GRANULOSA CELL TUMOUR IN AN INFANT OF TEN MONTHS' AGE

by

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Introduction and Historical

Functional tumours of the ovary are known since 1825, when Gedike first reported a case after an autopsy finding. These tumours are quite uncommon, though not very rare. Novak states that they form 10% of all solid ovarian tumours. Ovarian tumours are rare in children and constitute 1% of all neoplasms in children under 16 years of age. Functional tumours in children are 30% of all ovarian neoplasms. Of all the functional neoplasms, 6% are found in girls below the age of 12 years. Granulosa cell tumours constitute 1.7% of all ovarian neoplasms.

CASE REPORT

S. B., a female infant, 10 months old, was brought to the hospital with complaints of swelling of the abdomen, enlargement of breasts since 3 months and bleeding per vaginam at 25-30 days interval for the last 3 months. The abdominal swelling started almost simultaneously with enlargement of the breasts. When the abdominal swelling increased, a sausage shaped reducible, umbilical hernia also developed. First episode of vaginal bleeding started almost immediately after the enlargement of breasts.

The baby was 80 cms tall, having an arm span of 76 cms. There was no cyanosis, or jaundice, no oedema over the lower limb or abdominal wall. Breasts showed bilateral enlargement (Fig. I). There was no lymphadenopathy. Abdomen was markedly enlarged and distended with evidence of free fluid in the peritoneal cavity. A large reducible umbilical hernia about 4" long was present.

Cardiovascular and respiratory systems were normal. It was difficult to palpate the abdomen due to ascites, but there was suggestion of a mobile lump being present in the abdomen on the right side. The size of the lump could not be determined exactly. Secondary sex characters were markedly developed (Fig. II). The clitoris and labia were well developed. There were no axillary hair and no hair on mons pubis, though labial hair were present. A rectal examination was made and a regular, firm, mobile mass of indefinite size was palpated high and anteriorly. Rectal mucosa was free. The exact size of the uterus could not be made out.

The following investigation were done: Blood:—Hb-12.0 gm%, ESR 31 mm fall in 1 hour. TLC-14,800/cmm. Diff. count-poly-25%, lympho-70%, mono-3%, eosino 2%. Urine-no abnormality detected. Serum bilirubin-0.12 mg%. Serum protein-6.0 gm%. Globulin 2.0 gm%. Albumin-4.0 gm%. A:G ratio-2:1. Ascitic fluid-Sp. Gr.-1014. Protein/252 gm%. Cells-3/HPF. (Epithelial cells). No malignant cells seen. No pus cells. Culture-negative. Urinary-17 ketosteroids-3 mgm/24 hours sample.

X-Ray—abdomen showed plenty of fluid in the peritoneal cavity. Skull-NAD. Chest-NAD. Wrists for bone age—bone age is about 3 years (Fig. III). A provisional diagnosis of functional ovarian tumour was made and laparotomy was done on 10 Dec. 1969.

OPERATION FINDINGS

The peritonal cavity had about 2000 ml. clear ascitic fluid. Left tube and ovary were normal. Right ovary had a solid, whitish-yellow mobile tumour 3" x 2", well encapsulated and not adherent (Fig. IV). The tube on the right side was adherent.

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The neoplasm along with the adherent tube was removed and umbilical hernia repaired. The postoperative period was uneventful. There was withdrawal bleeding within 18 hours of removal of tumour.

BIOPSY REPORT

Naked Eye Examination: Pale, yellowish coloured mass almost spherical in shape, about 5 cm in diameter. Prominent veins seen on the surface. Abdominal end of the tube is attached to the mass. Cut surface shows lobulation.

HISTOPATHOLOGICAL EXAMINATION

Section shows both epithelical and stromal elements, germinal layer showed hyperplasia of epithelial cells, evenly stained with round to oval nuclei and eosinophilic cytoplasm with ill defined margins. Similar epithelial cells are seen in varying proportion in the tumour mass, arranged in folliculoid pattern. Minor to major degree of collegenisation of thecal stroma is present.

The cells which are elongated with ovoid neclei resemble fibroblasts. Many cellular elements are also present, which cannot be easily distinguished as either type. Moderate degree of luteinisation of the cells is also seen occasionally.

Diagnosis. Granulosa-theca cell tumour of the ovary.

Discussion

The incidence of functional ovarian tumours has been variously estimated in children and found in approximately 3% of all ovarian tumours. These tumours are potentially malignant and form 0.6% of all maglignant ovarian tumours.

In most of the cases, the granulosa cell tumour has been found during child bearing period of life. The next commonest age group is postmenopausal, which constitute 42.5% of all patients having granulosa cell tumours. Incidence of granulosa cell tumour in pre-puberty years is very small, about 5-10%. The smallest child reported so far has been 14 weeks (Zemke & Herrel—1941). Present case was 10 months of age at the time of admission and having symptoms at the age of 7 months.

The child had developed precocious puberty with menarche. There were vulval and axillary hair. Her height was increased as compared to other children of the same age group (Fig. V). In all ovarian neoplasms the presence of ascites is always a grave sign. The ascitic fluid in a case of malignant ovarian tumour is haemorrhagic. In this case the amount of fluid removed was 2000 ml but the fluid was normal biochemically and cytologically. The ascites has not recurred after the operation so far (14 months). The 17-ketosteriods were estimated in the urine and were increased.

As expected, there was withdrawal bleeding after the removal of the tumour. She has not had menstrual bleeding since the operation.

Summary

1. A case of precocious puberty with granulosa cell tumour in a 10 months old female child has been described.

2. An effort has been made to review the available literature on the cases reported in the past.

3. The symptomatology has been discussed.

Acknowledgement

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See Figs. on Art Paper IV