of thick fibroblastic stromal component accompanied by compact, cystic epithelial nests of transitional cells similar to the particular found in the vesica urinaria. The nuclei are ovoid with have prominent nucleolus, and are frequently grooved. Metaplastic columnar epithelium lines the micro-cysts, and the lumen is filled with eosinophilic secretions. Mucinous cystadenoma is suggested by this criterion.

The stroma may have calcific deposits and localised hyalinization. Brenner tumors have been characterised as having both stromal and epithelial components. Brenner tumors with borderline or malignant characteristics displayed multinucleated cells with a variety of mitotic patterns and polygonal cells either in group or single cells with relatively pleomorphic nuclei.[8]

Brenner tumors in postmenopausal women are often treated with an abdominal hysterectomy and bilateral salpingo-oophorectomy. Due to her menopausal state and potential for cancer, this procedure was carried out on our patient.

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Conclusion

This instance demonstrates that patients can still develop sizable asymptomatic Brenner's tumors. To confirm the diagnosis, a thorough histological study of the surgically resected material is required. Examine ovarian tumors carefully for the presence of malignant components, especially if they appear benign. A malignant malignancy's late or incorrect diagnosis could have fatal outcomes.

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FIG 1 : Gross picture of left ovarian cyst with smooth external surface

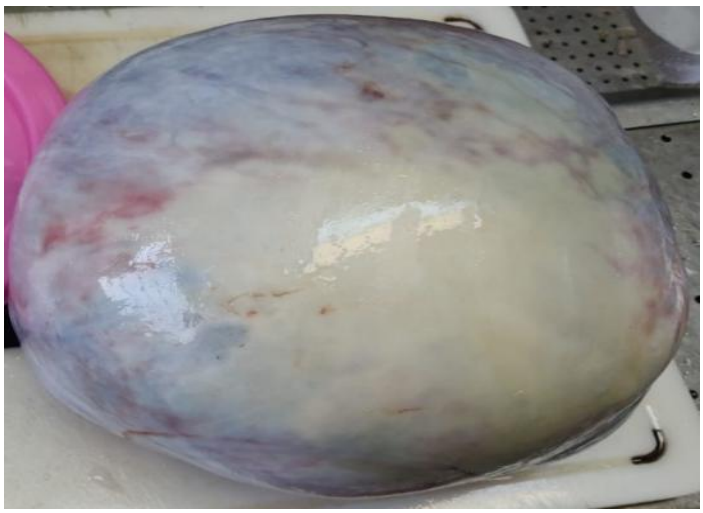

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FIG 2 : The cut surface of left ovarian cyst showing multiloculated cyst

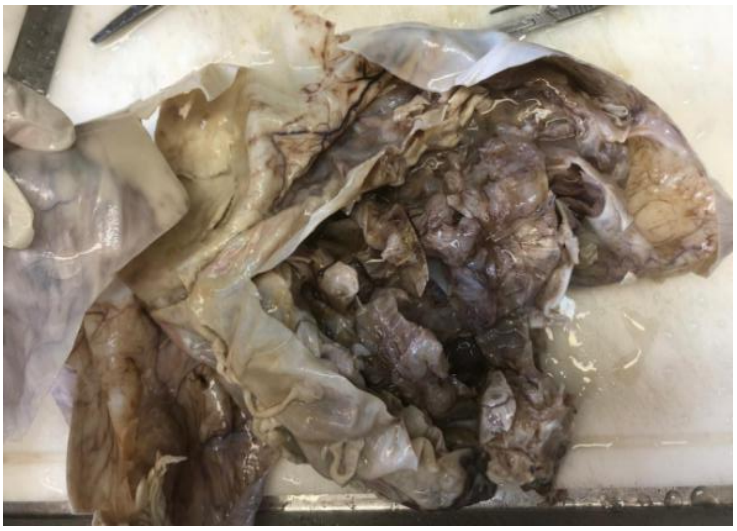

FIG 3 : Section shows Transitional cell nests and stroma (H/E stain at low power)

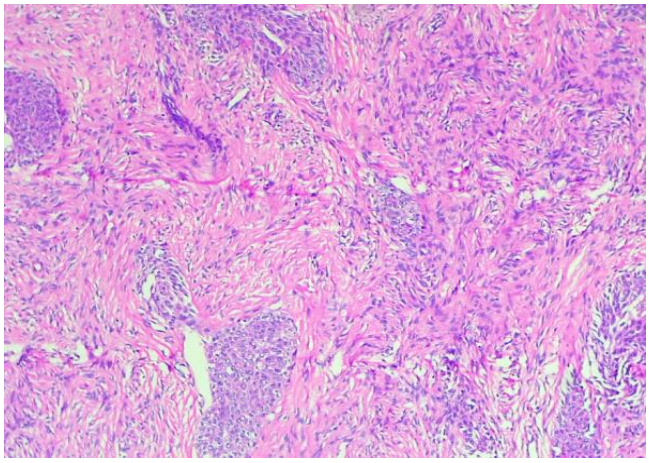

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FIG 4 : Section shows multiloculated cyst lined by mucinous secreting columnar epithelium (H/E stain at low power)

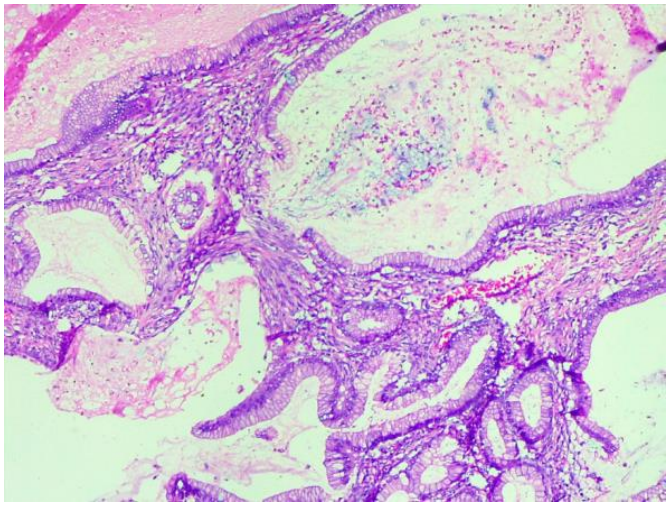

FIG 5 : p63 showing nuclear positivity in Brenner component