

OVARIAN TUMOURS COMPLICATING PREGNANCY

(A Critical Analysis of 30 Cases)

by

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Ovarian tumours complicating pregnancy present important diagnostic and therapeutic problems. The first important reference to ovarian tumours complicating pregnancy was made by E. McDowell in 1809. Since that time, these cases have frequently engaged the attention of different authors regarding their various problems in clinical practice.

Incidence

This is a review of 30 cases of ovarian tumours complicating pregnancy admitted to the Eden Hospital, Medical College, Calcutta, during the period from January 1964 to December 1965. During the same period the total number of pregnant cases attended was 54,000, including the cases recorded in the antenatal clinic. So the incidence of ovarian tumours complicating pregnancy in this hospital comes to 1 in 1,820.

The incidence quoted by various authors varies from 1 in 102 pregnancies (Mathew and Holman, 1931) to 1 in 8,000 (Gustafson, 1954). In the University College Hospital, the

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incidence amongst booked cases was 1 in 1400 (Browne, 1951). This great variation in incidence possibly depends upon the differences in interpretation of what constitutes ovarian enlargement. Hass (1949) suggests that cysts smaller than 5 c.m. in diameter should not be considered as neoplastic ones as they are indistinguishable from the functional varieties.

Relationship to Age and Parity

The distribution of age and parity of these 30 cases was as shown in Tables 1 and 2 respectively.

TABLE I
Age distribution

Age groups	No. of cases
16 to 20 years	6
21 to 25 "	7
26 to 30 "	10
31 to 35 "	4
36 to 40 "	2
Above 40 years	1

TABLE II
Distribution of parity

Parity	No. of cases
0	4
1	5
2	7
3	3
4	1
5 and above	10

These two tables show that there is no definite relationship to the age and parity of the patients. Gustafson *et al* (1954) were also of the same opinion regarding age and

Total No. of cases	1st Trimester	2nd Trimester	3rd Trimester	Labour	Puerperium
30	16	11	1	1	1

parity in ovarian tumours complicating pregnancy.

Varieties of Ovarian Tumours

Dermoid cysts are more common than other ovarian tumours. In the present series there were 12 dermoid cysts in 30 ovarian tumours — about 40 per cent. Caverley's (1931) estimates regarding the incidence of dermoids in pregnant and non-pregnant women are 48.5 per cent and 10 to 12 per cent respectively. The relative frequency with which dermoids are found in pregnancy is possibly due to the complications, namely, torsion or obstruction, which may occur during pregnancy or during labour.

Site of Tumour

In the present series, the distribution of the tumours according to the site was as follows:

	Number	Per cent
(a) Pelvis	16	53.4
(b) Abdomen	14	46.6

According to Browne (1951), the tumour is situated in the true pelvis or above the pelvic brim with about equal frequency. In Caverley's series, out of 87 cases, 52 per cent were in the true pelvis and 48 per cent above the pelvic brim.

Duration of pregnancy when the tumour was diagnosed

In the current literature, the num-

ber of cases occurring in early pregnancy is more than that in the later months. The distribution of cases according to the duration of pregnancy in the author's series was as follows:

Clinical Features and Diagnosis

Ovarian cysts are notoriously symptomless, especially in the early stage. In many cases they are discovered only during routine medical examination. The remainder are diagnosed at the time of some complications of the tumour, such as torsion, haemorrhage, rupture, infection or obstruction in labour. Sometimes, the tumours produce only pressure symptoms such as retention of urine, constipation, or pain in the lower abdomen.

Thus we find that two groups of cases present themselves for treatment. In one group the patients are admitted as emergencies and in the other as non-emergency cases. In this series 20 cases were admitted as an emergency and the rest as non-emergency cases.

Emergency group of cases

In the presence of conditions requiring urgent attention, the history of the presence of a mobile mass in the non-pregnant state is of great help in the diagnosis. Otherwise it may be difficult to distinguish the condition from tubal gestation, corpus luteum haematoma, acute appendicitis or retroverted gravid uterus. Some cases are encountered for the first time during labour as a cause of obstruction and these have to be dif-

ferentiated from fibromyoma of uterus.

Non-emergency group of cases

This group of cases may be confused with retroverted gravid uterus, pregnancy in a rudimentary horn of a bicornuate uterus or corpus luteum cyst. In the later months of pregnancy, the diagnosis is difficult because of the enlarged uterus. Cysts are again easily palpable during the puerperium, when the abdomen is lax and the uterus is involuting. X-ray is not of much help in the emergency cases but in non-emergency cases it may help in the diagnosis of a dermoid cyst, if teeth and bones are present.

The interpretation of the significance of an adnexal mass may pre-

sent considerable diagnostic difficulty during pregnancy, labour and puerperium as is evident from Table 3. In this series one-third of the cases were misdiagnosed. The nature of the mistake is tabulated in Table 4.

Result

The results of operation in 30 cases of ovarian tumours complicating pregnancy are given in Table 6. Excepting in cases of primary malignant ovarian tumour complicating pregnancy where sub-total hysterectomy together with bilateral salpingo-oophorectomy was done, in all other cases, ovariectomy was done with conservation of pregnancy in the 1st and 2nd trimester and caesarean section in the advanced pregnancy and also when the patient came with labour

TABLE III
Frequency of the different types of ovarian tumour

Authors	Total cases	Dor-moid	Serous cyst	Pseudo mucinous	Endo-met.	Par-ovr.	Mal-ignant	Func-tional	Solid
Cavereley (1931) ..	69	33	22	5	0	4	1	4	..
Child and Douglas (1944)	23	7	7	2	0	1	2	4	..
Gustafson (1954) ..	45	18	17	4	2	2	0	5	3
Hamilton and Higgins (1949)	21	5	6	0	2	1	4	2	1 (undia-gnosed)
Hass (1949) ..	25	13	3	1	2	1	2	3	..
Author ..	30	12	9	7	1	..	1
(Eden Hospital, (1964-65),									

TABLE IV
Time and frequency of incorrect diagnosis

Time	Total No. of cases	No. of cases erroneously diagnosed
First trimester ..	16	5
Second trimester ..	11	3
Third trimester ..	1	1
Labour ..	1	1
Post-partum ..	1	..
	30	10

pains. In the postpartal case simple ovariectomy was done.

Maternal

There was no maternal death and no significant maternal morbidity following operation. The abdominal wound healed well and successfully withstood labour in vaginal delivery in 22 patients.

TABLE V
Incorrect preoperative diagnosis

Pre-operative diagnosis	Weeks of gestation	Findings at operation
A. First trimester		
1. Ectopic pregnancy	6	Twisted dermoid cyst.
2. Ectopic pregnancy	8	Twisted serous cyst.
3. Appendicitis	8	Infected dermoid cyst
4. Torsion of rudimentary horn of uterus..	10	Twisted serous cyst
5. Twisted degenerated subserous uterine fibroid ..	10	Infected dermoid cyst.
B. Second trimester		
1. Appendicitis	16	Infected dermoid cyst
2. Uterine fibroid	16	Twisted primary ovarian carcinoma-adenocarcinoma.
3. Retroverted gravid uterus	14	Dermoid cyst.
C. Third trimester		
1. Accidental haemorrhage	30	Haemorrhage in the serous cyst.
D. Labour		
1. Over-distension of abdomen due to big baby ..	41	Torsion of thecoma

TABLE VI
Results of operation

Outcome of pregnancy	No. of cases
Abortion	2
Premature labour	2
Normal vaginal delivery in the hospital	14
Confined outside	6
Caesarean section	4
Subtotal hysterectomy and removal of tumour	1
Torsion during puerperium	1
	30

There were 25 live babies in 30 pregnancies, giving a gross foetal mortality rate of about 3.3 per cent. The causes of foetal death in addition to 2 abortions were as follows:

Prematurity 2; removed together with subtotal hysterectomy in cases of malignant ovarian tumour complicating pregnancy—1; asphyxia neonatorum—1; intracranial haemorrhage—1.

Management

Ovarian tumours complicating pregnancy should be removed at the

earliest opportunity to avoid such complications as torsion, rupture, infection, haemorrhage, or spread of malignancy should that be present. On the other hand, the removal of the tumour may be followed by abortion in the early months and premature onset of labour in the later months, if there has been too much handling of the uterus. Furthermore, if labour starts within a few days, the wound is subjected to excessive strain.

In consideration of these points, the principle followed in the management of the present series was that the tumour was removed as soon after the sixteenth week as possible, when the placenta was well formed and the chance of abortion was less. If the tumour was diagnosed after the twenty-eighth week of gestation the cyst was not removed immediately unless there was some complication.

Management of the ovarian tumour complicating labour depended upon whether it lay above or in the pelvic

cavity. In case of ovarian tumours lying above the pelvic brim and causing no obstruction, vaginal delivery was allowed and the tumour was removed as early in the puerperium as possible. When the tumour was situated in the pelvic cavity causing obstruction, caesarean section was the method of choice together with removal of the tumour. When the patient was seen with the tumour after confinement, operation was performed without delay during the puerperium.

Progesterone was not used in any case of the present series. The concentration of progesterone that would have to be maintained in the blood in such cases is so high that it is not worth administering it in the usual doses.

Summary

1. Thirty cases of surgically proved ovarian tumours complicating pregnancy have been analyzed.

2. Dermoid cyst proved to be the most common ovarian tumour found associated with pregnancy.

3. In the series of 30 cases, there were no maternal deaths and 25 infants survived.

Conclusion

For uncomplicated cases, the optimum time for operation is between the sixteenth and the twenty-eighth

weeks of gestation. Cases diagnosed in the third trimester are better operated upon in the puerperium unless they cause obstruction during labour.

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