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Original Research Article

Histopathological Study of Ovarian Tumors in Tertiary Care Center

Priya Parmar[1*], Sangita Sehgal[2], Kusum Mathur[3], Ajay Yadav[4]

[1*]Resident, [2]Professor, [3]Senior Professor & Head, [4]Senior Professor,
Department of Pathology, S.M.S. Medical College, Jaipur, Rajasthan, India.

ABSTRACT

Background: Ovarian tumors are second most common tumors of female genital tract. Ovarian tumors are 5th leading cause of cancer deaths, among Indian women. Incidence rate of ovarian tumors in India was 10.2/100,000 females in 2013. Ovarian neoplasm manifest with a wide variety of clinical, morphological and histological features.

Objectives: Aim of study was to examine various histopathological patterns, age incidence and clinicopathological correlation of ovarian tumors at tertiary care center.

Material & Methods: The present study was prospective study conducted in department of pathology SMS Medical College & Hospital, Jaipur, Rajasthan, from January 2015 to March 2016.

Results: Of the 150 cases of ovarian tumors analysed, 103 (68.66%) were benign, 3 (2%) were borderline and 38 (25.33%) were malignant. Histopatholgically surface epithelial tumors were the commonest 93 (62.0%) followed by germ cell tumor 37 (24.67%) and sex cord stromal tumors 14 (9.33%). Benign tumors were commonest in 21to 30 years of age group while borderline in 61-70 years and malignant tumors in 41-50 years of age group.

Conclusion: It is concluded from this study that on morphological grounds, tumors originating from surface epithelium are the most common histopathological type of ovarian tumor. Benign tumors are more common than malignant ones in all age groups.

Key words: Ovarian Tumors, Benign, Malignant.

INTRODUCTION

Ovarian tumours represent about 30% of all cancers of the female genital system.[1] Ovarian tumours often go undetected and present at a later stage. This is due to their location, lack of early screening modalities and, lack of specific symptoms and signs suggestive of malignant nature.

The poor survival is due to the fact that they do not clinically manifest early and approximately 60-70% of the neoplasm present as either stage III or stage IV.[2]

The advanced stage at presentation of ovarian cancers results in a low mean 5 year survival rate and a poor prognosis.[3] Ovarian tumors are notorious for their large size and their frequent association with relatively mild symptoms.[4]

About 30% of ovarian neoplasms in postmenopausal women are malignant; whereas only about 7% of ovarian epithelial tumors in the premenopausal women are frankly malignant.[5]

Risk factors for ovarian cancer are not well rcognized. However, there is general agreement between two: nulliparity and family history.[4]

Identification of various histologic patterns of ovarian tumours is important for diagnosis as well as prognosis. The aim of study was to examine various histopathological patterns, age incidence and clinicopathological correlation in ovarian tumors in tertiary care center.

MATERIALS AND METHODS

This is a prospective study of 150 cases was carried out in the Department of Pathology, Swai Man Singh (S.M.S.) Medical College and Hospital, Jaipur, Rajasthan, India from January 2015 to March 2016.

The oophorectomy specimens were allowed to fix in 10% buffered formalin for 24–28 hours. After fixation multiple sections were taken from representative areas of the tumor and the accompanying tissue. Special attention was given to solid areas adjacent to the ovarian surface and areas of papillary projections. They were processed for histopathological examination and paraffin blocks were made. The blocks were cut at 3–5 μm thickness and stained with hematoxylin and eosin stain. The WHO classification of ovarian tumours (2003) was used for classifying the tumors.[5] Special stains were employed wherever needed. The demographic data regarding age, sex, chief complains, clinical examination, radiological investigation retrieved from histopathological records and requisition form.

Table 1: Distribution & Percentage of Ovarian Tumors

Type of tumors	No. of cases	Percentage
Benign tumor	103	68.66
Borderline tumor	3	2.00
Malignant tumor	38	25.33
Metastatic	6	4.00
Total	**150**	**100**

Table 2: Distribution & Percentage of ovarian tumors according to histological type

S. No.	Type of tumor	No. of cases	Percentage
1	**Surface epithelial tumors**	93	62.0
2	**Sex-cord stromal tumors**	14	9.33
3	**Germ cell tumors**	37	24.67
4	**Metastatic tumor**	6	4.00
	Total	**150**	**100**

Table 3: Histologic types and percentage distribution of ovarian tumors

S. No.	Type of ovarian tumor	No. of cases out of 150 cases	Percentage %
I	**Surface epithelial tumors**	**93**	**62.00**
A	**Serous tumors**	**57**	**38**
	Benign	39	26
	Borderline	2	1.33
	Malignant	16	10.66
B	**Mucinous tumors**	**33**	**22**
	Benign	25	16.66
	Borderline	1	0.66
	Malignant	7	4.6
C	**Endometrioid tumor**	1	0.66
D	**Brenner tumor**	1	0.66
E	**Clear cell tumor**	1	0.66
II.	**Sex cord stromal tumor**	**14**	**9.33**
	Granulosa cell tumor	6	4
	Fibroma	6	4
	Sex cord stromal tumor unclassified	1	0.66
	Sertolileydig cell tumor	1	0.66
III.	**Germ cell tumors**	**37**	**24.67**
	Dysgerminoma	2	1.33
	Benign cystic teratoma	30	20
	Immature teratoma	3	2
	Struma – Ovarii	2	1.33
IV.	**Metastatic tumor**	**6**	**4**

RESULTS

In this study 150 ovarian tumors were analysed. Out of these 144 (96%) were primary tumors and 6 (4%) were metastatic.

Amongst primary ovarian tumors, 103(68.66%) were benign, 3 (2%) were borderline and 38 (25.33%) were malignant. [Table 1] Histologically, surface epithelial tumors were the most common 93 (62.0%) followed by germ cell tumors 37(24.67%), sex cord–stromal tumors14 (9.33%) and metastatic tumors 6 (4.0%). [Table 2] About two-third of all benign neoplasms were seen between the age group of 21 to 40 years, whereas two-third of all malignant ovarian neoplasms were seen after the age of 40 years. Peak incidence occurring in 21–40 years age group. In present study most common presenting complain in patients was lower abdominal pain followed by abdominal mass and menstrual disturbances.

Most of the tumors were cystic (71, 47.33 %). Among them benign and borderline were more commonly cystic while malignant tumors were solid in consistency.

The most common epithelial tumors were serous 57 cases, (38.00 %) followed by mucinous 33 cases, (22.00%). Out of 37 germ cell tumors, benign cystic teratoma was the most common, comprised of 30 cases, (20.00%). Among sex cord–stromal tumors the most common tumor was granulosa cell tumor and fibroma 6 cases (4.00%) each.

In present study 3 borderline tumors were found, 2 cases (1.33%) were borderline serous cyst adenoma and 1case (0.66%) of borderline mucinous cyst adenoma.

Serous cystadenoma was the most common benign tumor comprised of 35 cases (33.98%) of cases. Papillary serous cystadenocarcinoma 12 cases (10.52%) were the most common malignant tumors.

DISCUSSION

Out of the150 cases of ovarian tumors, 68.66% were benign, 2.0% were borderline, and 25.33% were malignant. Histologically, surface epithelial tumors (62 %) were most common type of ovarian tumor.Following is the percentage of germ cell tumors (24.67%), sex cord stromal tumors (9.33%) and metastatic tumors (4%) in our study. Similar results were found in studies of Pilli[6] et al, Nalini[7] et al, kayastha[8] et al, Ameena[9] et al, Bhagyalaxmi[10] et al and Geeta[11] et al in their studies also.

In present study the commonest epithelial tumors were serous cystadenoma followed by mucinous cystadenoma. Whereas commonest germ cell tumor was benign cystic teratoma in the present series. Similar observations were made by Nalini[7] et al and Geeta[11] et al.

According to Santosh kumar[12] et al, A. bhagyalaxmi[10] et al and Geeta[11] et al a peak age incidence of benign neoplasm was between age of 21 to 40 years. While in the present study peak age incidence for benign neoplasm was 21 to 30 year of age group. For borderline neoplasm in our study age incidence was higher than other studies that are 61-70 years while in other studies it was between 21-40 years.

While the age incidence for malignant neoplasm was 41-50 years in our study which was similar to age incidence seen in studies of Kayastha[8] et al, Santosh[12] et al, A. bhagyalaxmi[10] et al and Geeta[11] et al.

Benign tumors were more often cystic in consistency in our study, which was comparable to the results of Kanthikar[13] et al and Geeta[11] et al. and malignant tumors were of solid consistency which was also comparable to the study of Kanthikar[13] et al and Geeta[11] et al.

Menstrual irregularities were seen in (29.33%) of the patients in the present study and constitutional symptoms were seen in (5%) cases which are lower than other studies. Thus, clinically ovarian tumors were recognized only after they attained considerable size and produce pain abdomen and pressure effects or spread to contiguous structures of the ovary.

CONCLUSION

The ovarian tumours in our institute represented a wide histological spectrum. The frequency distribution of the tumours was similar to reports available in literature. The single most common tumour was serous cystadenoma in our study. As the natural history, treatment modalities and prognosis of ovarian neoplasms differ, the histomorphological study remains the gold standard.

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