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Original Research Article.

Histopathological Spectrum of Ovarian Tumours: A Two-Year Retrospective Study

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ABSTRACT

Introduction: Ovarian cancer are one of the most leading cause of mortality in female. In 2018, there will be approximately 22,240 new cases of ovarian cancer diagnosed and 14,070 ovarian cancer death in the us. Tumours of ovary are a heterogeneous neoplasm, they manifest a wide range of clinical, morphological and histological features.

Aim: To study the frequency, histomorphological spectrum and age distribution of ovarian tumors.

Materials and Methods: This is a two-year retrospective study carried out in department of pathology SMS medical college and hospital, Jaipur (Rajasthan) from 1 January 2017 to December 2018. 261 cases of ovarian masses included in our study.

Results: Out of 261 cases, 256 cases (98.09%) were primary tumor and 5 cases (1.91%) were metastatic lesions. Among primary ovarian tumors 185 (70.88%) were benign, 9 (3.44%) were borderline and 62 (25.33%) were malignant. Histopathologically surface epithelial tumors were commonest 173 cases (66.28 %), followed by germ cell tumor 65 cases (24.90%) and sex cord stromal tumor 18 cases (6.89%). Age ranged from 9-70 years.

Keywords: Benign, Histopathology, Malignant, Ovarian Tumours, Surface Epithelial Tumors.

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INTRODUCTION

Ovaries are a common site for both benign and malignant neoplasm. Ovarian neoplasms are common tumors in females comprising 23% of all gynaecological tumors.[1] Ovarian tumors are the 5th leading cause of cancer related death in women in the USA.

Benign ovarian neoplasm occur mostly in younger group (20-45 years) .The malignant tumors are common in older women between the age of 40-80 years.[2,3] A majority of these tumors initially give rise only to vague signs and symptom, so approximately 60-70% of the neoplasm present in later stage as either stage III or IV.[4] The advanced stage presentation, result in a low mean 5 years survival rate and poor prognosis.

For ovarian tumor there are no well recognized risk factor however, nulliparity, family history of the cancer and genetic mutation are some of the risk factor associated with development of ovarian neoplasms.[5] 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. This retrospective study aimed to find out the frequency, histomorphological spectrum and age distribution of ovarian tumors.

MATERIALS AND METHODS

This is a two-year retrospective study carried out in department of pathology SMS medical college and hospital, Jaipur (Rajasthan) from 1 January 2017 to December 2018. The slides were reviewed microscopically in detail and tumors were classified according to the WHO classification of ovarian tumours. The clinical details were analysed from their case records. 261 cases of ovarian masses were included in our study.

Inclusion Criteria

All histologically proven both primary and secondary ovarian tumours.

Exclusion Criteria

Non neoplastic ovarian lesions.

Table 1: Distributions of Ovarian Tumor

	n	%
Benign	185	70.88%
Borderline	9	3.44%
Malignant	62	23.75%
Metastatic	5	1.93%
Total	261	100%

Table 2: Distribution of ovarian neoplasms according to histological type

	n	%
Surface epithelial tumors	173	66.28
Sex cord Stromal tumors	18	6.89
Germ cell tumors	65	5.00
Metastatic	5	1.77
Total	261	100

Table 3: Histomorphological spectrum of ovarian tumor according WHO classification

	n	%
Surface epithelial tumor	173	66.28%
(A) Serous tumor	110	42.14%
Benign	74	28.35%
Borderline	5	1.91%
Malignant	31	11.87%
(B) Mucinous tumor	59	22.60%
Benign	44	16.85%
Borderline	4	1.53%
Malignant	11	42.14%
(C) Endometrial	2	0.76%
(D) Brenner Tumor	1	0.38%
(E) Clear cell tumor	1	0.38%
Sex cord Stromal Tumor	18	6.89%
(a) Granulosa cell Tumor	6	2.29%
(b) Fibroma	9	3.44%
(c) Sex cord stromal tumor unclassified	1	0.38%
(d) Steroli leydig cell tumor	2	0.76%
Germ Cell Tumor	65	24.90%
(a) Dysgerminoma	3	1.14%
(b) Benign cystic teratoma	55	21.07%
(c) Immature teratoma	5	1.91%
(d) Sturma ovarii	2	0.76%
Metastatic	5	1.91%

Table 4: Distribution of Benign tumor

Benign Tumor Type	n	%
Serous cystadenoma	66	35.67%
Serous cystadeofibroma	4	2.16%
Papillary Serous Cystadeofibroma (PSCAF)	4	2.16%
Mucinous cyst adenoma	44	23.78%
Brenner's tumor	1	0.54%
Fibroma	9	4.86%
Benign cystic teratoma	55	29.72%
Struma ovarrii	2	1.08%

Table 5: Distribution of Malignant tumor

Histological subtype	31	%
Papillary Serous Cyst Adenocarcinoma (PSCAC)	11	49.53%
Mucinous Cyst Adenocarcinoma (MCAC)	2	17.74%
Endometrial Adenocarcinoma (EAC)	1	3.22%
Clear cell adenocarcinoma (CAC)	1	1.61%
Sex cord stromal tumor (SCST)	2	1.61%
Sertoli leydig cell tumor	6	3.22%
Granulosa cell tumour	3	9.66%
Dysgerminoma	5	4.83%
Immature teratoma		8.061%

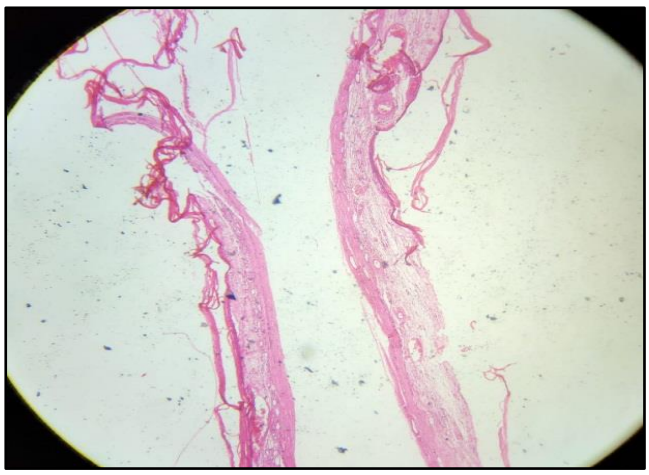

Figure 1: Serous Cyst adenoma

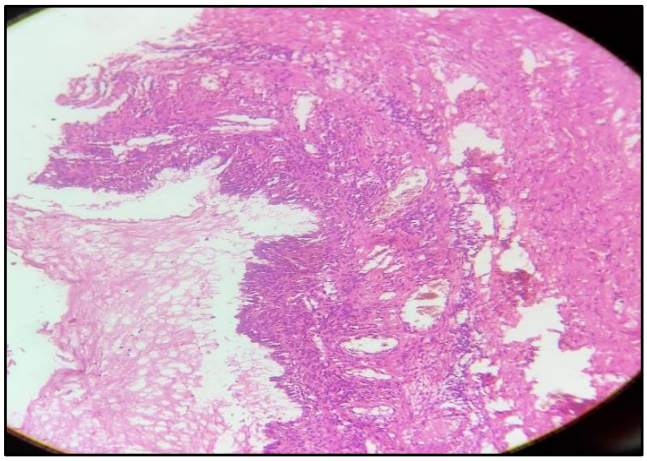

Figure 2: Serous cystadenocarcinoma

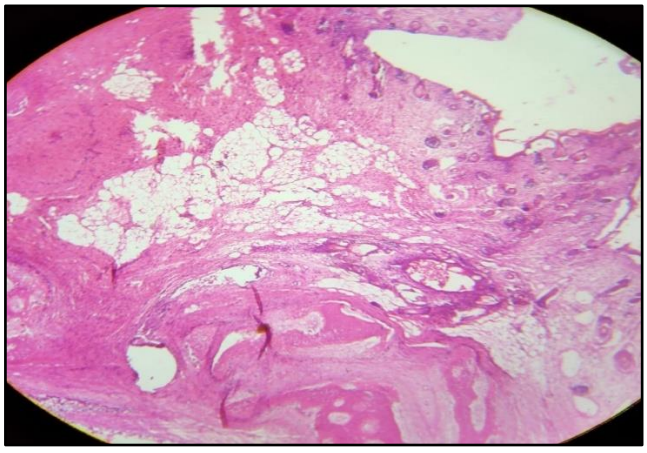

Figure 3: Mature cystic teratoma

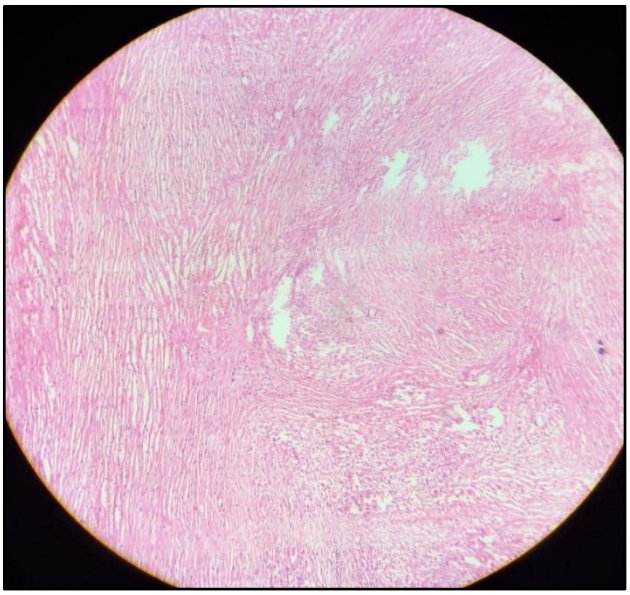

Figure 4: Fibroma

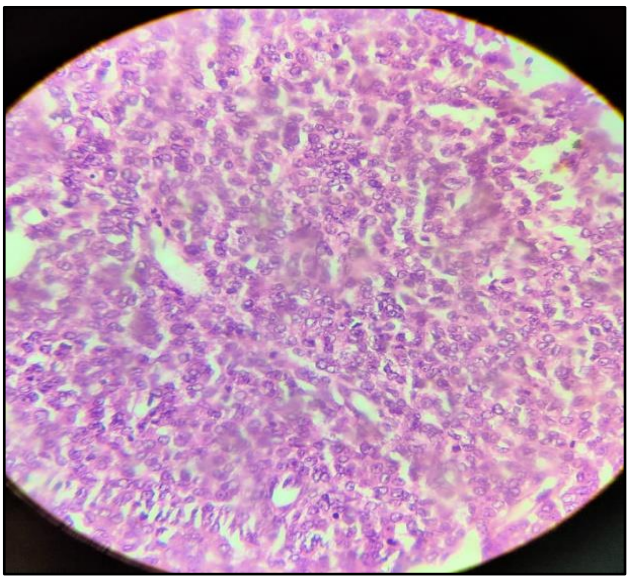

Figure 5: Granulosa cell tumours

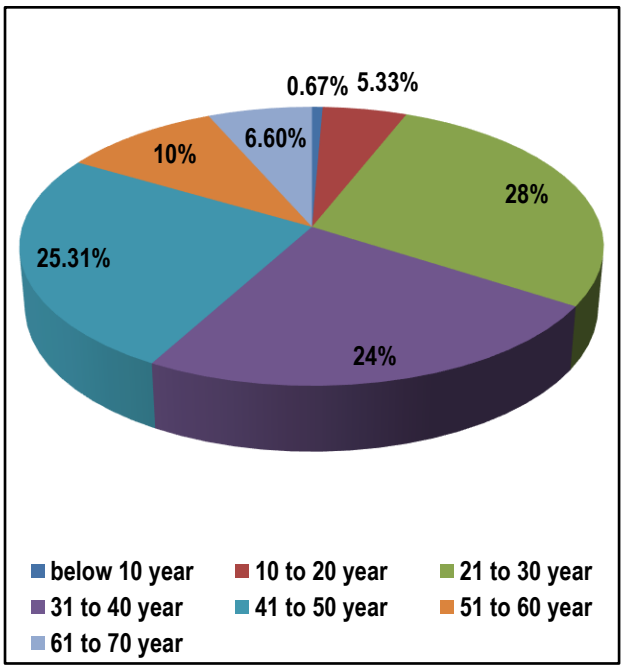

Chart 1: Distribution of ovarian tumours according age group

RESULTS

A total number of 261 cases of ovarian tumours were included in our studied. Age ranged from 9-70 years., 256 cases (98.09%) were primary tumor and 5 cases (1.91%) were metastatic. Among primary ovarian tumors 185(70.88%) were Benign, 9 (3.44%) were borderline and 62 (25.33%) were malignant.

Histopathologically Epithelial tumors were the commonest 173 cases (66.28%), second most common were germ cell tumors 65 cases (24.90%) followed by sex cord stromal tumors 18 cases (6.89%).

Among benign tumors, serous Cyst adenomas [figure 1] (35.67%) were the most common, while in malignant serous cystadenocarcinomas [figure 2] (49.53%) were the most commonly occurring tumor.

Germ cell tumors were the second most common tumours (24.90%) observed in this study, a majority (21.09%) of which were mature cystic teratomas [figures 3]

Sex cord stromal tumours comprised 6.89%, the third most common category observed. Fibromas [figure 4] were the most common benign sex cord stromal tumours, Granulosa cell tumours [figure 5] being the most common malignant type.

Age ranged of ovarian tumours from 9-70 years. Most common age presentation of benign ovarian tumours were between 20-45 years, while in malignant tumours 40 -80 years.

DISCUSSION

In the present study 70.88% tumours were benign, 3.44% were borderline and 23.75% were malignant. histologically, surface epithelial tumours (66.28%) were most common type of ovarian tumours, followed by germ cell tumors (24.90%) and sex cord stromal tumors (6.89%). Similar results were found in studies of Gupta[6] et al and Pilli[7] et al, however, reporting figures of 72.9%, 4.10%, 22.9% and 75.2%, 2.8%, 21.9%. for benign, borderline and malignant ovarian tumors respectively.

In present study the commonest epithelial tumors were serous Cystadenoma (38.15%) followed by mucinous Cystadenoma (25.43%). Whereas as commonest germ cell tumors was benign cystic teratoma, similar observations were made by Geeta[8] et al and Gupta[6] et al.

Among the benign tumours serous Cystadenoma (66/185-35.67%) were the most common tumours followed by mature cystic teratoma (55/185-29.72%), similar results were present in Shah[9] et al and Thanikasalam[10] et al.

Among the malignant tumours, serous cystadenocarcinoma (31/62-49.53%) were most common tumours. This agreed with Jha[11] et al, while Swamy[12] et al observing granulosa cell tumours as the most common ovarian malignancy.

A majority of the tumours diagnosed in our study occurred in the age between 21-40 years (chart 1) this agreed with the findings of shah[9] et al, Pilli[7] et al and Jha[11] et al. 21 to 30 years were the peak age incidence for benign neoplasm in present study. In Geeta[8] et al and Santosh a peak age incidence of benign neoplasm was between 21 to 40 years. The higher incidence of malignant tumours in the 41-60 years age group.

CONCLUSION

The ovarian tumours represented a wide histological spectrum. Benign ovarian were common than malignant. On morphological ground, surface epithelial tumours were the most common variant.

Most ovarian malignancy present late due to vague sign and symptom. As the natural history, prognosis and treatment modalities of ovarian tumours differ, the histomorphological study remain the gold standard.

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