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Retrospective study of histopathological spectrum of Ovarian neoplasm in a tertiary care centre

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Abstract

Introduction

Ovarian neoplasms comprises 23% of all gynaecological tumors. They are common tumors in female and ovaries are a common site for benign and malignant neoplasm. This retrospective study aimed to study spectrum, frequency and age distribution with clinicopathological correlation of ovarian tumor.

Material and method

This is a two-year retrospective study carried out in department of pathology National Institute of Medical sciences and Research, Jaipur (Rajasthan) from 1 June 2020 – 31 May 2022 .

Result

Total 52 ovarian neoplasm were included in this study. It was found that right side (59.60%) was more commonly involved by tumors than left side (40.3%). Most benign ovarian tumors were seen in age group of 21-30 years and malignant ovarian tumors in 61-70 years of age group.The age group ranged from 21 - 70 years. In young patients benign serous cystadenoma was most commonly found. And in old patients mucinous adenocarcinoma was most common.

Conclusion

The ovarian tumors in our institute represented a wide histological spectrum. As the natural history, treatment modalities and prognosis of ovarian neoplasms differ, thus histomorphological study remains the gold standard for categorization and for proper treatment.

Keyword Ovarian neoplasm, Malignant, Serous, Benign, Boderline

INTRODUCTION

Ovarian neoplasms comprises 23% of all gynaecological tumors. They are common tumors in female and ovaries are a common site for benign and malignant neoplasm.[1] Benign ovarian

ISSN: 0975-3583,0976-2833 VOL13,ISSUE08,2022

neoplasm occur mostly in younger group between age group of 20-45 years whereas malignant tumors are common in older women between the age of 40-80 years.[2,3] Approximately 60-70% of the neoplasm present in later stage as either stage III or IV because majority of these tumors initially give rise only to vague signs and symptom .[4] The advanced stage presentation, result in poor prognosis and low mean 5 years survival rate. Nulliparity, family history of the cancer and genetic mutation are some of the risk factor associated with development of ovarian neoplasms.[5] However gonadal dysgenesis in children is associated with higher risk of ovarian cancer. There is a no screening test for ovarian tumors and these tumors cannot be confidently distinguished from one another on the basis of their clinical, radiological or gross characteristic, so identification of various histological pattern of ovarian tumors is important for diagnosis, prognosis and as well as to achieve optimum treatment response. Ovarian neoplasms are the seventh leading cause of cancer death among women worldwide and in India it comprises up to 8.7% of cancers in different parts of the country.[6,7]

This retrospective study aimed to study spectrum, frequency and age distribution with clinicopathological correlation of ovarian tumor.

MATERIALS AND METHODS

This is a two-year retrospective study carried out in department of pathology National Institute of Medical sciences and Research, Jaipur (Rajasthan) from 1 June 2020 to 31 May 2022 . Formalin fixed ovarian samples were received from Department of surgery and Oncosurgery. The slides were reviewed microscopically in detail and tumors were diagnosed as per WHO criteria (2020) into surface epithelial tumors (Benign, Borderline and Malignant),Germ cell tumor, Sex Cord stromal tumors and Metastatic tumors. The clinical details were analysed from their case records. 52 cases of ovarian masses were included in our study.

Inclusion criteria

All histologically proven both primary and secondary ovarian tumors.

Exclusion Criteria

1) Non neoplastic ovarian lesions
2) Patient not willing to give consent for this study

Result

Total 52 ovarian neoplasm were included in this study. It was found that right side (59.60%) was more commonly involved by tumors than left side (40.3%). Most benign ovarian tumors were seen in age group of 21-30 years and malignant ovarian tumors in 61-70 years of age group.The age group ranged from 21 - 70 years. In young patients benign serous cystadenoma was most commonly found. And in old patients mucinous adenocarcinoma was most common.

Table 1- Age distribution of ovarian neoplasm

Age (years)	Benign	Borderline	Malignant
21-30	13	0	1

ISSN: 0975-3583,0976-2833 VOL13,ISSUE08,2022

31-40	12	0	0
41-50	7	0	1
51-60	3	1	4
61-70	4	2	6

Table 2: Distribution of ovarian neoplasm according to nature

	Number of cases (n=52)	Percentage
Benign	37	71%
Borderline	3	6%
Malignant	12	23%
Total	52	100

Table 3: Distribution of ovarian neoplasm according to incidence

Incidence	Number of cases (N= 52)	Percentage (%)
Surface epithelial tumor	33	63.4
Germ cell tumor	14	26.9
Sex cord tumor	5	9.61
Total	52	100

Table 4: Histologic type distribution of ovarian neoplasm

	Type of ovarian neoplasm	Number of cases	Percentage (%)
A	**Benign**	**37**	**71%**
	Serous cyst adenoma	17	32.6
	Mucinous cyst adenoma	13	25
	Benign cystic teratoma	2	3.8
	Fibroma	3	5.7
	Mature cystic teratoma	2	3.8
B	**Borderline**	**3**	**6**
	Mucinous borderline tumor	2	3.84
	Serous borderline tumor	1	1.92
C	**Malignant**	**12**	**23**
	Serous cyst adenocarcinoma	5	9.6
	Mucinous cyst adenocarcinoma	3	5.7
	Granulosa cell tumor	2	3.8
	Endometroid carcinoma	1	1.9
	Dysgerminoma	1	1.9

ISSN: 0975-3583,0976-2833 VOL13,ISSUE08,2022

Discussion

In our study among surface epithelial tumors Serous cystadenoma was commonest(32.6%). The second commonest among Surface epithelial tumours is Mucinous cystadenoma-25%. 1 case of borderline serous tumour(1.92%) and 2 cases of Mucinous borderline tumour(3.84%) . 9 cases of malignant tumours Including Mucinous cystadenocarcinoma (5.7%),Serous Cystadenocarcinoma (9.6%) and Endometrioid Carcinoma (1.9%) was found.

In our study 14 Germ cell tumours were found, it was second commonest ovarian tumour (26.9%). Among these 4 Benign cases i.e. 2 cases (3.8%) each of Benign and Mature cystic teratoma were seen.1 Malignant case Dysgerminoma(1.9%) was seen.

In our study 5 Sex cord stromal tumors cases (9.61%) were found. 3 Benign cases were of Fibroma (5.7%) and 2 Malignant case of Granulosa cell tumour (3.8%) were seen.

We found 71% benign cases which was similar to studies done by Sehgal et al[8] (70.88%) , Parmar et al[9] (68.66%) and Panchori et al[10] (72.31%). Borderline tumors were 6% in this study which was similar to study of Sehgal et al[8] (3.44%) but different from Parmar et al[9] (2%) and Panchori et al[10] (2.48%). We found 23% malignant cases which was comparable with study done by Sehgal et al[8] (23%), Parmar et al[9] (25.3%) and Panchori et al[10] (25.21%).

In our study we found that surface epithelial tumors were commonest (63.4%). This is consistent with studies done by Ashmeet et al[11] (63.4%), Sharma et al[12] (76.12%) and Gupta et al[13] (46.9%). 26.9% cases were found of germ cell tumor which is similar to study done by Ashmeet et al[11] (30.9%) but different from Sharma et al[12](18.46%0 and Gupta et al[13] (45.7%). We found 9.61% cases of sex cord stromal tumors but Ashmeet et al[11], Sharma et al[12] and Gupta et al[13] found 4.43%, 3.31% and 3.6% cases respectively.

Among the malignant tumors, serous cystadenocarcinoma (9.6%) were most common tumors. This agreed with Jha et al[14], while Swamy et al[15] observing granulosa cell tumours as the most common ovarian malignancy.

Commonest germ cell tumors was benign cystic teratoma, similar observations were made by Panchori et al[10] and Gupta et al[13].

According to Santosh kumar et al[16], A. bhagyalaxmi et al[17] and Panchori et al[10] a peak age incidence of benign neoplasm was between age of 21 to 40 years which is similar to the present study. 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 61-70 years in our study which was different to age incidence seen in studies of Kayastha et al[18], Santosh et al[16], A. bhagyalaxmi et al[17] and Panchori et al[10].

This study has shown the occurrence of primary malignant ovarian tumours in the younger age group. Hence in a young female with ovarian mass the possibility of malignancy and metastatic tumour should not be neglected. Differentiation of a benign tumor from a malignant one is important for determining better management and prognosis.

Conclusion

ISSN: 0975-3583,0976-2833 VOL13,ISSUE08,2022

The ovarian tumors in our institute represented a wide histological spectrum. The frequency distribution of the tumors was similar to various reports available in literature. The single most common tumor was surface epithelial tumor and especially serous cystadenoma in our study. As the natural history, treatment modalities and prognosis of ovarian neoplasms differ, thus histomorphological study remains the gold standard for categorization and for proper treatment.

Conflict of interest: None declared
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ISSN: 0975-3583,0976-2833 VOL13,ISSUE08,2022

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Figure 1: Photomicrograh (H&E 400x) : Mucinous cyst adenoma

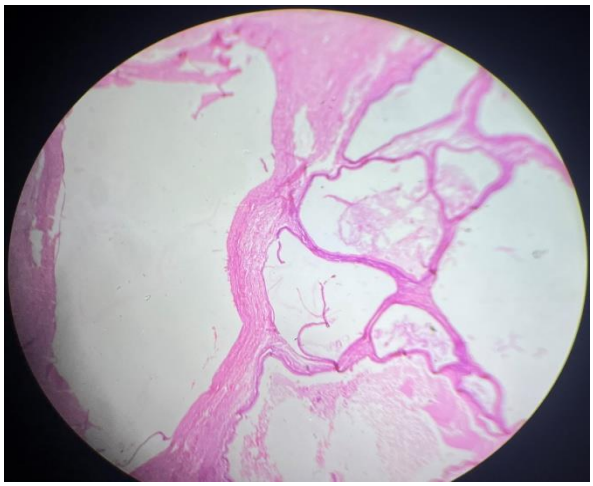
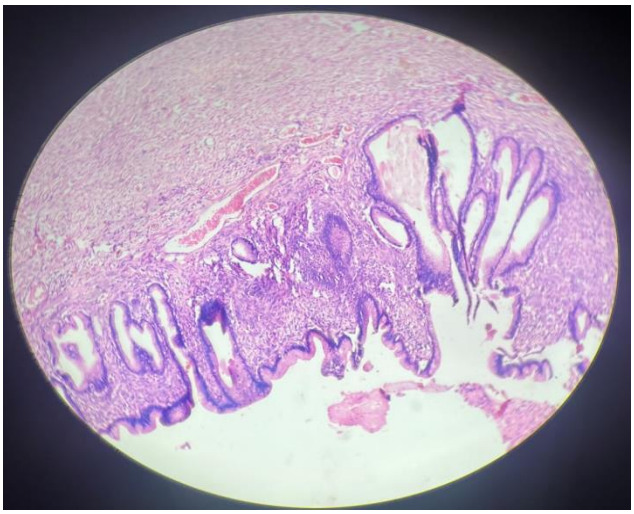


Figure 2: Photomicrograh (H&E 400x) : Mucinous borderline tumor



ISSN: 0975-3583,0976-2833 VOL13,ISSUE08,2022

Figure 3: Photomicrograh (H&E 400x) : Endometrioid tumor

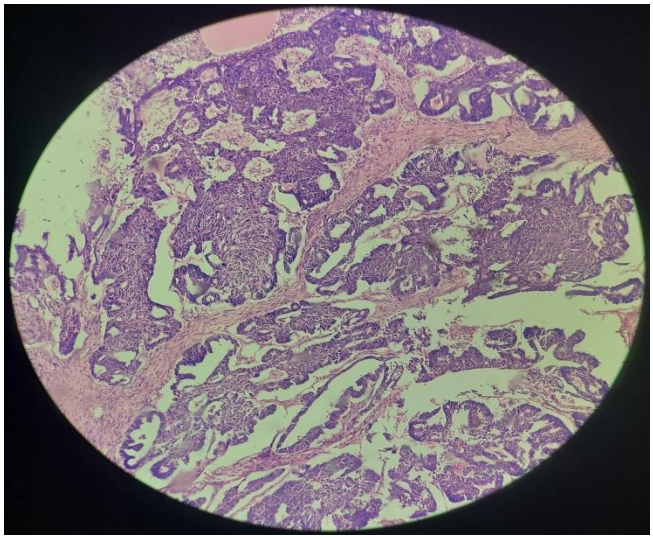


Figure 4: Photomicrograh (H&E 400x) : Serous cyst adenocarcinoma

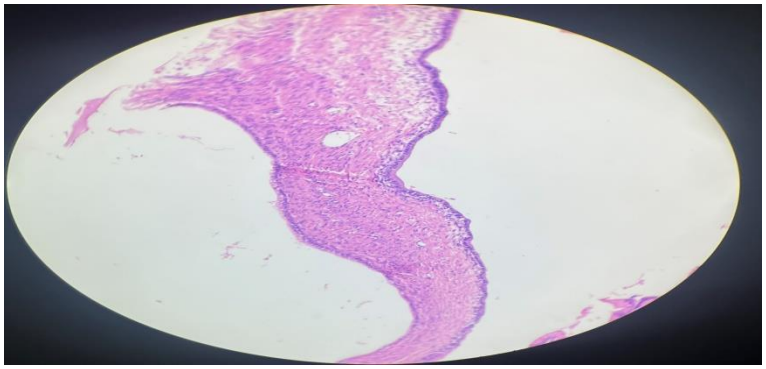
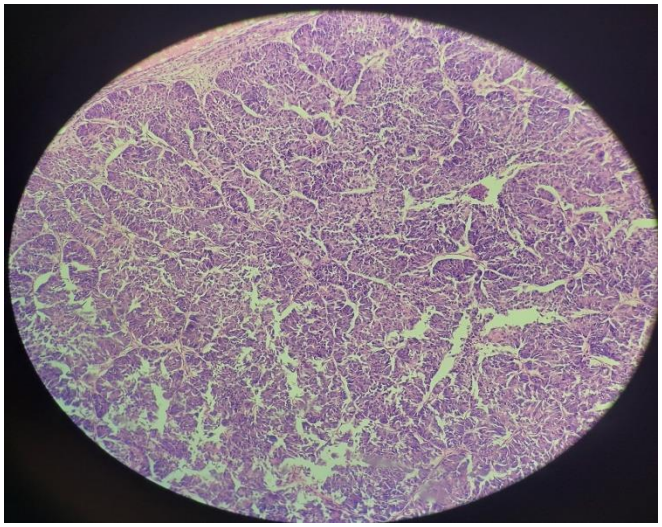


Figure 5: Photomicrograh (H&E 400x) : Serous cyst adenoma



ISSN: 0975-3583,0976-2833 VOL13,ISSUE08,2022

Figure 6: Photomicrograh (H&E 400x) : Dysgerminoma