

## PATTERN OF OVARIAN NEOPLASM IN EASTERN U.P.

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### SUMMARY

In a 15 year retrospective study of ovarian tumours in B.R.D. Medical College, Gorakhpur, 464 cases were reviewed. Serous tumours were the commonest with 259 cases, followed by mucinous tumours which formed the 2nd commonest group with 87 cases and teratoma which ranked 3rd with 63 cases. Of 464 cases, 370 were benign and 94 malignant. Peak incidence was observed in 3rd decade of life and the youngest case reported was an 8 month old girl having endodermal sinus tumour.

### Introduction

It is a well established fact that neoplastic conditions of ovaries form a complicating and baffling subject in the history of oncology. The neoplasms arising from it inherit a spectrum of histogenetic background, much more varied than any other organ. This pathological complexity had led to a number of classifications and confusing terminologies until 1973 when World Health Organisation classification of Serow et al (1973) was formulated. This has been followed in this 15 year study of ovarian tumours.

### Material and Method

464 cases of ovarian tumours were studied from 1974 to 1989, in the Pathology department of B.R.D. Medical College, Gorakhpur (U.P.). Findings of gross and microscopic examination

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were recorded. Special staining techniques like reticulin, PAS, Sudan IV were adopted wherever required.

Tumour like lesions have not been included in this study.

### Results

Out of total 464 cases, 370 (79.74%) were benign and 94 (20.26%) were malignant. Agarwal and Saxena (1962) reported similar findings (77.03% benign and 22.97% malignant).

Prevalence of different ovarian tumours in various age groups revealed its peak in 3rd decade (25.8%). The youngest case in the present series was an 8 months old girl who had endodermal sinus tumour. Similar age range has been reported by Tyagi and Madan (1978).

21 cases (4.52%) had bilateral tumours. In 16 cases (3.44%), the tumours were malignant and 5 (1.07%) benign. 18 (3.89%) of these

bilateral tumours were pure, i.e. same on both sides, and 3 (0.64%) were mixed, i.e. different on both sides.

On gross examination 353 (95.40%) of benign tumours were cystic, 4 (1.08%) solid and 13 (3.51%) mixed while 69 (73.40%) of malignant tumours were mixed, 15 (15.95%) solid and 10 (10.63%) cystic.

was 15-65 years. Microscopically they were lined by cuboidal epithelium. Papillary projections were present in 21 cases.

7.32% incidence of malignant serous tumours has been observed in present study. Ramchandran et al (1972) also reported 7.09% incidence of above tumours in their series. Out of total 34 cases 10 had bilateral tumours. 25 of

**TABLE I**  
Table showing pattern of Epithelial Tumours of Ovary

Morphological Types	No.	%	Consistency			Unilateral	Bilateral
			Solid	Cystic	Mixed		
<b>A. SEROUS TUMOURS</b>	259	55.81%					
a) Benign	225	48.49%	-	225	-	225	-
b) Malignant	34	7.32%	01	08	25	24	10
<b>B. MUCINOUS TUMOURS</b>	87	18.74%					
a) Benign	75	16.16%	-	69	06	74	01
b) Malignant	12	2.58%	-	01	11	11	01
<b>C. ENDOMETROID CARCINOMA</b>	02	0.43%	01	-	01	02	-
<b>D. CLEAR CELL CARCINOMA</b>	-	-	-	-	-	-	-
<b>E. BRENNER TUMOUR (Benign)</b>	01	0.21%	-	-	01	01	-
<b>F. MIXED EPITHELIAL TUMOUR</b>	03	0.64%	01	02	-	03	-
<b>G. UNDIFFERENTIATED CARCINOMA</b>	-	-	-	-	-	-	-
<b>H. UNCLASSIFIED EPITHELIAL TUMOURS</b>	-	-	-	-	-	-	-

**Discussion**

**1. SEROUS TUMOURS**

Serous cyst adenoma comprising of 225 cases (48.49%) constitute the largest group of present study. Our findings are in accordance with Tyagi et al (1978). All the tumours were unilateral and cystic in consistency. Age range

them were of mixed consistency, 1 solid and 8 cystic. Features of malignancy like invasion of connective tissue stroma multilayering and mitotic figures were observed, on microscopic examination. Most of the cases belong to the age group of 40-50 years, a finding similar to that of Tyagi et al (1978).

## 2. MUCINOUS TUMOURS

Second commonest group among all the ovarian tumours was of mucinous tumours comprising of 87 cases (18.75%). Benign cystadenoma formed 16.16% of all tumours. Similar findings have been reported by others (Ramachandran et al 1972, Verma & Bhatia 1981). Age incidence varied from 17 to 64 years. All of them were unilateral except one. Grossly 69 were cystic while 16 had cystic as well as solid areas (Mixed consistency). Microscopically the lining epithelium was 1-2 layer thick columnar epithelium.

Mucinous cyst adenocarcinoma constituted 2.58% of all ovarian tumour in present series, which closely corresponds to findings of Ramachandran et al (1972) and Tyagi et al (1978). Age range was 21 to 65 years, a finding similar to that of Jadgehwari et al (1971). All the tumours were unilateral with only one bilateral. Histology revealed characteristic features of malignancy.

## 3. OTHERS

Among the remaining epithelial tumours 2 cases of endometroid carcinoma reported in patients of 50 & 55 years of age with an incidence of 0.43%. 0.82% incidence was reported by Rajgopalan et al (1982).

3 cases of mixed epithelial tumours constituted 0.64%, which is comparable to the 0.3% incidence reported by Verma & Bhatia (1981).

There was 1 (0.21%) case of Brenner tumour which was benign and unilateral. Verma & Bhatia (1981) reported 0.8% incidence.

Granulosa cell tumours constituted 14 cases (3.01%) a finding similar to 3.33% reported by Tyagi et al (1967) and Kalra et al (1982). Age range was 20-60 years with its peak in 3rd decade. 13 of them were unilateral and 1 bilateral. Consistency was mixed in 10 tumours, solid in 3 and cystic in 1.

TABLE II

Table showing pattern of Sexcord stromal & Lipid Cell Tumours

Morphological Types	No.	%	Consistency			Unilateral	Bilateral
			Solid	Cystic	Mixed		
<b>I. SEX CORD STROMAL TUMOURS</b>	20	4.29%	-	-	-	-	-
<b>A. Granulosa Stromal tumours</b>							
1. Pure granulosa tumour	14	3.01%	03	01	10	13	01
2. Thecoma-fibroma Group							
a. Thecoma	01	0.21%	01	-	-	01	-
b. Fibroma	02	0.43%	02	-	-	02	-
B. Sertoli Leydig Cell tumor	03	0.64%	01	-	02	03	-
C. Gynandro Blastoma	-	-	-	-	-	-	-
D. Unclassified	-	-	-	-	-	-	-
<b>II. LIPID CELL TUMOURS</b>	-	-	-	-	-	-	-

There were 2 cases of fibroma which were solid and unilateral. Similar incidence has been reported by Verma & Bhatia (1981).

#### Sexcord Stromal Tumours Table II

One case of Thecoma and 3 cases of Sertoli-Leydig cell tumor were observed in the study. 1 case showed features of virilization.

moid cyst) and formed the 3rd commonest group in this study. Similar incidence (12.83%) has been reported by Tyagi et al (1967). Most of the cases were in 3rd decade. Grossly 56 were cystic, 16 mixed and 1 solid in consistency. The heaviest tumor of 3000 gm, having nodules on its surface has been reported. 4 of them were bilateral. Microscopically mature derivatives of all the

TABLE III

Table showing pattern of Germ Cells & Other Tumours of Ovary

Morphological Types	No.	%	Consistency		Unilateral	Bilateral
			Solid	Cystic Mixed		
<b>I. GERM CELL TUMOURS</b>	85	18.29%	-	-	-	-
A. Dysgerminoma	14	3.01%	01	13	13	01
B. Endodermal sinus tumor	02	0.43%	-	02	02	-
C. Embryonal Carcinoma	01	0.21%	-	01	-	01
D. Teratoma-						
a. Mature	63	13.57%	01	56	59	04
b. Immature	04	0.86%	01	03	04	-
E. Struma Ovarii	01	0.21%	-	01	01	-
F. Carcinoid	-	-	-	-	-	-
<b>II. METASTATIC TUMORS</b>						
A. Krukenberg Tumors	05	1.07%	04	01	04	01
B. Others	01	0.21%	01	-	01	-
<b>III. MISCELLANEOUS</b>	01	0.21%	01	-	01	-

#### Dysgerminoma

14 cases of Dysgerminoma were reported (3.01%) Tyagi et al (1978) reported 3.08% and Jagdehwari et al (1972) 3.4% cases of Dysgerminoma. Age range was 4-30 years being commonest in 2nd decade, 13 of them were of mixed consistency and 1 solid. 1 case had a bilateral tumor also.

#### Teratoma

Teratoma comprised of 63 cases (13.5%) All of them were mature cystic teratoma (Der-

three germ layers were present.

Out of 4 (0.86%) cases of malignant teratoma 1 was solid and 3 had mixed consistency. Age ranged from 16-45 years similar incidence (0.5%) was reported from by Verma & Bhatia 1981. Histology revealed jumbled appearance of immature tissues of all the three germ layers in 3 cases, while in 1 case there was immature tissue showing malignant transformation.

1 case of struma ovarii constituted monodermal type of dermoid cyst, unilateral and

cystic. Microscopically tumor consisted of colloid filled follicles. Philips and Kaur (1965) reported 2 cases of *Strauma ovarii* from Amritsar.

**Others**

Endodermal sinus tumors constituted 0.43% with only two cases. Age range was 15-17 years. Higher incidence has been reported by Jagdishwari et al (1972).

There was only 1 (0.21%) case of embryonal carcinoma. Similar findings have been reported by Verma & Bhatia (1981).

**Metastatic Tumours (Table III)**

6 cases of (1.28%) Krukenberg and secondaries from other tumors were seen. One case of Krukenberg tumor was bilateral. Ramchandran et al (1972) reported 1.22% incidence of metastatic tumors.

**Miscellaneous**

Only one case of carcinosarcoma has been seen in the present study with 0.21% incidence.

0.22% incidence of carcinosarcoma has been reported by Ramchandran et al (1972).

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II. METASTATIC TUMORS

Author	Year	Incidence (%)
A. Krukenberg Tumors	1972	1.22
B. Others	1972	0.21
III. MISCELLANEOUS	1972	0.21