DYSGERMINOMA IN CHILDREN

By

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Dysgerminoma is a rare highly malignant, though insiduous in growth, ovarian neoplasm. During the past three years (1970–72) there were 63 malig nant ovarian tumours registered in the Sudan Central Tumour Registry. There were only two cases of dysgerminoma which are presented below. They were both in children, (thirteen and seven years) and were both reported from Khartoum Hospital. During the same period, there were only 8 malignant ovarian tumours registered in children. These are shown in the following table:

Serial No	Section No	Age	site	Diagnosis
634	3489/71	9	Ovary	Lymphosarcoma
366	C/7383	11	Ovary	Granulosa cell
462	883	10	Ovary	Malignant Teratoma
436	C/B23	16	Ovary	Dysgerminoma
		7	Ovary	Dysgerminoma
457	2486/72	15	Cervix	Sarcoma Botyroides
25	101/72	10 months	Cervix	Sarcoma Botyroides
362	1880/72	12	Uterus	Anaplastic Sarcoma

CASE REPORT I.

The patient, Z.M.E., a single girl, 16 years old, a native of Saata, Kordofan, was referred from El Obeid Hospital to Khartoum Hospital and admitted on 1.5.1970. The following history was given in her referral notes.

14.5.1967.

Left ovarian cystectomy was performed on her in El Obeid Hospital. She was then thirteen years old. No histopathologic report was obtained. The patient was discharged in good condition.

August, 1969.

Patient reported again to El Obeid Hospital with a large abdominal mass and was very anaemic. She was then clinically diagnosed as malignant ovarian

tumour. She received a course of 10 injections of 100 mgm. of cyclophosphamide (Endoxan Asta) intravenously. Her anaemia was treated with Inferon injections. On this treatment the mass regressed and her general condition improved. Her father refused to transfer her to Khartoum Hospital for further treatment.

April, 1970.

She reported again to El Obeid Hospital where she was started on a further course of Endoxan and blood transfusion. Endoxan had to be discontinued after five injections for relative leukopenia (W.B.C.4.300). She was then referred to Khartoum Hospital.

1.5.1970.

She was admitted to Khartoum Hospital. She complained of general ill health and weakness associated with abdominal pain, epistaxis, loss of appetite and insomnia. She felt the abdominal mass getting heavier and causing discomfort. On examination she was a young girl of sixteen years who was very pale and weak. Her temperature was 100° F., pulse was 140/m and her blood pressure was 130/60. Breasts were smallish and inactive. There was no abnormality detected on the cardiovascular or respiratory systems.

Abdominal examination showed the midline incision scar of the previous operation. The abdomen was distended and there was a huge abdominal swelling of about the size of 28 weeks pregnancy. It was firm irregular in shape and surface and was tender and fixed. Ascitis could not be elicited.

Pelvic examination was refused.

The white cell count was 4.700/cmm., the haemoglobin concentration was 4.2/ml (30%). The blood urea level was 112mgm/100ml.

Six pints of blood were transfused before the patient was thought to be fit for laparotomy.

At the laparotomy through a subumbilical midline incision the mass was adherent to the abdominal wall. The tumour was greyish-white, nodular and very vascular and friable. It bled very easily on touch. There was free haemorrhagic fluid in the peritoneal cavity. Biopsy was taken from two parts of the tumour. Bleeding was troublesome but it was eventually controlled.

The postoperative period was stormy with hectic fever, epistaxis and haematemesis and abdominal distention. Eventually she improved and was referred for radiotherapy.

Histopathologic report

The wedge of ovarian tissue was approximately 3 x1x8 cm. Microscopically the picture showed distinctive histological features of dysgerminoma. Cells were with large pale staining cytoplasm. They were round, cuboidal and poly-

hedral with large round deeply staining nuclei with mitotic figures. The alveolar arranged groups of cells were separated by fibrous tissue and infiltrated by lymphocytes. (Fig. I, II and III)

Fig. 1: Showing groups of larger cuboidal or round-shaped cells with darkly stained nuclei. In some of the cells the cytoplasmic outlines can hardly be recognized. These groups are divided by fibrous septa in which there are small lymphocytes seen.

(Haematoxylin and eosin 100).

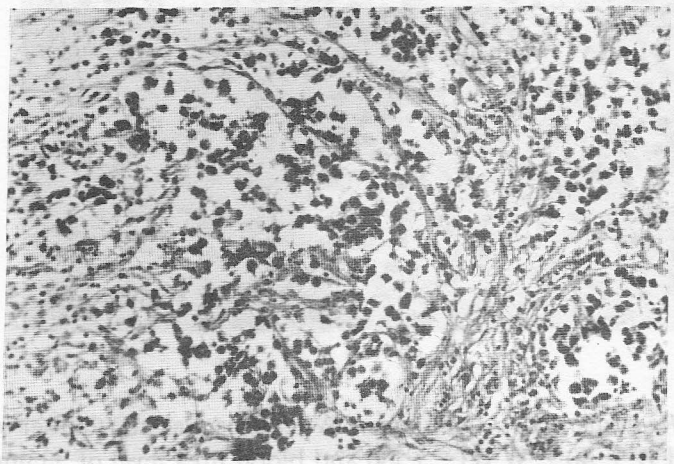


Fig. 2: High power-view showing the details of the tumour cells and lymphocytes in the fibrous septa.

(Haematoxylin and eosin: 360)

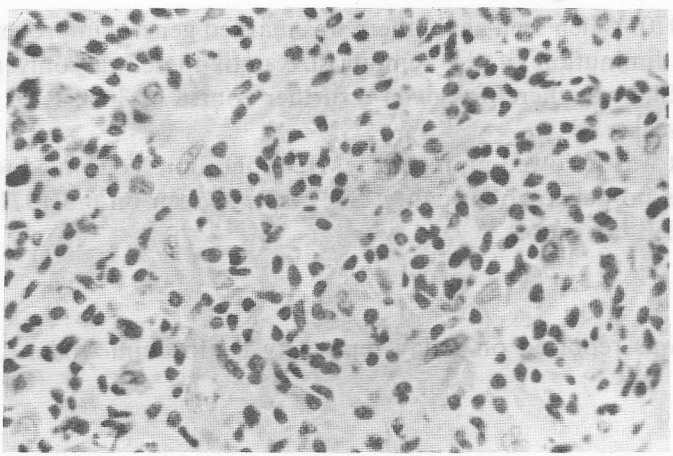
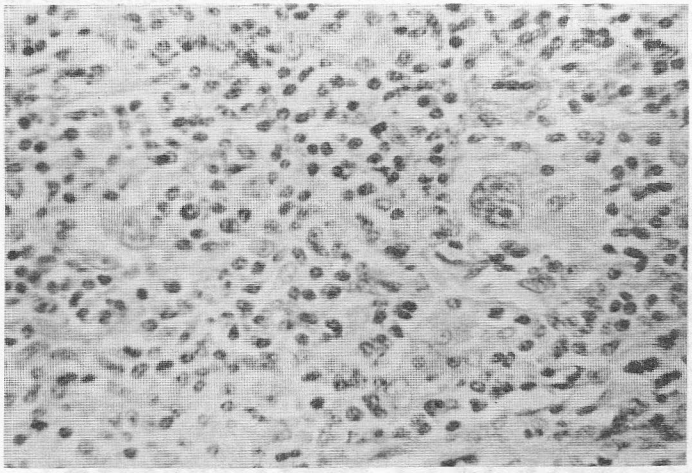


Fig. 3: Some of the tumour cells contain more pleomdrphic nuclei with prominent eosinophlic nuceoli.
(Haematoxylin and eosin 360.)....



3/6/1970. *Radiotherapeutic treatment.* When this was started her weight was 80 pounds, H.B.% 40% W.B.C. 5.500 and blood urea level of 335mgm/100ml.

During a period of three weeks she received a tumour dose of 3000 R to skin through anterior and posterior fields (2250 to each). There was regression of the tumour. Her weight increased to 95 lbs. and her general condition improved before discharge.

October, 1970. When seen again there was marked general improvement with considerable diminution of the tumour size until there was only a residual pelvic mass. She was therefore given a further course of 3000 R to the pelvis within four weeks.

The patient was followed up regularly. Her condition continued to improve and there was no pelvic abnormality. She was last seen on 6/5/1971 and ever since she failed to report.

CASE REPORT II

This case was reported on today seperately by Ibrahim Abdel Aziz in this conference.

DISCUSSION

Ovarian cystectomy was performed on the patient at the age of 13 years. Though the histological report of the first operation specimen could not be traced, it is reasonable to assume from subsequent developments that it was dysgerminoma of the ovary.

The two tumours cited occurred in children (7 and 13 years). Muller et al (1950) noted that 72% of dysgerminomas occurred before the age of 30 years. Their youngest patient was 2 years old. Thoeny et al (1961) reported that 28% occurred before the age of 20 years and Brody (1961) reported a 77% incidence before age 30.

There were two cases of dysgerminoma in sixty three malignant ovarian tumours; an incidence of 3.2% of the malignant tumours. Muller et al (1950) found an incidence of 4.7% of the malignant ovarian tumours and 1.1% of all ovarian tumours. Kawahara (1962) noted that less than 5% of all ovarian tumours in United States and Europe were accounted for by dysgerminoma, while this tumour accounted for 10% of solid ovarian tumours in Japan.

The tumour recurred more extensively within one year of the first operation. When she was reopened, three years later, there was lack of encapsulation, peritoneal and pelvic infiltration, haemorrhagic ascitis and metastesis. Wider and O'Leavy (1968) suggested that the above complications occurred with an age of less than 15 years and were poor prognostic signs. Pedowitz et al (1955) considered that the tumour was sufficiently malignant to warrant removal of both ovaries and uterus even in young girls. On the other hand Jackson (1960) and Malkasian and Symonds (1964) advocated conservative operation in young girls, but every cases was considered individually. However the latter authors observed a 52% recurrence rate and a 6% decrease in the 5 year survival rate.

Rigby (1961) suggested that, should secondary deposits develop radiotherapy was indicated as the tumour was usually sensitive. This case apparently responded well to radiotherapy.

An interesting feature of this case was the elevation of the blood urea level which decreased after treatment. Black and Hodge (1959) reported a case of dysgerminoma which presented with uraemic convulsions with a blood urea of 228 mgm. per cent which fell to normal after treatment. However, they did not give an explanation to the association between uraemia and dysgerminoma.

SUMMARY

A case of dysgerminoma in a young girl with recurrence and metastasis and apparently good response to radiotherapy was presented. The raised blood urea was noted.

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