

## OVARIAN TUMOURS - A TEN YEARS STUDY

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### SUMMARY

Analysis of 285 consecutive cases of ovarian neoplasms observed during the last 10 years revealed 181 (63.5%) benign tumours and 104(36.5%) malignant ones. The malignant tumour comprised of 2.7% of the total malignancies (3677 cases) observed during the same period.

Among the benign, the cystic tumours were most common. There were 63 cases (34.9%) of dermoid cyst, 57 cases (31.5%) of mucinous cyst adenomas, 37 cases (20.5%) of serous cystadenomas and 0.5 to 3.3% of different types of solid benign tumours.

The age range in the benign cases was from 2 1/2 years to 74 years with a mean of 40.3 years.

Adenocarcinoma with 36 cases (34.6%) was the most common malignant tumour followed by 29 cases (27.9%) of papillary carcinoma, 14 cases (13.5%) of dysgerminoma and 6 cases (5.8%) of teratomas. The other types of malignancies in the ovary were uncommon and their incidence ranged from 0.95% to 4.8%. The age of patient of malignant cases varied from 10 years to 80 years with an average of 37.4 years.

### INTRODUCTION

The ovary is very common site of neoplasia in the female genital tract and is the third most common site of primary malignancy in this system (Novak & Woodruff, 1979).

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It accounts for 6% of all cancers in the female (Cotran et al, 1989). The ovarian tumours manifest a wide spectrum of clinical, morphological and histological features. The incidence of ovarian neoplasm and its different types have wide variations in different parts of the world and so in this country.

The present retrospective study has been undertaken to evaluate the incidence and the histological types of ovarian tumours in this part of the country.

#### MATERIAL AND METHODS

The consecutive cases of ovarian neoplasm, benign and malignant, recorded in the Department of Pathology, R.G. Kar Medical College, Calcutta, during the preceding ten years have been included. All the materials were collected as surgically resected specimens. The tissues removed at operation were subjected to gross and microscopic examination. Several sections from different parts of the specimens were stained routinely by Haematoxyline and Eosin Stain and by P.A.S. Stain and Reticulin stain whenever needed. The cases classified according to the classification of Novak and by the International Federation of Gynaecology and Obstetrics (Novak and Woodruff 1979).

#### OBSERVATIONS AND DISCUSSION

Out of total 1712 cases of resected ovaries examined, normal histological picture were obtained in 782 cases. In another 645 cases non-neoplastic cystic lesions like luteal cyst, follicular cyst etc. were observed. They were excluded from the study. Only 285 cases, which were diagnosed histologically as ovarian neoplasm have been taken into account.

Out of 285 cases of ovarian tumours, benign neoplasms were observed in 181 cases (63.5%) and the remaining 104 cases (36.5%) were malignant. Almost similar observations were made by other workers. Gupta et al (1986) studied 340 cases in 20 years period and observed 59.4% cases of benign

neoplasm, 40.0% cases of malignant neoplasm and 2 border line cases. Prabhakar and Maingi (1989) also observed 66% benign tumour and 31.6% malignant tumour out of 636 cases. Also Randhawa and Lata (1980) obtained similar incidence of benign ovarian tumour (65.2%) and malignant ovarian tumour (34.8%) out of 115 cases during four years period.

Regarding the age incidence of these 285 cases, which varied from 2 1/2 years to 80 years, maximum cases were observed in the third decade. The finding was quite agreeable to that made by Gupta et al (1986) and Prabhakar and Maingi (1989). The occurrence of the different types of ovarian neoplasm with age range has been shown in Table-1.

Gross examination of the specimens revealed that in the benign group majority of the cases were cystic. There were 157 (86.7%) cystic cases and 24 cases (13.3%) were solid tumours. But in the malignant group majority cases (69.2%) were of solid type as compared to 30.8% of cystic ones. Gupta et al (1986) observed in the benign tumour group 76.2% cystic, 2.4% solid and 21.5% of mixed consistency. In malignant group they observed 49.2% solid, 44.1% partly solid partly cystic and 6.7% cystic. Prabhakar and Maingi (1989) reported similar incidence of solid cystic and mixed consistency tumour in the benign tumour group, but in malignant group they observed highest incidence (71.4%) of tumours with mixed consistency.

Among the benign cystic tumours highest incidence was observed in dermoid cyst (Benign cystic teratoma). Total 63 cases of dermoid cyst constituted 34.9% of all

benign neoplasm. Second major type comprised of mucinous cystadenoma, with a total number of 57 cases (31.5%). Serious cystadenoma was observed in 37 cases (20.5%) and formed the third commonest group in this study. A similar ranking of these three benign cystic tumours was observed by Gupta et al (1986). Whereas Prabhakar and Maingi (1989) and Randhawa and Lata (1980) observed highest incidence in serous cystadenoma group (22.9% and 54.6% respectively) and followed by mucinous cystadenoma variety (18% and 20% respectively). Mature cystic teratoma was third commonest group in their series.

Among other different solid benign tumours granulosa cell tumour comprised of 6 cases (3.3%) in our study which is quite agreeable to the findings of Saxena et al (1980), Gupta et al (1986) and Prabhakar and Maingi (1989). We observed 2.7% of leiomyoma, 1.7% of fibroma and 2.2% of the cofibroma. Similar incidence was obtained the coma-fibroma cases by Gupta et al (1986), Prabhakar and Maingi (1989) and Saxena et al (1980). However, none of them reported leiomyoma in their studies. A comparative incidence of benign ovarian tumours observed by various Indian authors has been depicted in Table-II.

The age incidences in different types of benign tumour varied from 2 1/2 to 74 years. One case of dermoid cyst was observed in 2 1/2 years of age. Dermoid cyst comprises the major group among benign cystic neoplasms and average age of this group was 30 years.

Analysis of malignant tumours showed that among 3677 cases of total malignancies recorded during the study period, 104 cases (2.7%) were malignant ovarian tumour.

The frequency of occurrence of different malignant tumours has been shown in the table I. Among the cystic tumours, there were 29 cases (27.9%) of papillary serous cystadenocarcinoma and 3 cases (2.9%) of mucinous cyustadenocarcinoma. Gupta et al (1986), Saxena et al (1980) and Sikdar et al (1981) observed much lower incidence of papillary custadenocarcinoma in comparison to ours, whereas incidence of mucinous custadenocarcinoma was quite higher. Randhawa and Lata (1980) observed high incidence of both the types.

Among the solid tumours, maximum number of cases were adenocarcinoma. There were 36(34.6%) such cases out of 104 malignant tumours. Other workers like Randhawa and Lata (1980) Saxena et al (1980) and Sikdar et al (1981) observed 10% to 22%. Incidences of other malignant tumours varied from 0.95% to 13.5% (Table-I). Incidence of dysgerminoma reported by Randhawa and Lata (1980) was 10% in comparison to ours 13.5%. Gupta et al (1986) and Prabhakar and Maingi (1989) observed much lower incidence in this type of neoplasm.

Endodermal sinus tumour was observed only in 3 cases (2.9%). This finding is in close proximity to the observations made by Gupta et al (1986) and Prabhakar and Maingi (1989). They found 1.15% and 0.31% respectively.

Metastatic tumour in ovary was observed in 8 cases (7.7%), which included 4.8% cases of adenocarcinoma, 1.9% cases of squamous cell carcinoma and 0.95% of anaplastic carcinoma. Amongst previous workers Gupta et al (1986) obtained 6.18% of metastatic tumours whereas Prabhakar and Maingi (1989) obtained only 2.95%. A com-

TABLE I

## INCIDENCE OF BENIGN AND MALIGNANT OVARIAN TUMOURS

Morphological Type	Incidence		Age range in years	Consistency
	No. of cases	%		
<b>I. Surface Epithelial Tumour</b>				
<b>A. Serous Tumours</b>				
Benign	37	20.5	11-33	Cystic
Malignant	29	27.9	22-80	Cystic
<b>B. Mucinous Tumours</b>				
Benign	57	31.5	11-60	Cystic
Malignant	3	2.9	24-60	Cystic
<b>C. Brenner Tumours</b>				
Benign	3	1.3	46-50	Solid
<b>D. Adenocarcinoma</b>				
	36	34.6	22-70	Solid
<b>E. Anaplastic Carcinoma</b>				
	1	0.95	35	Solid
<b>II. Sex cord-Stromal Tumours</b>				
<b>A. Granulosa Cell Tumours</b>				
	6	3.3	40-72	Solid
<b>B. Thecoma-fibroma group</b>				
Thecofibroma	4	2.2	35-67	Solid
Fibroma	3	1.7	20-45	Solid
<b>C. Leiomyoma</b>				
	5	2.7	42-47	Solid
<b>D. Arrhenoblastoma</b>				
	1	0.95	50	Solid
<b>III. Germ Cell Tumours</b>				
<b>A. Dysgerminoma</b>				
	14	13.5	14-28	Solid
<b>B. Endodermal Sinus Tumours</b>				
	3	2.9	10-20	Solid
<b>C. Chorio-Carcinoma</b>				
	1	0.95	40	Solid
<b>D. Teratoma</b>				
Benign cystic	63	34.9	25-60	Cystic
Benign solid	1	0.5	40	Solid
Malignant	6	5.8	23-36	Solid
<b>E. Malignant Mesonephroma</b>				
	2	1.9	30-43	Solid
<b>IV. Miscellaneous</b>				
Haemangioendothelioma	1	0.5	21	Solid
Haemangiopericytoma	1	0.5	40	Solid
<b>V. Metastatic</b>				
Adenocarcinoma	5	4.8	27-60	Solid
Squamous Cell carcinoma	2	1.9	42-55	Solid
Anaplastic Carcinoma	1	0.95	44	Solid

TABLE II

## COMPARATIVE INCIDENCE OF BENIGN OVARIAN TUMOURS

	Randhawa & Lata, 1980 %	Saxena et al 1980 %	Gupta et al 1986 %	Prabhakar & Maingi, 1989 %	Present study 1990 %
Total incidence	65.2	82.6	59.4	66.0	63.5
Serous cystadenoma	54.6	31.3	11.2	22.4	20.5
Mucinous cystadenoma	20.0	26.5	20.6	18.0	31.5
Dermoid cyst	14.6	21.3	23.1	20.4	34.9
Leiomyoma	-	-	-	-	2.7
Theco-fibroma	-	0.7	0.3	0.78	2.2
Fibroma	1.3	2.5	2.3	1.57	1.7
Granulosa Cell Tumour	-	3.3	4.4	4.55	3.3
Brenner Tumour	-	-	0.6	0.47	1.3

TABLE III

## COMPARATIVE INCIDENCE OF MALIGNANT OVARIAN TUMOURS

	Randhawa & Lata, 1980 %	Saxena et al 1980 %	Sikdar et al 1981 %	Gupta et al 1986 %	Prabhakar & Maingi 1989 %	Present Study %
Total incidence	34.8	17.3	23.0	40.0	31.6	36.5
Papillary adenocarcinoma	35.0	17.5	16.1	14.7	9.2	27.9
Mucinous cyst adeno- carcinoma	12.5	22.8	9.4	4.1	5.03	2.9
Dysgerminoma	10.0	3.5	6.0	3.5	3.61	13.5
Adenocarcinoma	10.0	19.2	22.7	-	-	34.6
Malignant Mesonephroma	1.3	-	-	0.29	-	1.9
Endodermal Sinus Tumour	-	-	-	1.15	0.31	2.9
Teratoma	-	5.2	2.0	2.06	0.94	5.8
Anaplastic Carcinoma	-	-	6.0	0.9	-	0.95
Chorio-Carcinoma	-	1.7	-	-	0.15	0.95
Arrhenoblastoma	-	-	1.3	-	-	0.95
Metastatic Carcinoma	-	15.7	10.7	6.3	2.95	7.7

parative incidence of malignant ovarian tumours observed by different Indian authors has been shown in Table III.

The average age in different types of malignant ovarian tumour ranged from 16.5 to 50 years with overall range of age was 10 years to 80 years. Dysgerminoma and endodermal sinus tumour occurred in relatively younger age group as compared to other malignant tumours. In dysgerminoma the range of age was 14 to 28 years and average of 19 years. Endodermal sinus tumour occurred in much younger group with age range of 10 to 20 years, the average being 16.5% years. This finding of occurrence of these two tumours in younger age group is totally agreeable with Gupta et al (1986) and Prabhakar and Maingi (1989).

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