# CLINICO-PATHOLOGICAL STUDY OF DYSGERMINOMA

by

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Dysgerminoma is an uncommon germ cell tumour. Since Meyer's original description of ovarian dysgerminoma in 1931, diagrament as to the degree of malignancy of the tumour has caused uncertainty with regard to the proper method of treatment. The reported mortality rate of patients with ovarian dysgerminoma varies from 27-75 per cent. Recent reports make it clear that the tumour possesses considerable malignant potential.

The paper presents the study of 15 cases of dysgerminoma treated by the authors since 1948.

*Clinical findings*: The age distribution of the patient is shown in graph I, and the parity status in graph II.

The most frequent presenting symptom was an abdominal mass (10 cases). Abdominal and/or pelvic pain was present in 5 cases.

Menstrual abnormalities occurred in 5 cases; 1 with primary amenorrhoea, 1 with oligomenorrhoea and hypomenorrhoea, and 3 with metrorrhagia. The rest 10 cases had normal regular menstrual cycles.

All the 5 cases who had chromosome study showed female chromosome set-up, although 2 showed abnormal somatic and genital development (Table I).

Nine cases were unilateral dysgerminoma, 3 were bilateral tumours and 3 were bilateral tumour with extension to surrounding structure.

Unilateral removal of tumour was done in 6 cases. During the follow-up period, 2 out of them had recurrence in the abdominal cavity. They had postoperative irradiation. One of the unilateral tumour had removal of both the ovaries and hysterectomy. Two had removal of both ovaries as there were somatic congenital

TABLE I

*Genetic Status and Sex Chromosome in 5 Cases of Dysgerminations*

| Sex chromosome analysis | Modified Turner syndrome | Chromosome position | Hypogenital condition with slight enlargement of clitoris |
|---|---|---|---|
| 5 | 1 | 5 | 1 |

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malformations. Out of 6 bilateral tumour 3 had bilateral adnexatomy with hysterectomy, 3 had partial removal of the tumour.

Ten cases were histologically pure dysgerminoma. Two had combined teratocarcinoma, 1 lymphangioma and two cystic teratomas. Fig. 1 shows an example of pure dysgerminoma. Fig. 2 shows dysgerminoma combined with cystic teratoma.

Near 45% of the cases are either dead or having recurrent tumour. The rest 8 patients who are alive, 2 had a follow-up of 10-14 years, the rest are having a follow-up of 6 months to 2 years.

Mortality was highest when dysgerminoma was associated with teratocarcinoma (Table II).

TABLE II

*Relationship of Histological Findings with Mortality and Recurrence*

| Histological findings | Mortality | Recurrence |
|---|---|---|
| Teratocarcinoma | 2 | Nil |
| Lymphagioma | Nil | 1 |
| Cystic teratoma | 1 | 1 |
| Pure dysgerminoma | 1 | 1 |

*Pathological observations*

*Gross Examination*: The tumours ranged in size from a foetal head to that occupy the whole abdominal cavity. The configuration of the tumours was lobulated or roughly spherical. The tumours were solid with cystic areas on the surface, a few had haemorrhagic cystic foci. Some of them were present with haemorrhagic surface. Visible haemorrhage necrosis was seen in some of the cases. The tumours varied in colour from gray to grayish-pink and from yellow to tan. Although the lesions were occasionally soft, more often they were firm or rubbery with smooth surface.

*Microscopic study*: The tumours characteristically infiltrated and replaced the ovary, although in a few instances small lesions had rather sharply delineated margins that tended to compress the adjacent ovarian tissue. The histologic pattern varied considerably from tumour to tumour and with different areas of the same lesion. The pure dysgerminoma cases showed histologically the large polyhedral cells with hyperchromatic nuclei and stroma infiltration with lymphocytes. In 2 cases areas of the tumour showed the pattern of lymphagioma and adenocarcinoma.

*Discussion*

The analysis of the data from this series of 15 patients with dysgerminoma brings to light several important findings that warrant comment Dysgerminoma proved to be a neoplasm with considerable malignant potential. Follow-up studies were made on all the 15 cases in the series, and 4 are known to have died; 1 postoperatively and 3 from recurrence of the disease. An additional 3 patients who are still living have returned with the recurrence of tumour, and these patients will sucumb to the disease sooner or later. Our experience, therefore, parallels that of Pedowitz and associates (1956) and Novak (1938) who reported recurrence rates of 50 per cent and 30 per cent respectively.

All the deaths occurred within a short period of operation. An attempt was made in this analysis to correlate the recurrence and mortality with dysgerminoma, and it has been noted that the patients who had recurrence or died within 18 months of diagnosis 3 of whom had already had metastasis at the time of operation and four of them had other malignant germ cell tumour in addition to dysgerminoma.

*Summary*

The clinical and pathological analysis of 15 cases of dysgerminoma treated in our Institution are reported.

This tumour was combined with other teratomatous type of growth in 5 cases, admixed with teratocarcinoma 2, lymphangioma 1, and cystic teratoma 2.

The age ranged from 18 to 40 years.

Intersex feature was present in 1 girl. Prognosis was worse when dysgerminoma was admixed mith other type of germ cell neoplasm. Individual therapeutic approach was adopted based on patients' age, desire to preserve ovarian function, clinical, operative findings and histological composition of the tumour.

*References*

1. Novak, E. and Gray, L. A.: Am. J. Obstet. Gynec. **35: 925, 1938.**
2. Pedowitz, P., Felmus, L. B. and Grayzel, D. M.: Am. J. Obstet. Gynec. **70: 1284, 1956.**

*See Figs. on Art Paper I*