ENDODERMAL SINUS TUMOUR (YOLK-SAC TUMOUR)

(A Clinicopathological study of two cases)

by

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Introduction

Endodermal sinus tumour (Yolk sac tumour) of the ovary is a rare germ cell tumour with predominently extraembryonic development. Teilum (1959) named this neoplasm as 'endodermal sinus tumour' on account of the similarity between the glomeruloid bodies (Schiller-Duval bodies) and endodermal sinuses in rodent placenta. Many endodermal sinus tumours occur in combination with other germ cell tumours as teratoma, dysgerminoma and choriocarcinoma. Alfafetoprotein has been detected in the patients with embryonic tumours of ovary (Finklestien *et al*, 1972).

With a view of its rarity, 2 cases of endodermal sinuses tumours are presented. These are studied histochemically and 1 case for the presence of alphafetoprotein in the serum. These 2 tumours are amongst the 250 ovarian tumours studied during the past 12 years (1967 to 1978), constituting an incidence of 0.8% of all ovarian tumours; and 2.8% of malignant ovarian tumours.

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Case 1

A patient (K. M.) 25 years old was admitted in the Medical College Hospital, Aurangabad on 27-8-1976 with complaints of a lump in the abdomen for 1 month, pain and distension of abdomen for 2 days.

Menstrual history was normal. She was married two years back and was nulliparous. General examination revealed pallor (++), cachexia. The abdomen was distended and rigid. A tumour mass was felt in the left lower abdomen. Rest of the systemic examination was normal. The vaginal examination revealed vulval oedema and fullness in fornices.

Laboratory investigation done were as follows:

Hb-6.9 gm.%; TLC-6400/cm., D.L.C.-P_{60}, L_{40}.

ESR 68 mm. Hg (Westergern method), Blood urea 19.7 mg.%.

Urine Sugar traces, albumin +, M.E.-NAD.

Blood group—AB„ Rh+ve.

On Laparotomy, a left ovarian tumour was detected with adhesions and the tumour was removed after separating adhesions.

PATHOLOGIC EXAMINATION

Gross: Tumour was 15 cm. x 10 cm. x 7 cm., weighing 300 gm partially capsulated. Cut surface was fleshy with areas of haemorrhage and necrosis. -mt

Histological Examination: In routine haematoxylin and eosin stained sections (Fig. 1) the tumour revealed vacuolated network containing microcysts lined by flattened cells. Perivascular formations were seen. Mitotic figures were observed. There were areas of necrosis and

haemorrhage. Diastase resistant Periodic acid schiff (P.A.S.), positive globules were seen in the alveolar spaces.

Case 2

Mrs. D. K., 30 years old, was admitted on 9-11-78 with complaints of a lump in the abdomen for 2 months. She had prolapse of uterus for 8 years. Menstrual cycles were regular (3 to 4 days per 30 days). The patient had 1 male and 2 female children. All were full term normal deliveries.

General examination revealed anemia.

On abdominal examination, firm, tender, mobile mass was palpated in lower abdomen. Rest of systemic examination was normal. On vaginal examination, a firm and tender mass could be palpated. There was associated 3rd degree prolapse uterus.

Laboratory Investigations: Hb-9 gm.%, Urine-NAD, Blood group-B Rh + ve.

On laparotomy, a large malignant ovarian tumour arising from the left ovary was detected which had adhesions with omentum, sigmoid colon and left broad ligament. Contralateral ovary was normol. The tumour was removed after separating adhesions.

PATHOLOGICAL EXAMINATION

The tumour was oval (15 cm x 9 cm x 6 cm), capsulated and soft to firm in consistency. The cut surface was greyish-white with areas of haemorrhage and necrosis. Tumour weighed 250 gm.

Histological Examination

Routine H & E sections (Fig. 2) revealed loose meshwork of tumour cells with labyrinthine formation. Schiller-Duval bodies were noted.

P.A.S. after diastase digestion revealed diastase resistant P.A.S. Positive globules in the microcysts fromed by tumour cells (Fig. 3). There were large areas of necrosis. The foreign body giant cell reaction was seen around the necrotic areas. The serum alphafetoprotein estimation were done by (1) Ouchterlony's double diffusion technique and (2) Counter current immunoelectrophoresis (CIEP). Both gave a line of precipitation with monospecific antiserum raised in rabbit (Fig. 4).

The serum alphafetoprotein level disappeared after 10th post operative day. The patient is advised to report at intervals of time for alphafetoprotein estimation to safeguard against the recurrence of the tumour.

Discussion

The endodermal sinus tumour (Yolk sac tumour) is a rare germ cell tumour occurring in both sexes, testicular tumours being more common than ovarian. Yolk sac tumours of extragonadal origin like mediastinum, broad ligament, pineal, vulva and vagina have been reported.

Clinically, the patients are usually children and adolesents. Reported cases in the literature have an age range of 1½ years to 38 years. The present cases were 25 years and 30 years of age giving a mean of 27.5 years.

The most common presenting symptom is abdominal mass. Sometimes there is acute pain in abdomen which is thought to be due to torsion or haemorrhage into the tumour. Occasionally tumour may rupture. Manifestations of endocrine disorder are rare and when observed, they are usually seen in combined tumour. Santesson and Marrubini (1957) reported a case with associated hirsutism. Their series also includes secondary amenorrhoea in 2 patients and menorrhagia in 1.

Detection of serum alphafetoprotein is one of the parameters of the diagnosis of endodermal sinus tumour. Serum alphafetoprotein estimation was first described by Masopust *et al* (1968). Postoperatively and in the follow up of patients has been found useful to monitor the recurrence. In our second case, the serum alphafetoprotein disappeared after 10th postoperative day.

The overall prognosis of the ovarian endodermal sinus tumours is very poor. Santesson and Marrubini (1957) described 17 patients with only 1 survivor. Huntington and Bullock (1970) reported 18

patients of yolk sac tumour with only 2 survivors. No currently available treatment appears to influence the eventual outcome. Huntington and Bullock (1970) and Beilby and Todd (1974) suggest that castration should be avoided and the treatment should be confined to the simple removal of the tumour.

Summary

Two cases of endodermal sinus tumours (Yolk-sac tumours) are presented. Serum alphafetoprotein estimation was done in one case which disappeared after 10th post operative day. Prognostic and therapeutic aspects are reviewed.

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See Figs. on Art Paper VIII