

## Bilateral Malignant Brenner Tumour

Nasser D Choudhary, S. Manzoor Kadri\*, Ruby Reshi, S. Besina, Mansoor A. Laharwal, Reyaz Tasleem, Qurrat A. Chowdhary\*\*

### Abstract

Bilateral malignant Brenner tumour of ovary is extremely rare. A case of malignant Brenner tumour involving both the ovaries with metastasis to mesentery in a 48 year female is presented. Grossly ovarian masses were firm with soft areas, encapsulated and having bosselated external surfaces. Cut sections showed yellowish white surface with peripheral cysts (in both tumours). Microscopy revealed transitional cell carcinoma with squamoid differentiation at places. Metastatic deposits were found in the mesentery. Endometrium showed cystic glandular hyperplasia.

### Key words

Brenner tumour, Malignant, Transitional cell carcinoma

### Introduction

Malignant Brenner tumour is a very rare malignancy and closely resembles transitional cell carcinoma of urinary bladder with squamous and undifferentiated variants (1). Transitional cell carcinoma, however, may also occur as primary tumour of ovary and only presence or absence of areas with benign or borderline Brenner tumour differentiates the two (2). Benign Brenner tumour forms around 2 percent of ovarian tumours and its malignant variant is even rarer (3).

### Case history

A 48-year old female from a rural area of Kashmir (India), para 4 presented with menorrhagia for last few years along with progressive anemia and generalized weakness. Vaginal examination revealed a bulky uterus with bilateral solid ovarian masses. USG revealed bilateral ovarian masses, 10 cms on the right and 6 cms on the left side with ascites.

### Operative findings

The uterus was of normal size but showed bilateral huge ovarian masses which were soft and variegated in appearance. Mesentery showed solid nodules spreading deep into the rectum.

### Gross Specimen included

A-Uterus with cervix, bilateral masses and tubes (Fig. 1)

B-Mesenteric fat with nodules in it.

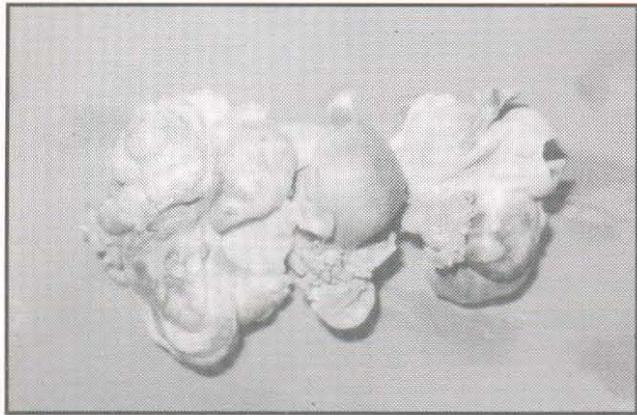
C-Ascitic fluid for cytology

A-Uterus with cervix was 10x6.5x5 cms. C/S showed a patent endocervical canal with increased thickness of endomyometrium (4cms). Endometrium was soft and friable. Ovarian masses were bosselated, soft to firm and measured 11x9x5 cms and 9x5.5x3.5 cms respectively. C/S showed yellowish white, homogenous, smooth surfaces with a peripheral cyst on either side (Fig. 2).

From the Department of Pathology, Microbiology\*\*, Govt. Medical College Srinagar, (J&K).

Correspondence to : Dr. Nasser D. Chowdhary, P.O. Box 776, GPO Srinagar Kashmir (J&K) India.

B-Fatty tissue measured 15x5 cms with solid nodules  
 C-Ascitic fluid was immediately processed for cytological examination.



**Fig 1. Gross Specimen showing tumour in both ovaries with uterus in the middle.**



**Fig 2. Showing cut surface of tumour with a peripheral cyst.**

**Microscopy**

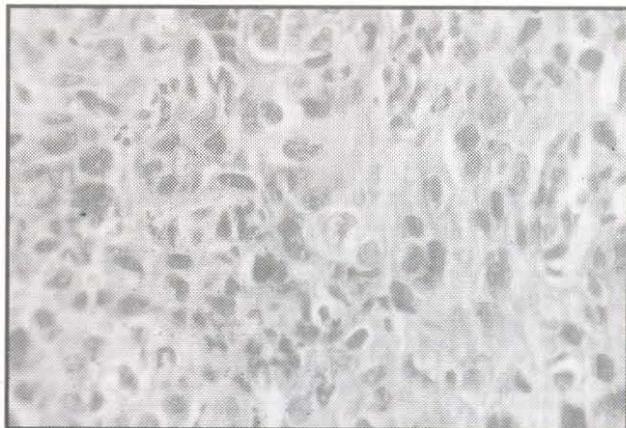
Examination of smears from the ascitic fluid showed deposits of malignant epithelial cells. The cells were in nests and were difficult to categorize. Multiple sections studied from the uterus showed cystic hyperplasia of endometrium. Cervix showed non specific chronic cervicitis. Sections from both ovarian masses showed similar histological picture of malignant Brenner tumour. The tumour contained predominately malignant transitional cells.

The malignant cells were arranged in nests and sheets, infiltrating and replacing the fibrous stroma (Fig. 3). The tumour cells displayed moderate degree of anaplasia with high mitotic activity and necrosis (Fig 4). Squamoid cells and pseudo-glandular pattern were also seen at places (Fig 5). The cysts showed glandular pattern and contained necrotic tumour cells. Benign Brenner tumour components were also seen in the sections. The peripheral cysts had a transitional cell lining.

b. Mesenteric fat contained metastatic deposits of malignant cells, having similar morphology as that of the primary tumour.



**Fig 3. Showing nests of transitional cell carcinoma H & E X 200.**



**Fig 4. Showing nuclear anaplasia with mitosis H & E X 400.**

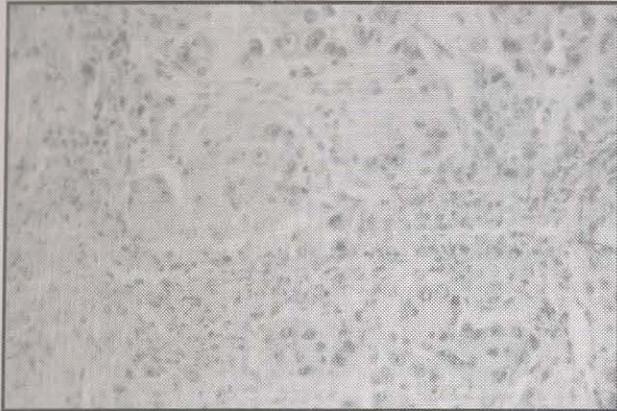


Fig 5. Showing nests of squamoid cells H&E X 200.

### Discussion

Brenner tumour of ovary is a relatively uncommon ovarian tumour and constitutes 1.4 to 2.5 percent of all ovarian neoplasms. Most of the Brenner tumours are benign. Only 2-5 percent are malignant. The malignant component of tumour consists of heterogenous solid transitional cell carcinomatous proliferation almost to the exclusion of intervening stroma. Squamoid areas or an attempt towards glandular differentiation are commonly encountered.

First case of Malignant Brenner tumour was described in 1945 by Von Nundblers(6). The criteria proposed by Hull and Cambel in 1973(7) for the diagnosis of malignant Brenner tumour are as follows:

- Frankly malignant histologic features must be present.
- There must be intimate association between malignant element and a benign Brenner tumour.
- Mucinous cyst adenoma should preferably be absent or must be well separated from both benign and malignant Brenner tumour.

- Stromal invasion by epithelial elements of malignant Brenner tumour must be demonstrated.

Present case showed all features of malignancy. There was moderate degree of anaplasia with high mitotic activity in the tumour cells, necrosis and infiltration of tumour into the stroma as well as capsule and tumour deposits in the mesenteric fat. Benign looking foci of Brenner tumour were also seen. At places tumour looked like squamous cell carcinoma. Tumour markers like CA 125, CA 72-4, SCC have been employed for the diagnosis of these tumours(8). We did not have the facility of these markers available in the department and as such could not apply them.

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