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"HISTOPATHOLOGICAL SPECTRUM OF OVARIAN TUMOURS; AN OBSERVATIONAL STUDY IN TERTIARY CARE CENTRE"

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ABSTRACT:-

INTRODUCTION-

A wide spectrum of pathological conditions – non-neoplastic and neoplastic can be seen in the ovary in routine surgical pathology. Ovarian cancer seems to be the most deadly gynecologic malignancy, and it is diagnosed late in the disease's clinical path due to a lack of early signs and screening protocols The incidence and prevalence of ovarian cancer vary in different geographical areas of the country. It is the seventh most common cancer diagnosis, with a global prevalence rate of 6.3/100,000 women. With an age-standardized incidence rate of 10.9%.Most patients (75%) have advanced-stage tumors, with a dismal 5-year survival rate of only 30%.

METHODOLOGY-

Relevant data like clinical presentation, age of the patient was collected in a proforma, gross observation of the specimens received was done. For proper fixation, tumours were cut serially at 1cm thickness. The specimens were fixed in 10% formalin for 24-48 hours. After fixation, sections were given from representative areas. Sections were cut at 4-5 micrometre thickness & stained with H&E. All details of the specimen consisting of gross features, microscopic features and final diagnosis were studied.

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RESULTS-

The mean age of cases is 39.19 years, 73.87% cases are benign followed by 21.62% cases are malignant and 4.50% are borderline. Majority of tumours are Surface Epithelial Tumour (60.36%) followed by Germ Cell Tumour (27.93%), Sex Cord Stromal Tumour (9.91%) and Metastatic Tumour (1.80%), 93.69% has unilaterality and 6.31% has bilaterality,surface epithelial tumour 55.22% has serous tumour, 42.38% has mucinous tumour, and only 1 case of Benign Brenner tumour.

CONCLUSION-

Ovary is a common site of neoplasia in the female genital tract and usually presents with a variety of clinic morphological and histological features. However, benign tumours are far more common than their malignant counterparts with epithelial tumours being the commonest, followed by germ cell tumours. As most of the malignant ovarian tumours present late, development of methods for early diagnosis is a pressing need today. The relative frequency of incidence of ovarian tumours.

Keywords: Ovary; Ovarian tumors; Histolopathological spectru; Stromal cells

INTRODUCTION

Depending on the type of the ovarian tissue where the neoplasm develops, ovarian tumors are classified into three primary classes: Epithelial tumors 76 %, germ cell tumors 16 %, and sex cord-stromal tumors 8 %.[1]Surface epithelial tumors constitute the large majority of ovarian neoplasms and, their malignant forms, account for almost 90% of ovarian cancers. Germ cell and sex cord-stromal cell tumors are comparatively less common; although they account for 20–30% of ovarian tumors, they are collectively responsible for <10% of ovarian malignancies.[3] The ability of ovarian tumors to undergo peritoneal metastasis in the absence of invasive development in the ovary is one of their

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distinguishing features. This has given rise to the idea of borderline tumors, which have strict histologic parameters and are unaffected by their metastatic peritoneal equivalent.[4]

The initial treatment includes abdominal exploration, staging and resection of all grossly identifiable disease. Ovarian tumours cannot be confidently distinguished from one another on the basis of their clinical, radiological or gross characteristics alone. Chemotherapy and radiotherapy may be highly specific for a single type of neoplasm. Hence, accurate histological diagnosis is critical to achieve an optimum treatment response. Even though immunohistochemical and chromosomal studies have made diagnosis and differentiation of tumours easier, in developing countries like India, cost effective histomorphological studies still form the backbone of diagnosis of these tumours.[2]

The epithelial ovarian cancers are made up of eight histologic subtypes with different cellular origin, pathogenesis, gene expression and response to treatment.[6,7,8] The most common type, serous cyst adenocarcinoma with two distinct subtypes may be arising from the fallopian tube epithelium. The high grade serous accounts for 85% of the epithelial ovarian cancers and up to 80% of ovarian cancers generally.[9] It is the most challenging in terms of treatment outcome. Mucinous adenocarcinomas have cells similar to the cervical epithelium, endometrioid cancer cells resemble the endometrium, while Brenners tumors have transitional epithelium akin to that of the bladder[10]

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MATERIALS AND METHODS

Relevant data like clinical presentation, age of the patient was collected in a proforma. For specimens of ovarian tumours from October 2021 to October 2022, gross observation of the specimens received was done. This study was approved by institutional ethical committee. For proper fixation, tumours were cut serially at 1cm thickness. The specimens were fixed in 10% formalin for 24-48 hours. After fixation, sections were given from representative areas. Sections were cut at 4-5 micrometre thickness & stained with H&E.

All details of the specimen consisting of gross features, microscopic features and final diagnosis were studied. World Health Organization classification was used for classifying the tumours. Analysis of the data was done to find out the incidence of various types of tumours, age of presentation of various tumour types, gross features and histopathological patterns of individual tumour types. Incidence of benign versus malignant tumours was studied

(A) INCLUSION CRITERIA:

1. All the ovarian tumours, irrespective of their clinical features, clinical stage of the disease or type of surgical procedure implemented were included.
2. Hysterectomy specimens with incidental ovarian tumours was also be included.

(B) EXCLUSION CRITERIA:

1. Non neoplastic ovarian lesions like simple ovarian cysts and polycystic ovaries were excluded.
2. Unfixed specimens.

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RESULTS

Distribution of cases according to histological types of tumours

Histological types of tumours	Surface epithelial tumour (n=67)		Germ cell tumour (N=31)		Sex cord stromal tumour (n=11)		Metastatic tumour (N=2)		total	
	N	%	N	%	N	%	N	%	N	%
Benign	54	80.60	22	70.97	6	54.55	0	0	82	73.87
Borderline	5	7.46	0	0	0	0	0	0	5	4.50
Malignant	8	11.94	9	29.03	5	45.45	2	100	24	21.62
Total	67	100	31	100	11	100	2	100	111	100

Here, out of surface epithelial tumours 80.60% are benign followed by 7.46% borderline and 11.94% malignant. Out of total germ cell tumours, 70.97% are benign and 45.45% are malignant. Out of total sex cord stromal tumour 54.55% are benign and 45.45% are malignant. And, out of Metastatic tumour all are malignant.

Association of type of tumour with age.

Age Group	Benign		Borderline		Malignant		Total	
	N	%	N	%	N	%	N	%
≤20 years	4	4.82	0	0	4	17.39	8	7.21
21-30 years	27	32.53	1	20	3	13.04	31	27.93
31-40 years	25	30.12	3	60	2	8.70	30	27.03
41-50 years	9	10.84	0	0	5	21.74	14	12.61
51-60 years	10	12.05	0	0	3	13.04	13	11.71
≥61 years	8	9.64	1	20	6	26.09	15	13.51
Total	83	100	5	100	23	100	111	100

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Out of total malignant cases, majority are in age group ≥61 years (26.09%) followed by 21.74% in 41-50 years, 17.39% in age group ≤20 years.

Similarly, out of total Benign cases majority are in age group 21-30 years (32.53%) followed by 30.12% in 31-40 years, 12.05% in 51-60 years.

And, out of total borderline tumour, majority in age group 31-40 years (60%) followed by 20% in 21-30 years and ≥61 years.

. DISCUSSION

In our study out of total cases majority has Mature cystic teratoma (19.82%) followed by 18.02 has Mucinous cystadenoma and Serous cystadenoma each, 7.21% has Serous cystadenofibroma, 3.60% has High grade serous adenocarcinoma, Fibroma, Granulosa cell tumor and Mucinous cystadenofibroma each, 2.7% has Borderline mucinous ovarian tumor and Yolk sac tumor each, 1.8% has, Bilateral serous adenocarcinoma ovary, Borderline serous cystadenoma, Mucinous cystadenocarcinoma, Dysgerminoma, Immature teratoma and Metastatic adenocarcinoma bilateral ovaries each, 0.90% has Benign Brenner tumor, Bilateral ovarian serous cystadenofibroma, Choriocarcinoma, Mixed germ cell tumor, Poorly differentiated sertoli leydig cell tumor, Sclerosing spindle cell tumor of ovary and Sex cord stromal tumor

In comparison to our results Bashir et al[5] reported that among the individual neoplasms, serous tumours were the commonest (59.7%), followed by teratomas (13.4%), mucinous tumours (12.6%), metastatic tumours (5.9%) and dysgerminomas (1.7%). One case each of endometriod carcinoma, clear cell carcinoma, mixed epithelial carcinoma, thecoma, fibroma, yolk cas tumour, struma ovarii and lymphangioma was also reported.

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CONCLUSIONS

Ovary is a common site of neoplasia in the female genital tract and usually presents with a variety of clinicomorphological and histological features. However, benign tumours are far more common than their malignant counterparts with epithelial tumours being the commonest, followed by germ cell tumours. As most of the malignant ovarian tumours present late, development of methods for early diagnosis is a pressing need today. The relative frequency of incidence of ovarian tumours. Based on the results of this study it is evident that early diagnosis is crucial to help in decreasing morbidity and mortality among these patients

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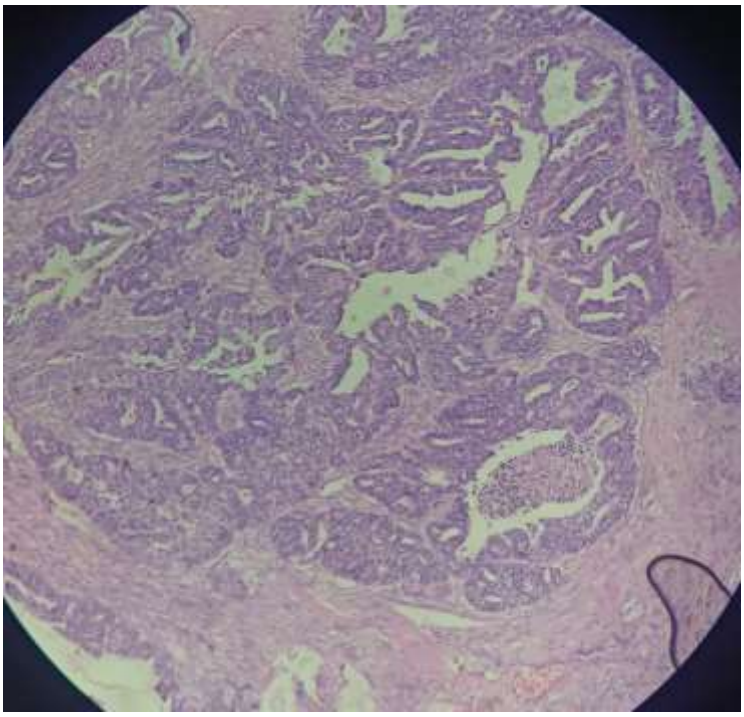
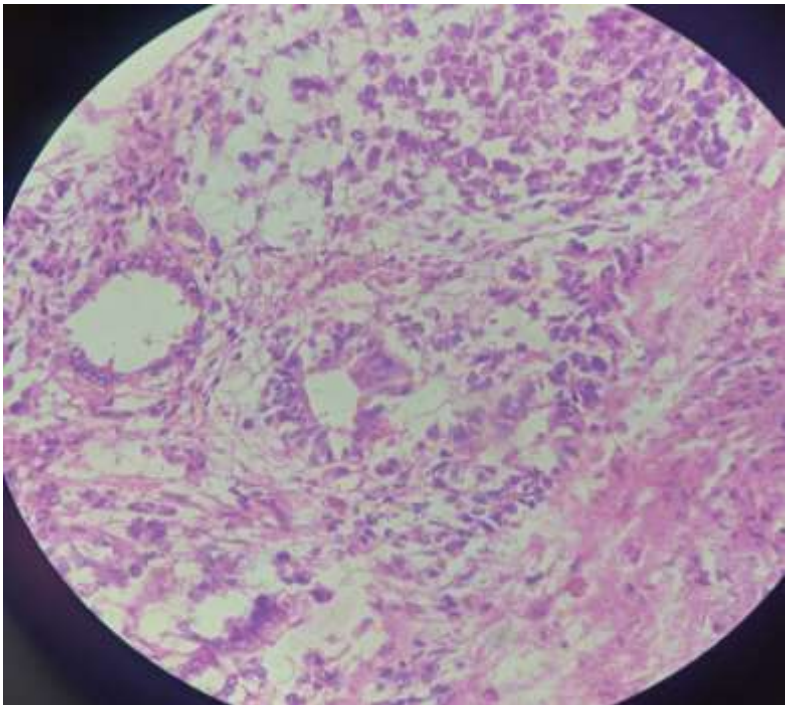
IMAGES



High grade serous carcinoma showing papillary branching, glandular pattern, significant nuclear atypia (H&E, 10x)



Yolk sac tumor showing schiller-duval bodies (H&E,40x)