

The Art of Coexistence: A Rare Case of Mucinous Tumour with Brenner Tumour of Ovary

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DOI

[10.7324/APALM.3584](https://doi.org/10.7324/APALM.3584)

Article History

Received: 25-04-2025

Revised: 04-07-2025

Accepted: 08-07-2025

Published: 30-07-2025

How to cite this article

Tripathi C, Setia S, Rai NN, et al. The Art of Coexistence: A Rare Case of Mucinous Tumour with Brenner Tumour of Ovary. *Ann Pathol Lab Med.* 2025;12(7):77-79.

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Abstract

Ovarian tumours are the most common gynaecological neoplasm. Surface epithelial stromal tumours are the most common neoplasms of the ovary; mixed epithelial tumours are rare. We present a case of a postmenopausal female who presented with a right-sided abdominal lump for 6 months. USG and MRI showed a multiseptate cystic lesion with a central nodule. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was done. On histopathological examination, the diagnosis of mucinous cystadenoma with benign Brenner tumor was made. Mixed epithelial tumors are rare and pose a diagnostic dilemma; multiple histopathological sections should be evaluated to rule out the presence of dual neoplasm.

Keywords: Mixed epithelial ovarian tumors; mucinous cystadenoma; Brenner tumour.

Introduction

The prevalence of ovarian tumours is 2.5–6.6%, and it is the most common gynaecological neoplasm [1]. Surface epithelial stromal tumours are the most common neoplasms of the ovary, and they encompass five distinct subtypes including serous, mucinous, endometrioid, transitional and the clear cell types, which mostly occur in the pure form [4, 5]. Mixed epithelial ovarian tumors, by definition, are composed of admixtures of two or more of the five major cell types: serous, mucinous, endometrioid, clear cell, and Brenner/transitional [4]. According to the World Health Organization (WHO) 2014, neoplasms containing the minor component of more than 10% are named as mixed carcinomas [4, 5]. Surface epithelial stromal tumours are the most common neoplasms of the ovary; malignant, mixed epithelial tumours are still rarer [4, 5]. Mixed epithelial tumours always pose a diagnostic dilemma [5]. The evaluation of multiple sections of an ovarian neoplasm is strongly recommended to rule out a mixed carcinoma, as the behaviour of these tumours depends on the dominant cell type present [4, 5]. Ovarian Brenner tumour originates from Walthard nests; mucinous cystadenoma originates from ovarian surface epithelium. Ovarian mucinous neoplasms are associated with Brenner tumours in 1.3–4% of cases [1]. Although this combination has been recognized since the 1920s, its pathogenesis and origin are still enigmatic [1].

Case Report

A 72-year-old female presented with a lump in the abdomen for 6 months to the obstetric and gynaecology department. A palpable mobile adnexal mass was felt on the right side of the abdomen on per abdomen examination. Per speculum examination showed the uterus at 10 weeks size and a right adnexal mass measuring about 8 × 6 cm. The patient went through menopause 20 years ago and had 7 full-term deliveries, with the last delivery having occurred 30 years back. USG examination showed a multiseptate cystic lesion with a central nodule. M.R.I. report showed a large, thin-walled solid cystic lesion measuring 8.3 × 7.8 × 11.3 cm in the right adnexa, likely arising from the right ovary. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was done, and right-sided ovarian tissue was sent for frozen section to rule out malignancy. On frozen section, the diagnosis of benign epithelial neoplasm was made. On gross examination, a single cystic mass measuring 13 × 10 × 6.5 cm was identified. On cutting, a multilocular cyst was identified, and clear fluid came out. A solid cystic area was also appreciated on the cut surface. The left ovary measured 1.8 × 1.5 × 0.9 cm. The capsule was intact. On histopathology examination, a diagnosis of Mucinous cystadenoma with benign Brenner tumor was made.



Figure 1: Cut surface of the right ovary showing a cyst with a solid area.

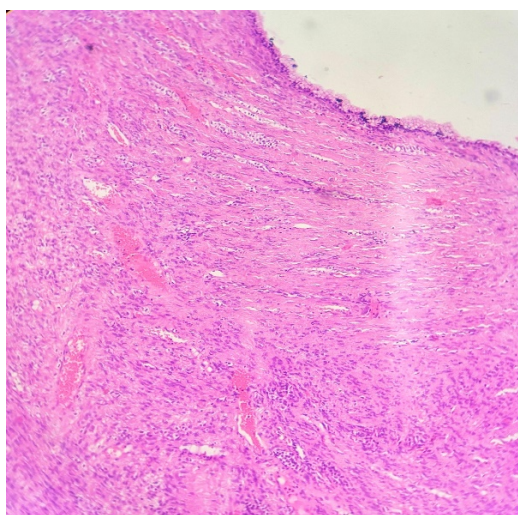


Figure 2: Section showing a cyst lined by mucus epithelium (H&E stain, ×100).

Discussion

The coexistence of ovarian mucinous tumors with Brenner tumors is uncommon [3]. In such mixed epithelial ovarian tumors, the mucinous type consisted of the largest part of the tumor, and Brenner tumors are frequently identified incidentally. In our case also, the larger part was mucinous cystadenoma and the smaller part was Brenner tumor. The presence of minor foci of various epithelial tumors can be ignored if it involves (<10%) of the total volume [3]. The typical age group for this combination is postmenopausal, with a mean age of 60 years [1, 2]. This finding is similar to our case. In the study of Maghbool M et al., the patients were postmenopausal women with progressive abdominopelvic discomfort. The disease course was less than 6 months in all cases. All the ovarian masses were unilateral, and five of them were a huge mass (more

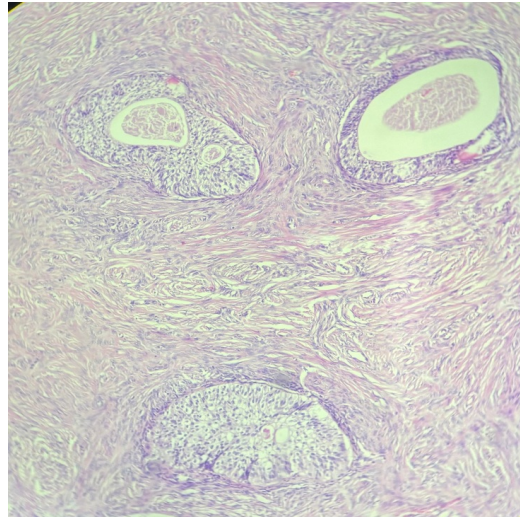


Figure 3: Section showing transitional cell islands separated by fibrous stroma (H&E stain, ×100).

than 20 cm), and only in one case, the mass was less than 10 cm. All the patients underwent TAH-BSO for treatment because of menopausal status and the possibility of malignancy [2]; all these findings were found in our case. Nonspecific symptoms predispose to a late presentation and affect the prognostic outcomes secondary to the associated complications. In most of the reported cases, the course of the disease corresponds to less than 6 months. Occasionally, patients may present with abdominal pain accompanied by vaginal bleeding [4]. In our patient, the main complaint is a right-side abdominal mass for 6 months. The overall size of such mixed ovarian tumors can be large, and reported cases indicate that the majority of them reach >20 centimeters in length. In our case, the size of the tumor was 13 × 10 × 6.6 cm, that is around 10-week pregnancy size. Imaging studying shows a mucinous component frequently presents as a complex cystic multiseptated mass which commonly tends to be larger than simple serous neoplasms [3]. In our case, USG and MRI findings showed a multiseptate cystic lesion with a central nodule in the right adnexa, which were similar with the study conducted by Jaafar Zahlout et al. [1].

Conclusion

The coexistence of mixed benign Brenner and mucinous tumors should be considered if the imaging studies show multilocular or unilocular cystic components with homogeneously hypointense solid components, raising the suspicion of a mixed tumor. Mixed epithelial tumors are rare and pose a diagnostic dilemma. A thorough evaluation of multiple histopathological sections should be done to rule out the presence of a dual neoplasm.

Acknowledgements None.

Funding None.

Conflicts of Interest None declared.

References

1. Zahlout J, Shmayyes NA, Zahlout B, Kassab Y, Alshehabi Z. Coexistence of a huge Brenner's tumour and mucinous cystadenoma in a 62-year-old female: a case report from Syria. *Ann Med Surg (Lond)*. 2023;85(4):1852-1856.
2. Maghbool M, Samizadeh B. Mixed mucinous cystadenoma with benign Brenner tumor in a huge ovarian mass, a case report and review of literature. *Int J Surg Case Rep*. 2022 Mar;92:106859.
3. Frezgi O, Tesfamichael T, Farah KH, Gebremariam H, Wahaballa YD, Tesfai B. Benign Brenner Tumor Mixed with Mucinous Cystadenoma of the Left Ovary: Case Report and Literature Review. *Int J Womens Health*. 2024;16:1671-1675.
4. Sonia H, Bhavya HU, Doppa GJ. Bilateral malignant ovarian tumor: a rare combination of mixed epithelial tumor - serous adenocarcinoma with Brenner's and pure Brenner's tumor. *The New Indian Journal of OBGYN*. 2023;9(2):390-93.
5. Sunanda N, Sudha R, Akhila MV. "Giant Mixed Epithelial Ovarian Tumour: A Case Report". *Journal of Evolution of Medical and Dental Sciences*. 2014;3(51):12043-47.