Case Report

Pathology Section

Malignant Mixed Epithelial Tumour Ovary-Papillary Serous Adenocarcinoma and Malignant Brenner's Tumour: An Exceedingly Rare Neoplasm

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ABSTRACT

Mixed ovarian epithelial carcinoma with an unusual histological pattern can be very difficult to diagnose and a thorough sampling of the specimen is needed to rule out the presence of a dual neoplasm. This case reports a very unusual case of mixed epithelial tumour, moderately differentiated serous papillary adenocarcinoma and malignant Brenner's tumour, in a 65 year old female. She presented with a three month history of abdominal pain. Ultrasound of the abdomen revealed an ovarian mass, for which pan-hysterectomy was performed. Extensive sampling of the tissue revealed a dual neoplasm, serous papillary adenocarcinoma (80%) and malignant Brenner's tumour (20%), with multiple deposits of the former (dominant tumour) on the uterus, the contralateral ovary and on both the fallopian tubes.

Key Words: Pathology, Carcinoma, Brenner tumour

INTRODUCTION

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 [1,2]. In some cases however, two or more subtypes reside within the same tumour. These are known as mixed surface epithelial stromal tumours .The WHO has classified mixed tumours as those in which the minor component is easily recognizable and they account for at least 10% of the entire tumours on microscopic examination [1].

Mixed epithelial tumours of the ovary comprises less than 4% of all the ovarian epithelial stromal neoplasms; malignant, mixed epithelial tumours are still rarer [1]. The frequent combinations which are seen are of the serous and endometrioid, the serous and transitional cell carcinoma and the endometrioid and clear all carcinoma types [3,4]. However, to the best of our knowledge, not a single case of mixed serous adenocarcinoma and malignant Brenner's tumour has been reported till date. Mixed epithelial tumours always pose a diagnostic dilemma. 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. This case emphasised the varied histopathological morphology of an ovarian neoplasm.

CASE REPORT

A 65 year old female presented with abdominal pain of three months duration. Her ultrasound examination revealed a mass in the right ovary. Her serum CA125 level was very high (676IU/ml), which favoured ovarian malignancy and hence, a pan-hysterectomy was performed.

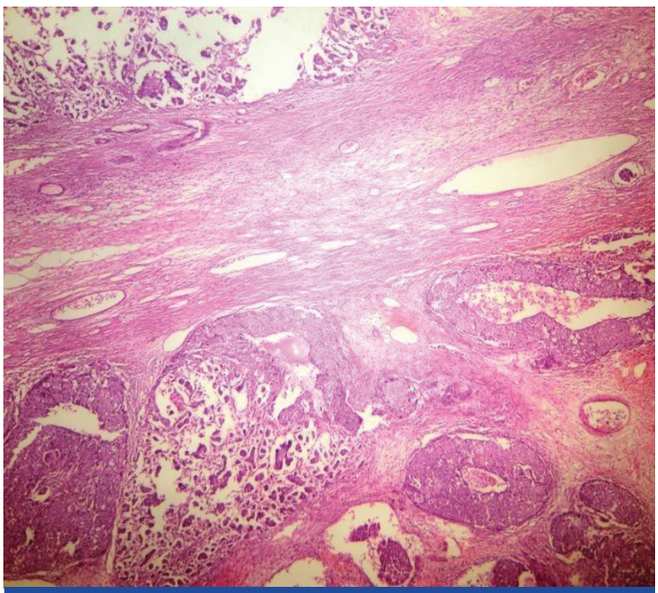
The gross examination of her hysterectomy specimen revealed a large right ovarian mass which measured 7.5cm x 6cm x3.5 cm. The cut surface was partly solid and partly cystic, with areas of haemorrhage and necrosis and the capsule was also breached. The uterus with the cervix measured 7cm x 4cm x 2 cm, with multiple small nodular deposits being noted on its outer surface. The left ovary measured 3.5cm x 2cm x 1 cm and its surface also showed deposits. The bilateral fallopian tubes showed deposits on their surface. Histopathological examination of the mass showed predominantly papillary serous adenocarcinoma and a single section showed a malignant Brenner's tumour [Table/Fig 1]. Areas of necrosis were also noted. Multiple metastatic deposits on the uterus, the contralateral ovary and on both the fallopian tubes showed only the morphology of serous papillary adenocarcinoma, thus indicating the dominant and aggressive nature of this neoplasm. On the basis of these histomorphological features, a diagnosis of mixed epithelial tumour, serous papillary adenocarcinoma (80%) and malignant Brenner's tumour (20%), with multiple metastatic deposits, was made.

DISCUSSION

Surface epithelial stromal tumours, the most common neoplasms of the ovary, encompass five distinct subtypes, including serous, mucinous, endometrioid, transitional and the clear cell types and these mostly occur in the pure form. In some cases however, two or more subtypes reside within the same tumour. These are known as mixed surface epithelial stromal tumours . The WHO has classified mixed tumours as those in which the minor component is easily recognizable and these account for at least 10% of all the tumour on microscopic examination [1].

The origin and the pathogenesis of epithelial ovarian cancers are poorly understood. Previously, it was thought that most of the ovarian carcinomas were derived from the surface epithelium, with metaplastic changes in them, leading to the development of different cell types. However, a recent study by Kurman et al has emphasised that most of the ovarian cancers develop denovo. They divided ovarian cancers into two subtypes. Type I included low grade endometrioid, clear cell, mucinous and transitional carcinomas . The type II tumours were highly aggressive and they evolved rapidly. These included high grade serous carcinomas, undifferentiated carcinomas and MMMT [2].

Most of the diagnosed cases are a combination of the serous and endometrioid, the serous and transitional cell carcinoma and



[Table/Fig-1]: Mixed ovarian neoplasm showing serous papillary adenocarcinoma (top) and malignant Brenner's tumor (down) (10 X)

the endometrioid and clear cell carcinoma types [3, 4 ,5, 6]. The dominant cell type generally dictates the behaviour [7], as in our case all the metastatic deposits were purely of papillary serous adenocarcinoma, thus indicating that malignant Brenner's tumour was less aggressive than serous adenocarcinoma.

Malignant Brenner's tumour is a rare form of invasive epithelial ovarian cancer and it is extremely uncommon in women who are > 65 years of age [8]. All cases have been reported in the pure form only and there are no reports of it occurring as a mixed epithelial tumour.

Transitional cell carcinomas are known to be associated with other epithelial carcinomas [9]. Cases of mixed, benign Brenner's tumour with serous carcinoma, strauma ovarii, mucinous carcinoma and teratoma have been reported [10, 11]. However, even after an extensive Medline search, we could not find a similar case of mixed serous adenocarcinoma and malignant Brenner's tumour which was reported till date.

In summary, mixed epithelial tumours always pose a diagnostic dilemma. Multiple sections of an ovarian neoplasm is strongly recommended to rule out a mixed carcinoma, as in our case, only one of the multiple sections which were studied, showed a malignant Brenner's tumour. Adding more sections from the tumour showed a definite, malignant Brenner's tumour.

This case emphasized the varied histopathological morphology of an ovarian neoplasm.

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