OVARIAN TUMOURS IN CHILDREN

by

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Introduction

Ovarian neoplasms occurring in the pediatric age group are unique with regard to their rarity notoriously lethal when malignant and somewhat controversial in their therapeutic management (Breen and Waynes 1977). Ovarian cancers in pediatric patients differ in several ways from those found in adults. In children, however, the germ cell tumours, malignant teratoma, embryonal carcinoma, dysgerminoma and choriocarcinoma predominate, although these tumour types account for only about 6% of the ovarian cancer in adults (Smith and Waterlu 1975).

Ovarian tumours in children present difficult problems in diagnosis and management. Generally the history is given under stress by the parent and the examination does not always include an abdominal or a careful rectal examination performed under conditions of muscular relaxation. Too often in the young patients surgical procedure are unnecessarily radical. In other instances the malignant potential is unrecognised and inadequate or incomplete therapeatic measures are the result.

In view of the comparative rarity of the ovarian tumours in children and recognising the difficulties in attaining accurate diagnosis and proper management in these young patients, a study of 7 cases of ovarian tumours in children was undertaken.

Materials and Methods

Study comprises a total of 308 ovarian tumours including 7 cases (2.25%) of ovarian tumours in children under 15 years of age, during the period of eight years (1st January 1973 through 31st December 1980) in the department of Pathology Government Medical College and Hospital, Nagpur. Detailed history, operation findings and pathology in all cases were noted. Tumours were studied as per W.H.O. (Serov *et al* 1973) classification based on histogenesis.

Brief Case History

Seven cases of ovarian tumours between 7 to 14 years of age are reported. Abdominal pelvic mass and pain were the common complaints in all the cases. In addition, intermittent fever in 1 case was observed.

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TABLE I
Showing Incidence of Ovarian Tumours in Children by Different Workers

Worker	Total period	Total cases	Benign		Maximum	
			Germ Cell No. of cases	Non-Germ Cell No. of cases	Germ No. of cases	Non-Germ Cell No. of cases
Abell *et al* (1965)	41 Yrs4	36	16	—	15	4
Sawai *et al* (1973)	30 Yrs.	65	7	3	45	10
Adelmans *et al* (1975)	26 Yrs.	43	32	8	2	1
Smith *et al* (1975)	27 Yrs.	22	—	—	21	1
Jereb *et al* (1979)	4 Yrs. 3 Months	12	—	—	12	—
Present series	8 Yrs.	7	4	1	1	1

Clinically palpable lump occupying the whole of the abdomen and having bosselated surface in 1 case. The other 4 cases showed palpable lump on the left lower side of the abdomen. In remaining 2 cases, 1 showed palpable lump in both sides of the lower abdomen and in the other case palpable lump was occupying the right side of the lower abdomen.

Laparotomy showed a tumour of varying size arising from left ovary in 5 cases, bilateral involvement in 1 case and right sided involvement in another case.

Four cases were diagnosed as benign cystic teratoma. Tumour size, ranged from 10 to 15 c.m. in diameter with smooth external surface, cut section showed cyst containing hair. Cheesy material and solid part with bony structure. Histologically these were confirmed as benign cystic teratoma.

A case of endodermal sinus tumour, of 15 c.m. in diameter, well encapsulated, with partially smooth and partially nodular surface, pale yellowish friable with extensive necrosis and smooth glistening mucoid cystic areas was recorded. Histologically, characteristic features of endodermal sinus tumour were seen.

A case of mucinous cystadenocarcinoma was of the size of 20 c.m. diameter, well encapasulated with smooth nodular surface. Cut surface showed greyish-white with multiple loculi containing thick mucoid material with few areas of necrosis. Histologically confirmed as mucinous cystadenocarcinoma.

One serous cystadenoma was of 12 c.m. diameter in size, smooth, thin-walled with serous fluid in it. Cut section showed unilocular cyst with small papillary processes. Histologically diagnosed as serous cystadenoma.

Discussion

Incidence of ovarian tumours in children during 8 years is 2.25%. This shows relative uncommonness of these tumours as compared in adults.

According to Thompson *et al* (1967) these ovarian tumours in children account for 1% of all malignancies occurring in this age. Their infrequent appearance adds to the difficulty in assessing the diag-

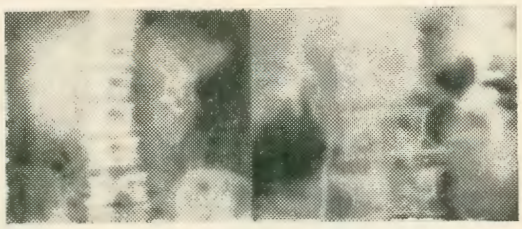

Fig. 1
Showing complete disappearance of persistent nephrogram changes which were observed pre-operatively.

Fig. 2
Comparative pre-operative and post-operative amount or residual urine.

Fig. 3
Comparing post-operative almost complete regression of pre-operative hydronephrotic and hydroureteric changes.

Granulosa Theca Cell Tumour of Ovary—Mehata et al. pp. 666-668

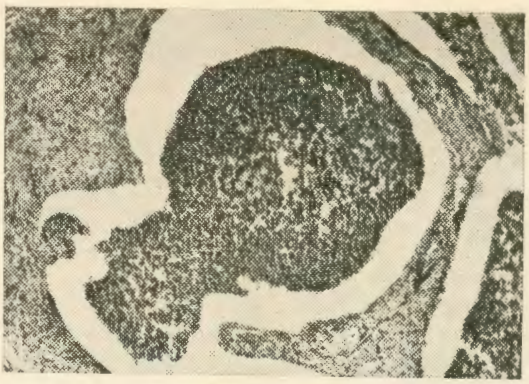

Fig. 1
Microphotograph showing folliculoid pattern and call exner bodies in Granulose cell tumour (H & E x 100).

Fig. 1
Appearance of multiload.

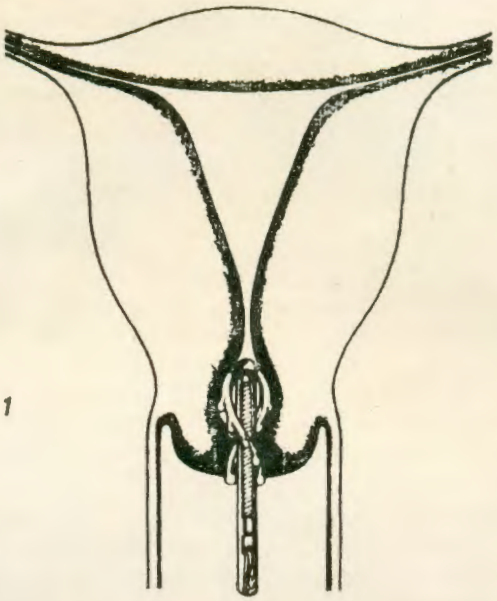

Fig. 2
The device being pushed through the internal OS without a plunger.

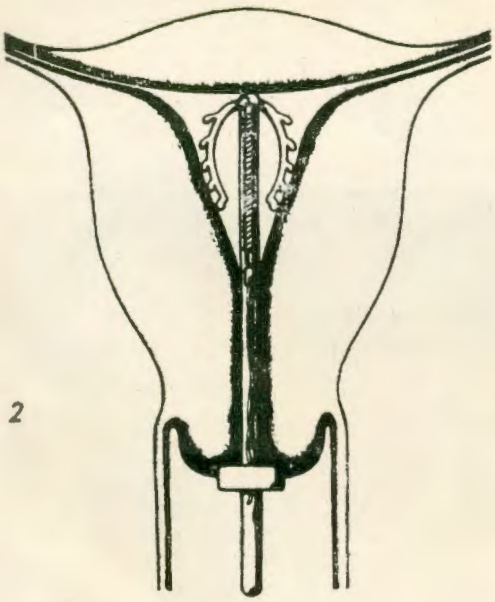

Fig. 3
The device (ML) has been completely inserted into the uterus.

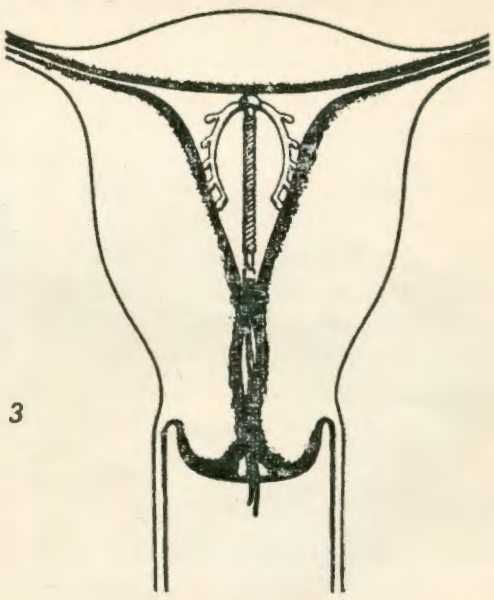

Fig. 4
The inserter is removed and the device (ML) stays in the uterus.

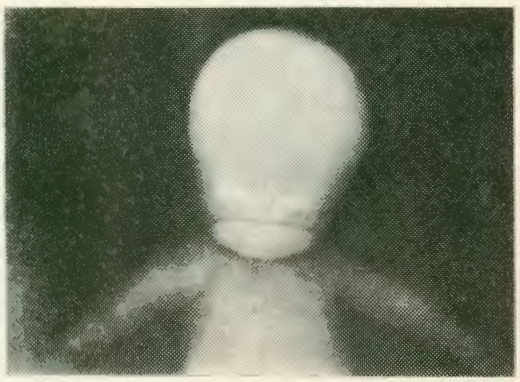

Fig. 1
Skiagram of foetal skull shows lack of ossification of vault bones. Only few 'wormian' areas of ossification are seen.

Fig. 2
Skiagram of foetal body showing poor calcification of bones multiple fractures and 'waxy' ribs.

Solitary Pelvic Kidney with Duct Malformation
Agarwal & Mathur pp. 695-696

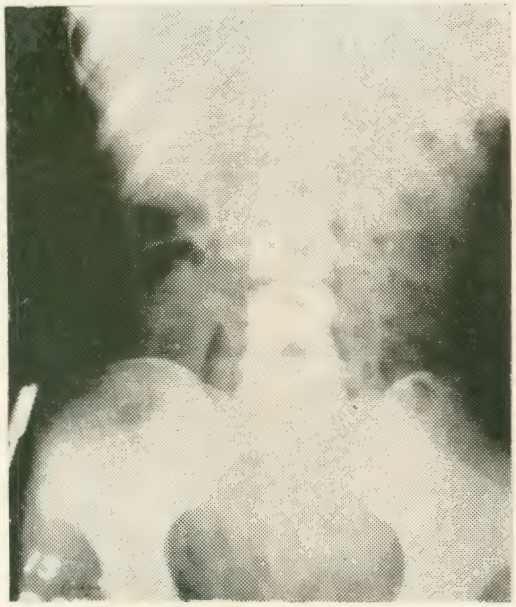

Fig. 1
I.V.P. of case 1 showing solitary pelvic kidney with mild hydronephrotic changes.

Recurrent Intrahepatic Cholestatic Jaundice—
Borade et al. pp. 704-705

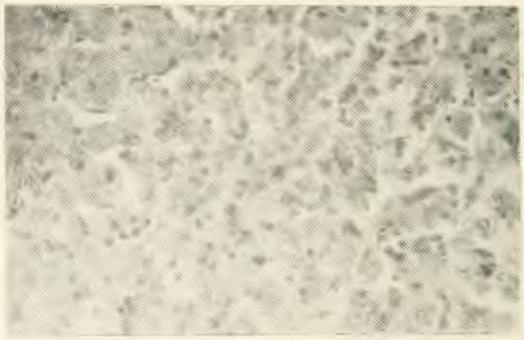

Fig. 1
Liver in recurrent jaundice of pregnancy, showing cholestasis in the hepatocytes H & E x 160.

Fig. 1
The uterus bicornis unicollis before operation.

Fig. 2
Showing the uterus after metroplasty.

Fig. 3
Showing the uterus after caesarean section following metroplasty.

Foetus Papyraceus—Kulkarni pp. 707-708

Fig. 1
Foetus papyraceus.

Anaplastic Carcinoma Cervix in a Girl Aged 14 Years—Kaur et al. pp. 709-711

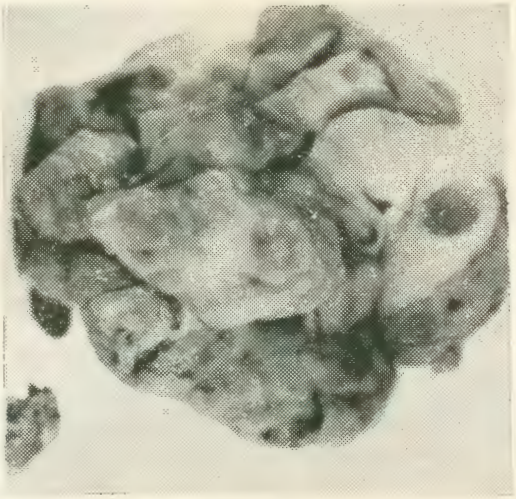

Fig. 1
Shows polypoidal necrotic, infected growth 10 cms round with stump after local excision

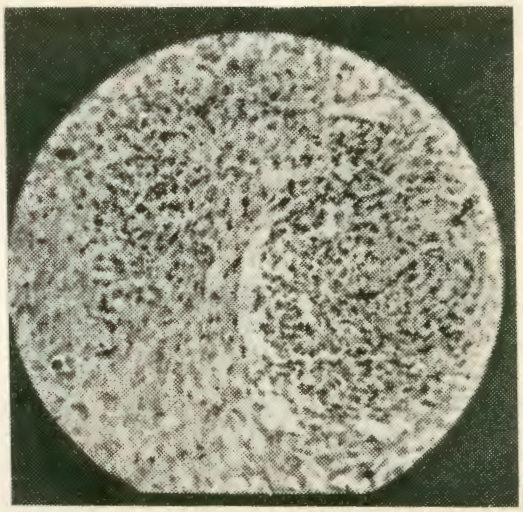

Fig. 2
The microphotograph shows the tumour composed of predominately oval or spindle shaped cells with ill defined outline and light pink cytoplasm and prominent hyperchomatic oval or spindle shaped nuclei.

Vesico-cervical Fistula—Sivaraman & Sharadambi pp. 714-715

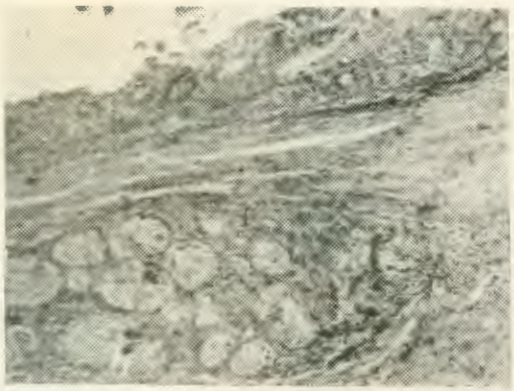

Fig. 1
Granulosa cell carcinoma showing follicular pattern with call-exners bodies.

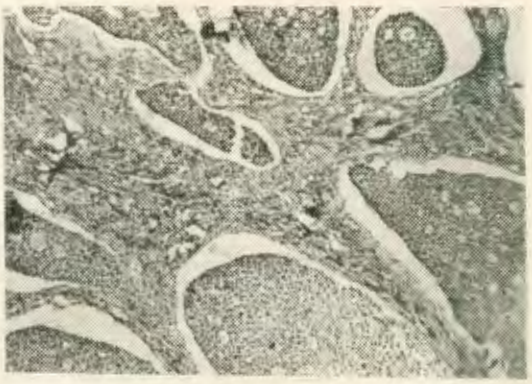

Fig. 2
Along with the granulosa cell element are seen well differentiated archenoblastomatous tissue.

Occurrence of Partial Moles within an Elective Abortion—Goyal & Kellock pp. 636-638

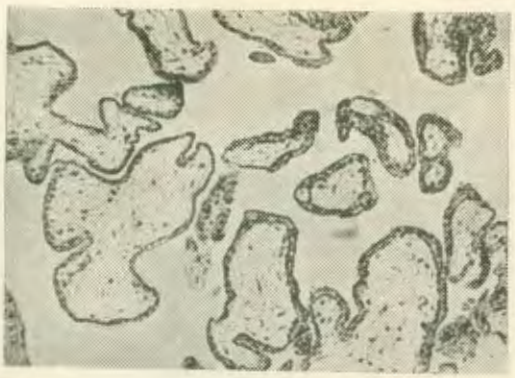

Fig. 1
Microsection showing presence of normal and hydropic chorionic villi.

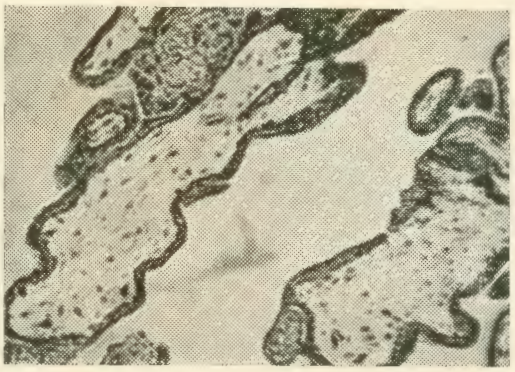

Fig. 2
Presence of trophoblastic hyperplasia from mild to moderate much less dramatic than classical mole

Gynandroblastoma of Ovary—Sarkar et al. pp. 712-713

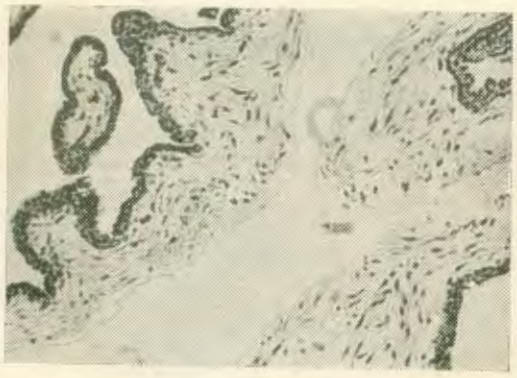

Fig. 3
Formation of maize-like cisterns in enlarged villi.

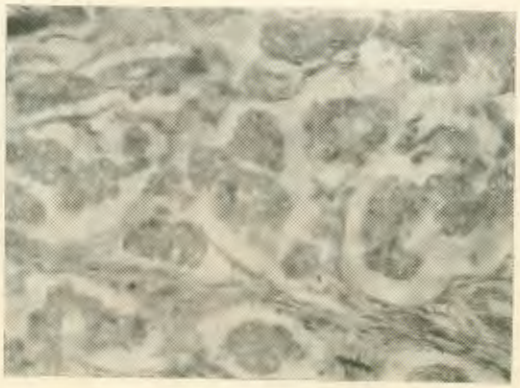

Fig. 1
The photomicrograph is high power view of adenocarcinoma. Typical stromal tissue not seen.

nostic possibilities of an adnexal mass in a child. The distribution of various types of tumours and clinical findings in published series are fairly similar. The most common type of ovarian tumour in children is the benign cystic teratoma or dermoid cyst (57.1%). Witzberger and Agerty (1937) founr 31% teratomas among 186 cases. Garner and Sjoball reported 1949 35% of total 43 cases tumours. Among 263 cases Groeber (1963) found 131 (50%) to be benign cystic teratomas, 21 (8%) solid teratomas and 7 (3%) malignant teratomas. Thatcher reported (1963) 22.97% teratomas. Abell *et al* (1965) series of 35 patients of premenstrual age reported 45% mature teratoma. 12% partially differentiated teratomas and 16% embryonic teratomas.

Tumours of the surface epithelium such as serous cystadenoma and mucinous cystadenocarcinoma constitute 28.56% Costin and Kennedy (1948) reported 42.85%, Forshall (1960) 16.66%, Groeber (1963) 66.66%. Schaefer and Veprovsky (1949) reported 1 case of mucinos cystadenocarcinoma out of 4 cases of ovarian tumours in children (33.33%). Sawai and Susat reported 12% of the tumours of surface epithelium but the age considered for the study was upto 20 years. The case of endodermal sinus tumour in this study had already been reported from this institute (Kherdekar *et al* 1974). This consitute 14.28% of the total ovarian tumours in children.

Summary

Ovarian tumours in children constitute 2.25% of the total ovarian tumours from 1st January, 1973 through 31st December, 1980.

Mass and pain in abdomen was the predominate clinical findings.

Benign cystic teratoma (dermoid Cyst) is the commonest (57.1%) amongst all the cases, followed by tumours of the surface epithelium (28.56%) and germ cell origin (14.28%) in order of sequence.

Pathology shows the tumour were cystic in consistency and left ovarian involvement in majority of cases (66.67%).

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