OVARIAN TUMOURS IN CHILDHOOD AND ADOLESCENCE

by

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Ovarian tumours in childhood and adolescence have always provided a rich source of study for students of teratology, embryology and pathology. To a clinician, they have been ever baffling due to the uncertainties of their natural course and behaviour. The clinician, moreover, is constantly confronted with safeguarding of the future lives of the unfortunate victims of these tumours.

The experience gathered over 8 years, from the study of 15 cases of ovarian tumours in girls under the age of 15 years, is presented here.

Incidence

As the various cases were pooled from different institutions and from private physicians, no attempt was made to probe into statistical incidence of ovarian tumours in early age-groups.

Age of Patient and Type of Tumour

Certain pathological entities of ovarian tumours occur more commonly at specific age-groups. The malignant teratoma and benign cystic tumours are commoner at birth; teratoma predominates before 2 years of age; while adenocarcinoma and granulosa-cell tumours creep in between 3 and 8 years. There is generally a steep rise in the number of dysgerminomas after 12 years of age. Embryonal and more malignant tumours occurring in earlier life, naturally, carry graver prognosis.

TABLE I

Nature of Tumour and Age

Age	Dysgerminoma	Teratoma		Adenocarcinoma	Granulosa-cell tumour	Serous cyst-adenoma
		Malignant	Benign			
8 years and less ..	—	1	—	—	—	—
12 years and less ..	1	2	—	1	1	—
15 years and less ..	5	2	1	—	—	1

In Table I is indicated the distribution of the present series according to the age-groups. Dysgerminomas were commonest, with malignant teratomas second in frequency. Comparative rarity of benign tumours in Indian studies is reemphasised.

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Presenting Symptoms

TABLE II
Presenting Symptoms

	Lump	Lump pain	Lump pain fever	Pain lump	Pain fever lump	Pain	Fever lump	Fall pain lump
No. of cases	3	2	1	3	3	1	1	1

Table II indicates the presenting symptoms. Presence of a lump was the most obvious, and observed in all but 1 girl. Its detection was done by the patient herself in 7 instances, by her parents in 3 and by the attending doctors in 5.

Pain as a complaint ran a close second and was associated in 11 cases. Fever was the primary complaint in only one case though it was present in 5. Fever, in the cases, was not as much due to infection as due to necrosis of the tumours.

Physical Findings

These are shown in Table III.

Restricted mobility does not indicate difficulty at operation; out of 5 cases here, four in fact proved to be quite mobile at operation. Complete fixity of tumour carried grave significance, and in 2 of the 3 cases the operation could not be completed. On the other hand, in 2 cases in which the swellings clinically appeared to be mobile, adhesions were found at the time of operation.

Table IV shows the findings on the operating table.

Resectable tumours were present in 10 cases out of fifteen. No side was more prone to disease, nor was there any preponderance of any tumour

TABLE III
Clinical Findings

Lump: size	Above umbilicus	6	Mobility	Free 7
	At umbilicus	8		Restricted 5
	Below umbilicus	1		Fixed 3
Consistency	Firm	11	Tenderness	Present 10
	Soft	2		Absent 5
	Hard	2		

The sizes of the lumps were very striking; for in all but one the upper limit was at the umbilicus or above it. It is strange that in spite of the fact that, in children, the abdominal distension due to ovarian tumours becomes obvious early, it goes undetected till so late as seen above. Prognosis of a case becomes poorer with larger masses.

TABLE IV
Findings on Operating Table

1.	Capsulated tumour	11
2.	Mobility of tumour	10
3.	No spread of disease	10
4.	Torsion of pedicle	11
5.	Right-sided: 5; left: 6; mixed: 2; not known: 2	
6.	Perforation	4
7.	Adhesions	5
8.	Metastases	5

pathology on either side.

TABLE V

Interval Between Onset of Symptoms and Treatment

Less than one month	5 cases
Less than three months	3 cases
Less than six months	3 cases
Less than one year	2 cases
More than one year	2 cases
Total	15 cases

Table V. The shortest interval was 5 days and the longest was 4 years. The fault in the late adoption of treatment in most of the cases, lay with the patient or the parent; factors like ignorance, carelessness and apathy played a part here. But in eight cases, the attending doctors might be criticised for delays ranging from 2 weeks to 3 years.

Diagnosis

That the diagnosis is missed or mistaken in acute cases is well-known. Wilm's tumour, retroperitoneal mesodermal tumours, appendicitis, and perforation of Meckel's diverticulum are stressed by previous authors (1, 2, 5, 9). Enteric fever, tuberculosis of abdomen and cirrhosis of liver are not quite uncommon in our country and tuberculosis, in particular, gives most varied clinical pictures; in every abdominal case, one would be wise in considering this possibility.

In the series, wrong diagnosis was primarily made in 7 cases out of 15, as indicated in Table VI.

Treatment

In all ovarian tumours the treatment is, undoubtedly, operative.

TABLE VI

Mistaken Diagnosis

1. Enteric fever—intestinal perforation with abscess	1
2. Tuberculous abdomen with matted intestinal masses	2
3. Retroperitoneal tumour	1
4. Wilm's tumour	1
5. Cirrhosis of liver with ascites ..	1
6. Abdominal wall haematoma ..	1

TABLE VII

Treatment

Operative:	Preferably Conservative
10 cases:	Unilateral oophorectomy or salpingo-oophorectomy
No case:	Radical operation, i.e., total hysterectomy with bilateral salpingo-oophorectomy
5 cases:	Too advanced for complete surgery.

In encapsulated tumours, the question of the amount of surgery to be undertaken features prominently when the patients are young. Malignancy of the tumour and possibilities of recurrence of disease, are weighed against the possibilities that the girl may grow up, develop secondary sexual characters and later on conceive. The trend should be to be as conservative as is practicable. Thus, 10 of the cases reported here, were treated conservatively i.e. by unilateral oophorectomy or unilateral salpingo-oophrectomy. Out of these 10 patients, 6 are alive, including, of course, the 2 with benign tumours at the time of reporting.

In no case was a radical operation (total hysterectomy with bilateral salpingo-oophorectomy) carried out.

In advanced cases the operation should aim at removal of all the diseased tissue and this may involve a total extirpation of internal genital

organs. In the 5 advanced cases quoted here it was possible to remove only part of the disease leaving some pathology behind. This was due to lack of feasibility rather than due to falliability. Four of these died soon after operation. One is alive, but this case was very recently done.

Deep X-rays Immediately after Surgery

The value of deep x-rays post-operatively, either as a prophylactic measure or as a palliative procedure, is still under debate for treatment of all ovarian malignancies. It is much more so, when applied to children. Most of the gynaecologists believe deep x-rays do little good; and yet, the majority continue to advise it. Prophylactic deep x-rays during the first 2 decades of life cannot be more strongly condemned. Palliative deep x-rays as a routine procedure should be deprecated too; dysgerminoma alone responds satisfactorily and deep x-rays are advocated only in such cases. In the other types, the effect is only of burning the patient and not the growth. These comments seem to be substantiated by the results as given in Table VIII.

In the present series, 2 teratomata received prophylactic deep x-rays with no improvement.

The granulosa-cell tumour also received prophylactic therapy. But the result was equivocal. Three advanced cases, an adenocarcinoma, a teratoma and a dysgerminoma received palliative deep x-rays. No improvement was noted and the patients went down-hill rapidly.

Deep X-ray Therapy on Recurrence

Three cases of dysgerminomata in which conservative operative procedures were carried out, showed up, in the follow up examinations, with recurrences and these were submitted to deep x-ray therapy. In 2 cases, there were purely local recurrences on the same side as the oophorectomy. Both showed improvement.

The third case of dysgerminoma (grouped under advanced) was noted to have multiple abdominal secondaries and mild ascites 7 months after oophorectomy. No improvement was noted.

It appears from this study that a response is to be expected only if the recurrence is a local one; and when the tumour is a dysgerminoma, the response is best. Indeed, in this respect, the results of x-ray therapy are

TABLE VIII
Deep X-ray Therapy

			Result
Prophylactic:	2 teratomata		Metastases
	1 granulosa-cell tumour		Equivocal
Palliative:	Advanced cases:	1 Adenocarcinoma	No improvement
		1 Teratoma	No improvement
		1 Dysgerminoma	No improvement
On recurrence:	3 Dysgerminomata	(a) Local	Regression
		(b) Local	Regression
		(c) Generalized	No improvement

quite encouraging. On the other hand, no success with palliative or prophylactic deep x-rays in other types of tumours should be expected. Chemo-therapy was tried in no case due to lack of availability.

Follow-up

TABLE IX
Follow-up

5 (Advanced cases), Four are dead.
2 Benign tumours — alive — 6 months.
2 Dysgerminomata — alive — 6 years — 5½ years.
1 Teratoma — alive — 5 years.
1 Granulosa-cell tumour — alive — 2 years.
3 Teratomata — dead.
1 Dysgerminoma — dead.

It may be repeated that out of the 5 cases in which incomplete surgery was done, 4 died from cachexia within 6 months of operation with or without post-operative deep x-rays. One case is very recent and is alive still.

Among the others, 2 were benign tumours and both patients are now alive and are within 6 months of operation. Two cases of dysgerminomata are alive 6 years and 5½ years after operation. The former has been free of disease all these years and is a normal girl of 21 years. The latter has already married and conceived. A case of malignant teratoma is still well, 5 years later. She is 16 years old but has not menstruated. One case of granulosa-cell tumour is free of disease for 2 years and is mentioned too.

Three teratomata and 1 dysgerminoma died at varying time, within 1 month to 7 months after operation.

Summary

1. A clinical study of 15 cases of ovarian tumours in childhood and adolescence is reported.

2. Thirteen out of 15 tumours were malignant with dysgerminoma predominating.

3. Delay in seeking medical aid and delay in institution of treatment are brought to light.

4. Unilateral oophorectomy was carried out in 10 cases out of fifteen. The author feels that such conservatism is justified in encapsulated tumours at these age groups.

5. The study indicates that deep x-rays as a prophylactic measure is not worth while. As a palliative measure, deep x-ray should be given only in dysgerminomata.

6. Out of the 10 cases detected not too late and treated as shown above, 6 were alive at the time of reporting.

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