EPIDEMIOLOGICAL STUDY OF OVARIAN NEOPLASM MET IN RURAL PRACTICE

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Amongst gynaecological oncology ovarian neoplasma present perplexing problem not only to the clinicians but also to the pathologists. Because of complex embryological and histogenetic background, it is all the time useful to find out the etiopathological basis of such tumours. Scant literature on the subject dealing with rural materials only, prompted the authors to have an epidemiological study of the tumours met in rural practice.

The material was from the personal series of one of the authors (DCD) while attached to District Hospitals, Jalpaiguri, Suri and Chinsurah of West Bengal covering a period from 1965-1973. During this period 68 ovarian tumours were met which has been presented for analysis.

Analysis

TABLE I

Reasons for Hospital Attendance

	No.	%
Enlargement of abdomen with discomfort	26	38.2
With complications	20	29.4
Cachexia with abdominal swelling	10	14.7
Accidental diagnosis from O.P.D.	7	10.3
Admission in medical ward as portal cirrhosis	5	7.4

Only 7 cases were diagnosed accidentally from O.P.D. and the rest came with complications or with disabilities.

TABLE II

Age Distribution

		20	20-30	31-40	41-50	Total
Benign	No.	10	24	9	12	55
	%	18.2	43.6	16.4	21.8	100
Malignant	No.	—	7	2	4	13
	%	—	53.8	15.4	30.8	100

Whereas 60% of the benign tumours were in the age group of 20-40, in malignancy 53.8% were in the age group of 20-30. The average age in benign and malignant tumour was 29.8 and 32.6 years respectively.

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TABLE III
Distribution in Relation to Parity

	Parity				
	0	1-3	4, 5	6 +	Total
No.	8	21	24	15	68
%	11.8	30.9	35.2	21.2	100

All were married. Nulliparity was found in 11.8% and in 56.4% it was present in parity 4 +, the average parity was 3.74.

Social status: Except 5, all belonged to low income group, which was in conformity with that of hospital population.

Religion: The tumours were confined to Muslims in 9 (13.2%) and the rest were distributed amongst Hindus. The distribution of Muslims amongst the hospital population was not more than 5%.

Nearly 90% of the tumours were observed during child bearing period. During the period of study there were 19,888 births, giving a frequency of ovarian tumours with pregnancy as 1 in 1657.

Dermoid was related with infertility in 4 out of 7 cases and mucinous cyst was associated with amenorrhoea in 3 out of 5 cases.

TABLE IV
Distribution Different Phases of Life

	Pre-puberty	Child Bearing Period		Menopause
		Pregnant	Nonpregnant	
No.	—	12	48	8
%	—	17.6	70.6	11.8

TABLE V
Association of Infertility and Menstrual Abnormality (Non-pregnant State)

	No.	%	Nature of tumour		
Infertility (3 years)	7	14.6	Dermoid	—	4
			Mucinous	—	1
			Adenocarcinoma	—	2
Amenorrhoea	5	10.4	Mucinous	—	3
			Dermoid	—	1
			Dysgerminoma	—	1
Menorrhoegia	3	6.2	Dermoid	—	1
			Serous	—	1
			Granulosa cell tumour	—	1
Scanty menstruation	2	4.2	Serous	—	1
			Mucinous	—	1

TABLE VI

Pathology of Benign and Malignant Tumours

Benign (55)			Malignant (13)	
	No.	%	No.	%
Serous	25	45.45	Adenocarcinoma 8	61.54
Mucinous	19	34.55	Functioning 2	15.38
Dermoid	10	18.18	Krukenberg 2	15.38
Haemangioma	1	1.82	Squamous cell carcinoma 1	7.70

Amongst the benign tumours 80 per cent were serous and mucious and adenocarcinoma was found in 61.54% in the malignancy group.

Torsion was the predominant complication during pregnancy, being 50% in contrast to that of 27.1% in non-pregnant state. During pregnancy, dermoid underwent torsion in 2 out of 3 cases (66.7%) in contrast to that of serous being 43.4%. During non-pregnant state, serous cyst underwent torsion in 64.7%, whereas there was not a single case of torsion in dermoid.

TABLE VII

Nature of Tumours in Various Phases of Life

	Pregnancy and Puerperium 12 (17.6%)		Non-pregnant 48 (70.6%)		Menopause 8 (11.8%)	
	No.	%	No.	%	No.	%
Benign						
Serous	7	58.3	17	35.4	1	12.5
Dermoid	3	25	7	14.6	—	—
Mucinous	2	16.7	13	27	4	50
Haemangioma	—	—	—	—	1	12.5
	12	100	37	77	6	75
Malignant						
Adenocarcinoma	—	—	7	14.6	1	12.5
Krukenberg	—	—	1	2.1	1	12.5
Functioning	—	—	2	4.2	—	—
Squamous cell	—	—	1	2.1	—	—
			11	23	2	25

Serous cyst was predominantly present both in pregnant and non-pregnant state while there was relative increased frequency of dermoid during pregnancy. Malignancy was squarly distributed both in non-pregnant and menopausal state.

TABLE VIII

Complications of Tumours in Various Phases of Life

	Pregnancy and Puerperium (12)		Non-pregnant (48)		Menopause (8)	
	No.	%	No.	%	No.	%
Torsion of the pedicle	6	50	13	27.1	—	—
Malignancy	—	—	11	23	2	25
Intracystic haemorrhage	1	8.3	—	—	—	—
Pseudomucinous peritonii	—	—	1	2.1	—	—

TABLE IX

Nature of Tumours in Relation to Consistency

	Cystic — 60 (88%)		Solid — 8 (12%)	
	No.	%	No.	%
Benign	54	90	1	12.5
Malignant	6	10	7	67.5

90% of the cystic tumours were benign and 87.5% of the solid tumours were malignant.

Bilateral: The tumours were bilateral in 9, 3 in malignancy and 6 in benign. Amongst benign, dermoid was bilateral in 3 and out of 3 malignant ovaries, 2 were Krukenberg.

Discussion

Due to lack of consciousness of the entity, inadequate medical facilities, the patients with ovarian neoplasm usually came to the referral District Hospitals mostly with complications. Accidental diagnosis of only 1 in 10 cases, with the rest admitted as emergency in the series clearly amplify the late arrival of the patient.

The distribution of both benign and malignant in relation to age was corroborative with those mentioned by Bhuvanesh and Logambal (1978), Mehta and Purandare (1964) and Roy Chowdhury, *et al* (1977). An increased frequency of benign tumours below the age of 20 is however at variance with that mentioned by Bhuvanesh and Logambal (1978), being 4.3%. The fact that ovarian malignancy has got no age bar was substantiated by the pattern of its distribution and of significance was the close approximation of the average age in benign and malignant one, being 29.8 and 32.6 years, respectively. The increased frequency of neoplasm, malignancy in particular, in earlier age group might be due to low socio-economic condition and ill-health as also suggested by Roy Chowdhury, *et al* (1977).

Prevalence of low parity (3.74), of increased incidence of nulliparity (11.8%) and of functional disturbance suggested by association of infertility (14.6%) amenorrhoea (10.4%), menorrhoegia (6.2%) and scanty menstruation might suggest some causal relation which are

probably interlinked. Roy Chowdhury *et al* (1977) also mentioned infertility of more than 10 years in 3.6% cases of benign and 1.7% in malignant and menstrual abnormality in 22% cases of benign and 12.8% cases of malignant. In the series of Bhuvanesh and Logambal (1978), 25% of benign and 33% of malignant tumours were associated with abnormal vaginal bleeding

Because of early age distribution and frequent complications during pregnancy, the tumours are observed more during pregnancy. While Ramoso—Jalbuena and Sotto (1967) found it in 1 in 1236 pregnancies, Bhuvanesh and Logambal (1978) mentioned its frequency as 1 in 2233.

19.1% frequency of malignant tumours in the series were in parity as mentioned by Taylor, (1950) being 21%. Malignancy was equally distributed both in non-pregnant state and in menopause, being 23% and 25% respectively. Association of malignancy during pregnancy is indeed a rarity.

Of the benign tumours, serous cyst was the most frequent, being 45.45% followed by mucinous cyst 34.35% and in the malignant adenocarcinoma was the most frequent being 61.54%. The distribution is almost in uniformity with that mentioned by Isaac *et al* (1974) Roy Chowdhury, *et al* (1977) and Bhuvanesh and Logambal (1978). There is however no uniformity in the frequency distribution of the benign tumours in the different phases of life (Table VII). The conspicuous finding was the preponderence of serous cysts in both pregnant and non-pregnancy state, increased frequency of dermoid in pregnancy and increased frequency of mucinous cyst in menopausal group. Ramoso-Jalbuena and Sotto (1977) found dermoid during pregnancy in 43% and serous cyst in 21%.

Torsion of the pedicle is the commonest complication and almost always confined to the benign tumours. Long pedicle, moderate size of the tumour free from adhesions are the responsible factors for torsion in both dermoid and serous cyst more so during pregnancy when the tumours are pushed up by the gravid uterus and free to move in the abdominal cavity.

Cystic tumours are mostly benign and solid ones are malignant the possibility of one to the other should be borne in mind specially while operating one of cystic tumour which is likely to burst during manipulation.

While bilateralism is a conspicuous freature of malignant tumours but a thorough search of the contralateral ovary by even bisection in benign cyst may reveal presence of a mini cyst specially in dermoid, thereby preventing reappearance of a tumour and relaparotomy at a subsequent date.

Summary

An analysis of 68 cases of ovarian neoplasm was made in relation to various aspects such as age, parity, social status, religion and different phases of life to find out its direct or indirect relationship.

Clinicopathological correlation was attempted to find out the "at risk" patients likely to have the neoplasm.

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