# BRENNER TUMOUR

## (Report of 5 Cases)

by

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## SUMMARY

**This article deals with 5 cases of Brenner tumour including one case of Brenner tumour associated with mucinous cystadenoma and adenocarcinoma of endometrium with widspread metastasis. Review of literature is discussed.**

*Introduction*

The tumour known by the exponym "Brenner" is relatively uncommon. Brenner in 1907 called this tumour as "Das Oophoroma folliculare" thinking that the tumour arises from the graffian follicle. Meyer (1932) called this tumour as "als Typus Brenner" for lack of histogenetically defining term. However, the first case of Brenner tumour was reported by Rasinski in 1896 and atleast 12 cases of Brenner tumors were reported before the article of Brenner in 1907.

This tumour previously was thought to be arising from congenital rests. In WHO classification of ovarian tumours this tumour is included under the epithelial tumours.

This paper aims to present a clinicopathological study of 5 cases of Brenner tumours, and review of literature.

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*Material and Methods*

During the period of 11½ years from January 1972 to June 1983, a total 495 Ovarian tumors were reported in the department of pathology, Government Medical College, Nagpur. Out of these cases, 4 were of Brenner tumors, and 1 case of Brenner associated with mucinous cystadenoma in the same tumour along with adenocarcinoma of endometrium. A brief report of 5 cases of Brenner tumour were as follows:

### CASE REPORT

**Case 1**

Female 33 years old admitted for pain and lump in lower abdomen. On examination, firm mass was felt in right side of the pelvis. At laparotomy right ovary was replaced by a tumor

of 10 cm x 10 cm x 5 cm size. It was solid lobular, greyish white, firm to hard in consistency.

Microscopy—Benign Brenner tumour.

**Case 2**

Female 50 years old admitted for a lump in abdomen and post menopausal bleeding. On examination a mass was felt through right fornix. At laparotomy a huge solid, lobular, firm to hard tumor replacing right ovary was removed. The tumor was 30 cm x 25 cm x 20 cm x in size.

Microscopy—Benign Brenner tumour.

**Case 3**

Female aged 60 years old admitted for lump in lower abdomen. On examination, a mass was felt through right fornix. On laparotomy a large tumour replacing right ovary was observed. It was solid lobulated firm to hard greyish white in colour. It was 15 cm x 10 cm x 10 cm in size.

Microscopy—Benign Brenner tumour.

**Case 4**

Female aged 65 years old was admitted for lump and pain in abdomen. On examination. a mass was felt through left fornix. On laparotomy a tumour was observed replacing left ovary. It was solid lobulated firm to hard greyish white in colour. It was 15 cm x 10 cm x 8 cm in size.

Microscopy—Benign Brenner tumour.

**Case 5**

Female aged 50 years old was admitted for heaviness and pain in abdomen. On speculum examination a bluish nodule in anterior vaginal wall was observed. Cervix was normal. Uterus was enlarged upto 10 weeks' size with irregular masses in uterus continuous with abdominal mass. Rectal examination showed nodules in pouch of Douglas. With these finding endometrial curettage was done which showed features of anaplastic carcinoma on microscopy.

Laparotomy was done after 15 days which showed ascitics, left ovary, peritoneum and liver were studed with multiple secondary nodules. Right ovary showed a tumor mass 12 cm x 12 cm x 7 cm in size with small multiples nodules on the capsule of the tumor. Uterus was 12 weeks' size. Right Ovarian tumor was partially solid, and partially multicystic.

Microscopy—Right ovarian tumour—Solid area—Benign Brenner tumor. Multicystic area —Mucinous cyst-adenoma. Nodules over peritoneum liver, left ovary and Right Ovarian tumour—Infiltration of anaplastic carcinoma. The completet diagnosis of this case was—Brenner with mucinous cystadenoma right ovary with Anaplastic carcinoma of endometrium with secondaries in peritoneum.

*Discussion*

Brenner tumour is relatively an uncommon tumour. The largest reported series were of Woodruff and Acosta (1962) 37 cases, Silverberg (1971) 60 cases and Waxman (1979) 51 cases.

In Indian literature, mostly this tumour is reported as part of ovarian tumour series (Bazaz Malik, 1979; Mathur *et al*, 1982). Malignant Brenner tumour was reported by Randhawa and Lata (1980) in Indian literature.

The incidence of Brenner tumour in this series is 1.01% which corresponds with the findings of most of the authors. The Brenner tumour is generally seen in post-menopausal patients. The average age varies in various series. It was 56.2 years in Bazaz Malik (1979) series. In the present series, the average age was 51.6 years.

The size of the tumour varies from microscopic size in case of incidental tumors to a large tumour. In present series, the largest tumour was of 2.4 kgs., in weight.

Brenner tumors are known to proliferate. Tyagi *et al* (1979) reported first case of proliferating Brenner tumour in Indian literature.

Extraovarian Brenner tumours are extremely rare. They are reported in broad

ligaments, paratestes and uterus (Kerpe *et al*, 1952).

Brenner tumor is regarded as inert tumour but there are case reports showing estrogenic effects of this tumour as in our fifth case. Woodruff and Acosta (1962) reported 40% of cases with post-menopausal bleeding. The 2nd case in this series presented with post-menopausal bleeding. On the other hand, Mathur *et al* (1982) reported Brenner tumour associated with testosterone synthesis.

*Histogenesis*: Many views has been expressed about the origin of this tumour.

(1) *Follicular granulosa cell*: This theory was originally suggested by Brenner (1907) as the epithelial nests resembles graffian follicles and opined that this tumour arises from pflugers tubules that did not contain primordial ova. This theory was supported by Teoh (1953). Teoh (1953) by using histochemical technique found glycogen in Brenner tumor and germinal follicular epithelium but not in Walthard nests cell.

(2) *Ovarian mesenchyme*: As the transition between the epithelial and stromal element can be seen occasionally in this tumour (Woodruff and Acousta, 1962).

(3) *Teratomatous origin*: As the tumour was frequently associated with benign cystic teratoma or with struma ovarii (Klein *et al*, 1968).

(4) *Rate Ovarii*: This theory was presed just because of the continuity between epithelium of Brenner tumour C a rete Ovarii and supported by Storh (1956).

(5) *Walthard rest*: This theory was suggested due to morphological resemblance between Walthard rest and epithelial cell nests of Brenner. Meyer (1932) pointed out its association with mucin secreting epithelium and its lack of endocrine functions and, therefore, suggested probable origin from Walthard nests.

(6) *Ovarian surface epithelium (Mesothelium)*: The tumor is generally associated with mucinous or serous cystadenoma (Silverg, 1971).

(7) *Mullerian system*: Kerpe *et al*, 1952 suggested mullerian histogenesis as he observed exactly the similar type of tumor in endometrium as ovarian Brenner.

(8) *Uroepithelial metaplasia*: This theory is largely accepted as there is marked ultra structural resemblance between uroepithelial cells and cells of epithelial islands of Brenner tumour (Waxman *et al*, 1979. The mucin secreting cells in Brenner are appeared to be uroepithelial cells that have adapted a secretary function and does not resemble with endocervical or enteric cells.

Figure: Showing Brenner tumour. H and E x 400.

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*See Fig. on Art Paper V*