

GRANULOSA THECA CELL TUMOUR OF OVARY (A CLINICO  
PATHOLOGICAL STUDY OF 9 CASES WITH BRIEF REVIEW  
OF LITERATURE)

by

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Granulosa theca cell tumour is not an uncommon neoplasm of ovary. According to Hughesdon (1958) the first unequivocal granulosa cell tumour was described by Von Werdt (1914). Mayer (1931) postulated that these tumours originated in the vestiges of embryonal "granulosa ballen", which remained dormant for years to produce the tumour in later life, following some unknown stimulation.

Amongst the sex cord stromal tumours of ovary the granulosa theca cell tumour is most frequently associated with endocrine anomalies. The reported incidence of granulosa theca cell tumour varies from 1.35 to 5.5 per cent of all the ovarian neoplasms. A large series of granulosa theca cell tumours have been reported in India by Maheshwari *et al* (1981) and Ramchandran *et al* (1972).

*Material and Methods*

Nine cases of granulosa theca cell

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tumours were examined during last 10 years (1971-1980) at Department of Pathology, Dr. Sampurnanand Medical College, Jodhpur. These cases have been reviewed and classified as per Maheshwari *et al* (1981). The available data were analysed in regard to age, clinical presentations and histological features.

*Observations*

The total number of ovarian tumours studied during last 10 years were 290. Out of these, 9 were diagnosed as granulosa theca cell tumours, thus constituting 3.1% of total ovarian neoplasms.

The age incidence has been shown in Table I.

TABLE I  
*Age Incidence*

| Age Range   | No. of cases |
|-------------|--------------|
| 20-29 Years | 4            |
| 30-39 Years | 2            |
| 40-49 Years | 2            |
| 50-59 Years | 1            |

The maximum number of cases were in the child bearing age. Two cases were detected in post menopausal age.

The various symptoms and signs observed in granulosa theca cell tumours are shown in Table II.

TABLE II  
*Symptoms and Signs*

| Symptoms and Sign        | No. of cases |
|--------------------------|--------------|
| Lump in abdomen          | 7            |
| Pain in abdomen          | 3            |
| Amenorrhoea              | 1            |
| Irregular bleeding       | 3            |
| Menorrhagia              | 2            |
| Ascitis                  | 1            |
| Post menopausal bleeding | 2            |

The commonest complaint was lump in abdomen, followed by pain in abdomen. One case of granulosa theca cell tumour was associated with pregnancy.

The histological typing and microscopic patterns have been shown in Table III.

TABLE III  
*Histological Typing*

| Histological Typing   | No. of cases | Microscopic Pattern | No. of cases |
|-----------------------|--------------|---------------------|--------------|
| Predominant Granulosa | 6            | Folliculoid type    | 3            |
| Predominant Theca     | 1            | Trabecular type     | 2            |
| Mixed type            | 2            | Sarcomatoid type    | -            |
|                       |              | Pseudo Adenomatous  | 1            |
|                       |              | Mixed type          | 1            |

TABLE IV  
*Showing Incidence of GTCT by Indian Workers*

| Authors                  | Year    | Total No. of ovarian tumours | No. of Granulosa theca cell tumours | Percentage |
|--------------------------|---------|------------------------------|-------------------------------------|------------|
| Chitkara and Sharma      | 1957-58 | 132                          | 1                                   | 0.75%      |
| Agarwal and Saxena       | 1962    | 74                           | 1                                   | 1.3%       |
| Tyagi <i>et al</i>       | 1967    | 120                          | 4                                   | 3.33%      |
| Ramchandran <i>et al</i> | 1972    | 903                          | 31                                  | 3.43%      |
| Maheshwari <i>et al</i>  | 1980    | 905                          | 50                                  | 5.52%      |
| Present Series           | 1981    | 290                          | 9                                   | 3.10%      |

The most common histological type was predominant granulosa type. Similarly, the folliculoid pattern was present in majority of the cases.

Grossly, tumours varied from 2 x 1 x 1 to 26 x 22 x 18 cms. in dimensions. Out of 9 cases, large granulosa theca cell tumour of more than 25 centimeters diameter were seen in 2 cases, at 30 years of age. The consistency was solid in 2 cases and solid to cystic in 7 cases.

*Comments*

The incidence of granulosa theca cell tumour varied from 1.35 to 5.5% of total ovarian tumours.

In the present study, the incidence of granulosa theca cell tumour is 3.1%. These findings are in corroboration with Tyagi *et al* (1967) and Ramchandran *et al* (1972) (Table IV). On the other hand,

Chitkara and Sharma (1957-58) and Agarwal and Saxena *et al* (1962) found its incidence as 0.75 and 1.35 per cent respectively. However, their observations were based on small number of ovarian tumour.

All the cases observed in present study were in reproductive period except for 2 patients of post menopausal age group. These findings are in close agreement with Novak *et al* (1971) and Maheshwari *et al* (1981). Anikwue *et al* (1978) observed 70% of their cases in the post menopausal period. The common symptoms in these cases were lump, pain abdomen and menstrual disturbances. Grossly these tumours vary in size from few mm. to 40 cms. (Novak *et al* 1974). In our series, the size of tumour ranged from 2 to 26 cms. However, the tumour size was more than 10 cms. in 7 cases (77.7%). These findings are in close corroboration with Maheshwari *et al* (1981). The cut surface presented solid appearance of tumour with cystic changes in majority of cases. The other authors have also described similar appearances (Tyagi *et al*, 1967 and Anikwue *et al*, 1978).

Histological picture was predominantly of granulosa cell type, out of which folli-

culoid pattern was the commonest. Similar findings were observed by Anikwue *et al* (1978) and stage and Grafton (1977). Only 1 case showed the features of frank malignancy.

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