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Research Article

TO STUDY CLINICO-HISTOPATHOLOGICAL PATTERN OF OVARIAN TUMORS AND TUMOR LIKE LESIONS

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ABSTRACT

Tumors of ovary exhibit a variety of spectrum of histopathology more than any other organ. Ovarian tumors and tumor like lesions of ovary frequently form pelvic masses and are associated with hormonal manifestations. Clinically or surgically they can mimic malignancy but pathologically they could be benign tumors or tumor like lesions. A retrospective and prospective study for a period of 2 Years in 428 ovarian specimen in the Department of Pathology, SLIMS, Pondicherry. Total 268 cases (63%) were tumor like lesion and 160 cases (39%) were neoplastic lesion of ovary. The most common benign lesion was serous cystadenoma (50%) of all ovarian lesion followed by benign cystic teratoma (16.87%). The most common malignant lesion was serous cyst adenocarcinoma (7.5%) followed by mucinous cystadenocarcinoma (1.8%). Most common presenting complain was mass per abdomen and abnormal vaginal bleeding. Most common affected age group was 21 to 50 years. Most common ovarian tumor was surface epithelial tumor. In benign serous cyst adenoma and in malignant serous cystadenocarcinoma was common. In tumor like lesion follicular cyst was usually seen in ovarian specimens.

Keywords :-Histopathology, Ovarian lesions, Ovarian neoplasm, Histopathology, Clinical presentation.

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INTRODUCTION

Ovarian tumors and tumor like lesions can occur at any age and they present as major health problems in women. Ovarian masses are common forms of neoplasms in women and form some of the most challenging cases in Gynaecology. Ovarian tumors that present in the reproductive age group are mostly benign while about 30% in the postmenopausal age group are malignant. Ovarian tumors also present in a wide spectrum of histopathological patterns. Many ovarian tumors are asymptomatic in the early stages and are unfortunately diagnosed in the advanced state. The high mortality rate of ovarian cancer is due to its late detection, thus earning itself the term Silent Killer. Ninety percent of adnexal masses are detected by pelvic ultrasound. This provides the clinician information about the origin of the adnexal mass. Further, details of the tumor like its complexity, its vascularity and consistency are made out on ultrasound imaging. The definitive diagnosis of the tumor however is by histopathological study. [1-5]

Their clinical presentation is highly variable ranging from asymptomatic patient to patient presenting with nonspecific symptoms [1] such as abdominal mass, ascites, bloating, back pain, urinary urgency,constipation and tiredness or more specific symptoms such as pelvic pain, abnormal vaginal bleeding or involuntary weight loss. [2,3,4] Some of the lesions can be hormonally active so they can give rise to signs and symptoms of a hormone secreting tumor. The most dreaded lesions are the malignant tumors of the ovary which is the fifth leading cause of death in women and the leading cause of death

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from gynaecological cancer [5].

MATERIAL AND METHODS

This study was done in the Department of Pathology, SLIMS,Pondicherry for a period of 2 Years ie 6 months retrospective from January to June 17 and one and half years prospective from July 17 to December 2018.The received gross specimen was fixed in 10 % formalin for 24 hours and from every specimen multiple sections were taken from representative site for histological examination. Sections were processed in automated tissue processor after which their paraffin blocks were made and section was cut at 3 to 5 micron thickness and stained with hematoxylin and eosin stain. The sections were examined microscopically for histomorphological diagnosis can be made.

RESULTS

Table-1: Result of Histopathological Examination of Ovarian Specimens (Overall Study)

Table 2: Distribution of Various Tumors

Figure b

[Fig-1a, b]: Serous cystadenoma. a. cut section shows unilocular cyst with papillary excrescences. b. Histology showing a simple cyst lined by a single layer of columnar epithelium resting on a fibrocollagenous stroma (H & E, 20X) [Fig-2a, b]: Papillary serous cystadenocarcinoma. a. Cut section shows cyst with intra-cystic papillary excrescences and complex branching papillae. b. Histology shows papillary architecture with thick fibrovascular core, stratification and nuclear pleomorphism (H & E, 40X).

Table-3: Age Wise Distribution of Various Tumors of Ovary

Out of 160 cases, 120 cases were found between 21 to 50 years age group. In germ cell tumor, mature teratoma was most common tumor with 27 cases followed by dysgerminoma with 3 cases and yolk sac tumor with 1 case. Sex cord stromal tumor comprised of 2.5% of all tumor lesion with 2 cases of granulosa cell tumor, 1case of thecoma and 1 case of thecoma-fibroma. Two cases of metastatic lesion of krukenberg tumor and undifferentiated adenocarcinoma were noted. Out of 268 cases of tumor like lesions most common was follicular cyst with 94 cases followed by hemorrrhagic cyst (66 cases), luteal cyst (58 cases), simple serous cyst (40 cases), other inflammatory conditions and endometriosis with 10 cases. In this study mass per abdomen was the commonest presenting symptom in 39.25% followed by abnormal vaginal bleeding in 28% and pain abdomen in 19.8%.

Table 1: Result of Histopathological Examina- Tion of Ovarian Specimens (Overall Study)

	No. of Cases	Percentage (%)
Benign tumors	136	31.76%
Borderline tumor	03	0.70%
Malignant tumor	21	4.90%
Tumorlike lesions	268	62.62%
Total No.of speci- mens	428	100.00%

Table-2: Distribution of Various Tumors

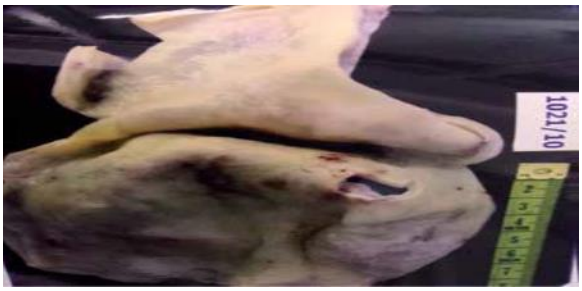
TUMORS	**No. of cases**	**Percent- age**
SURFACEEPITHELIALTUMORS		
Serous Tumors		
Serous cystadenoma	80	50.00
Borderline Serous Tumor	03	01.86
Serous Cystadenocarcinoma	12	07.51
Serous Cyst adenofibroma	08	05.00
Mucinous Tumors		
Mucinous Cyst adenoma	15	09.36
Borderline Mucinous Tumor	00	00
Mucinous Cyst adenocarcinoma	03	01.86
Others		
Brenner Tumor	01	00.61
Mesonephroid Tumor	00	
Endometroid Tumor	01	00.61
Mixed Mullerian Tumor	00	00
Clear Cell Tumor	00	00

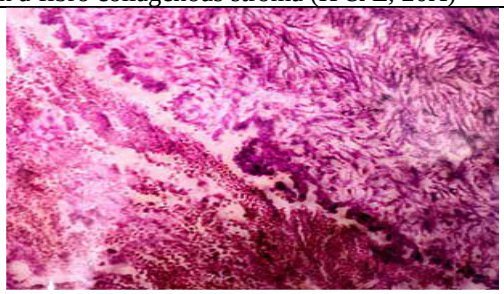
Mixed (mucinous+ Serous)	00	00
SEXCORDSTROMALTUMOR		
Granulosa Cell tumor	02	01.25
Thecoma Fibroma	02	01.25
Malignant Sex Cord Stromal Tumor	00	00
Andro blastoma	00	00
GREM CELL TUMOR		
Teratoma (Dermoid Cyst)	27	16.86
Struma Ovarii	00	00
Endodermal Sinus Tumor	01	00.61
Dysgerminoma	03	01.86
Choriocarcinoma	00	00
METASTATIC LESION	02	01.25
MISCELLANEOUS	00	00
TOTAL	160	100

Tables 3: Age wise distribution of various tumors of ovary

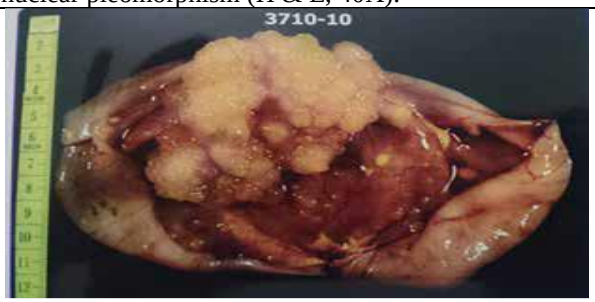
Age groupin years	Surface epithelial tumor	Germcell tumor	Sexcord stromal tumor	Metastatic tumor	Total
11-20	5	3	-	-	8
21-30	23	12	2	-	37
31-40	37	6	-	-	43
41-50	29	9	1	1	40
51-60	15	1	1	-	17
61-70	8	-	-	1	9
71onward	6	-	-	-	6

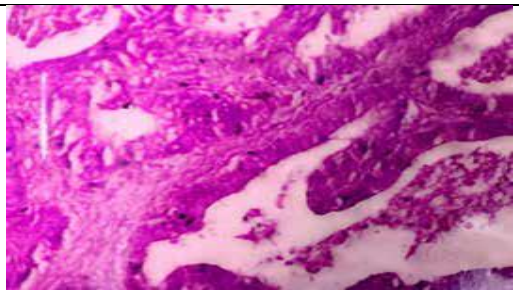
[Figure-1a,b]: Serous cystadenoma. a. cut section shows unilocular cyst with papillary excrescences. b. Histology showing a simple cyst lined by a single layer of columnar epithelium resting on a fibro collagenous stroma (H & E, 20X)





[Figure-2a,b]: Papillary serous cystadenocarcinoma. a. Cut section shows cyst with intra-cystic papillary excrescences and complex branching papillae. b. Histology shows papillary architecture with thick fibrovascular core, stratification and nuclear pleomorphism (H & E, 40X).





DISCUSSION

Ovaries are paired organs in the female reproductive system which can undergo various changes throughout an individual's life under the effects of different hormones. This could lead to different types of diseases,benign or malignant.For a clinician, the practical method for screening for an adnexal mass is a bimanual pelvic examination done routinely in the outpatient department. Tumor markers also help in the identification of ovarian masses. Adjunctive diagnostic techniques like MRI and CT help further in identifying metastasis of the tumor. Recent statistics in developed countries report better survival rates in patients with ovarian tumors; this being due to early detection and early appropriate treatment.[6]

The ovary is a female genital organ with complex anatomy and physiology influenced by various hormones. The different cell types in the ovary are capable of giving rise to different groups of tumours. Ovarian cancer is one of the leading causes of death in females. In the case of ovarian tumours, benign tumours outnumber malignant tumours. Almost 80% of ovarian neoplasms are benign, and it is also a common site for primary malignancy; metastasis to the ovaries can also occur. Nulliparity, a family history of cancer, and genetic mutations are some of the risk factors associated with the development of ovarian neoplasms. The high death rates are due to advanced malignancy at the time of diagnosis in the majority of the cases. Ovarian tumours are thus a group of neoplasms with a diverse spectrum of features. The WHO classified this wide spectrum of ovarian tumours into surface epithelial tumours, sex cord-stromal tumours, giant cell tumours, metastatic, and miscellaneous tumours. The present study was conducted to study the frequency of various histological types of ovarian tumours based on the WHO classification [7], the age distribution of these tumours, and the importance of these histological patterns in diagnosis and treatment.

Developed countries show ovarian carcinoma as the cause of 30% of malignancies of the female genital tract.(8) In this study, out of 140 ovarian lesions, 96.4% were benign (135/140), 2.8% (4/140) were malignant and0.7% (1/140) were borderline malignant tumor. Benign ovarian neoplasms were seen similarly in both reproductive and perimenopausal age groups. [8] Malignant tumors were all in the postmenopausal group. Based on histopathology, most common neoplasm was surface epithelial tumors serous tumors, then mucinous and germ cell tumors. Most common non-neoplastic lesion was endometriotic cysts. Ovarian masses were more on the right side with only few showing bilateral involvement. Menstrual problems and abdominal pain were the common clinical presentation seen [9-12].

In this study incidence of surface epithelial tumor (76.87%) was highest followed by germ cell tumor (19.37%), sex cord stromal tumor (2.5%) and lastly metastatic tumor (1.25%) similar to other studies. Incidence of serous cystadenoma (50%) was much higher similar to Maheshwari et al (32.21%) (12) and (26.82%). Incidence of Borderline Serous tumor was 1.87% comparative with the (1.41%). Incidence of serous cystadenocarcinoma forming 7.5% correlated closely with that of (7.31%) (10). Incidence of mucinous cystadenoma was 9.37% similar to R. Jha & S. Karki (12.8%). Incidence of Mucinous cystadenocarcinoma was 1.87% lower than other studies. Incidence of Brenner tumor forming 0.62% similar to (12) (0.70%). Incidence of Endometrioid tumor (0.62%), similar to (11) (0.70%). Incidence of Granulosa cell tumor (1.25%) close to. Incidence of fibro thecoma was 1.25%. Incidence of Benign Cystic Teratoma was 16.87% correlated with [13] Incidence of Dysgerminoma comprised of 1.87% of all ovarian tumors which can be correlated with Shah et al (0.54%) [14]. Incidence of Endodermal sinus tumor was 0.62% similar to R.Jha and S.Karki. Similar to this study, other studies also show that most ovarian tumors occur in women of reproductive age group. Peak incidence of ovarian tumor is between 21- 50 years.

Tumor-like lesions were more common than ovarian tumors mimicking ovarian neoplasm. Surface epithelial tumors were the commonest ovarian tumors followed by Germ Cell Tumors and sex cord stromal tumors in this part of country. Ovarian neoplasms usually present with a variety of clinicomorphological and histological features. The most common neoplasm observed in the ovary is surface epithelial tumors, which are benign lesions that commonly affect reproductive age groups. Newer advancements like immunohistochemistry (IHC) and genetic studies have made the diagnosis easier and more precise. However, in institutes with limited resources, a histopathological study is still the gold standard in the diagnosis and prognostic evaluation of these tumors.

The wide spectrum of ovarian tumours presents diagnostic challenges. Effective therapeutic management of ovarian malignant tumours continues to be a challenge for clinicians. Histopathological examination remains crucial in diagnosis. Accurate histopathological diagnosis, combined with clinical staging, facilitates prompt and appropriate treatment and timely patient management.

CONCLUSION

Most common ovarian tumor was surface epithelial tumor. The most common benign lesion was serous cystadenoma (50%) of all ovarian lesion followed by benign cystic teratoma (16.87%). The most common malignant lesion was serous cyst adenocarcinoma (7.5%) followed by mucinous cystadenocarcinoma (1.8%). Most common presenting complain was mass per abdomen and

abnormal vaginal bleeding. Most common affected age group was 21 to 50 years. Ovary exhibit a variety of histopathological spectrum; therefore, routine histopathological examination is very important for diagnosis of ovarian tumors. Malignant ovarian tumours are known for high mortality, and the prognosis depends on categorisation and staging, which will help the clinician to plan timely management, especially with targeted therapy.

The wide spectrum of ovarian tumours poses diagnostic challenges. Benign tumours were found to be more common than malignant ones in all age groups. Malignant ovarian tumours were most common in the age group of over 50. Surface epithelial tumours were the commonest ovarian tumours, followed by germ cell tumours, as observed in other studies. Effective therapeutic management of ovarian malignant tumours continues to be a challenge for the clinician. Histopathological examination still remains the mainstay in the diagnosis. An accurate histopathological diagnosis, combined with clinical staging, helps in prompt and appropriate treatment and timely management of the patient. Early diagnosis is difficult due to its asymptomatic nature, inaccessible site and the limited use of various new techniques like cytology and biopsy. Thus, ovarian neoplasm offers a good field for research. Differentiation of a benign tumor from a malignant one is important for determining management and prognosis; hence further similar studies are warranted.

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