International Journal of Clinical and Diagnostic Pathology

ISSN (P): 2617-7226
ISSN (E): 2617-7234
www.patholjournal.com
2020; 3(1): 447-450
Received: 12-11-2019
Accepted: 15-12-2019

Balaji TG
Assistant professor,
Department of Pathology,
SSIMS, RC, Davangere,
Karnataka, India

Nandish VS
Assistant professor,
Department of Pathology,
SSIMS, RC, Davangere,
Karnataka, India

Shashikala P
Professor and Head,
Department of Pathology,
SSIMS & RC, Davangere,
Karnataka, India

Corresponding Author:
Nandish VS
Assistant professor,
Department of Pathology,
SSIMS, RC, Davangere,
Karnataka, India

Histomorphological study of ovarian neoplasms

Balaji TG, Nandish VS and Shashikala P

DOI: https://doi.org/10.33545/pathol.2020.v3.i1g.209

Abstract
Background: Among women of India ovaries are the third most common site for cancer after cervix and breast. Ovarian neoplasms have insidious onset and are diagnosed usually at advanced stage. They are not detected in early stage as there is large space available in pelvis and abdominal cavity for expansion, hence they come to notice once they have achieved large size.
Methods: This retrospective study was conducted on consecutive ovarian specimens received in the Department of Pathology at a tertiary care center. All the resected specimens were received either as solitary specimens or as a part of pan hysterectomy in the laboratory; these were included in the study. The normal ovaries and ovaries with non-neoplastic lesions were excluded from the study.
Results: A total of thirty five (35) cases were studied with age ranging from as young as 17 years to as old as 75 years. Majority of the tumors were benign 27 (77.14%) followed by malignant 7 (20%) and borderline 1 (2.86%).
Conclusion: Among benign neoplasms serous cystadenomas were the commonest neoplasms. Serous carcinomas comprised majority of malignant neoplasms. The bulk of ovarian neoplasms were seen in 4th and 5th decade.

Keywords: ovarian neoplasms, serous carcinoma, teratoma

Introduction
Among women of India ovaries are the third most common site for cancer after cervix and breast [1]. Ovarian neoplasms have insidious onset and are diagnosed usually at advanced stage [2]. They are not detected in early stage as there is large space available in pelvis and abdominal cavity for expansion, hence they come to notice once they have achieved large size [3]. Ovarian neoplasms usually present with abdominal pain, mass in the abdomen and irregular menstruation [4].
Ovarian neoplasms present with wide variety of histopathological patterns [2]. The frequency of different ovarian tumours in India is different from western countries [5]. Benign tumours are more common in younger age group between 20-45 years, whereas malignant tumours are more common between 40-65 years. Risk factors for ovarian neoplasms are increasing age of reproduction, positive family history, high socio-economic status and nulliparity [6].
Histopathological classification of ovarian neoplasms is necessary for proper treatment and prognosis [7].
The present study was done to determine the frequency of various histopathological types of ovarian neoplasms according to WHO classification and to find out their age distribution.

Materials and methods
This retrospective study was conducted on consecutive ovarian specimens received in the Department of Pathology at a tertiary care center. All the resected specimens were received either as solitary specimens or as a part of pan hysterectomy in the laboratory; these were included in the study. The normal ovaries and ovaries with non-neoplastic lesions were excluded from the study.
The specimens received were immediately fixed in 10% formalin for at least 24 hours. Gross features of specimen were noted and multiple representative sections were taken for routine processing. Paraffin embedded sections of 4 micrometers were taken and stained with Hematoxylin and Eosin (H&E). After detailed study of sections under the light microscope the final diagnosis was arrived according to the WHO classification of ovarian tumors. The patient details like age, sex, clinical diagnosis were obtained from the requisition forms that were sent along with the specimen.

Results

A total of thirty five (35) cases were studied with age ranging from as young as 17 years to as old as 75 years. Majority of the tumors were benign 27 (77.14%) followed by malignant 7 (20%) and borderline 1 (2.86%). The ovarian tumors were more common in the age group of 40-59 years accounting to 23 (65.71%) cases. Table 1. Majority of the ovarian tumors were seen on the right side, 17 (48.57%) cases followed by left, 13 (37.14%) cases and bilaterally in only 5 (14.29%) cases. Chart 1.

The most common serous tumor was benign serous cystadenoma 10 (28.57%) cases, most common germ cell tumor were mature teratoma 8 (22.86%) cases and most common sex cord stromal tumour was fibroma-thecoma 4(11.43%).

Table 1: Comparison of tumor type with different age groups

Tumor type/ Age groups	20-39	40-59	60-79	Total	Percentage
Benign	7	17	3	27	77.14%
Borderline		1		1	2.86%
Malignant		5	2	7	20%
Total	7	23	5	35	100%

Discussion

In the present study a total of 35 cases of ovarian neoplasms were diagnosed. Out of 35 cases 27(77.14%) were benign, 1(2.86%) was borderline and 7(20%) were malignant; similar findings were seen in studies conducted by Pilli *et al.* [8], Yagambal *et al.* [9], Nirani *et al.* [10], Dimpal *et al.* [11] In present study maximum number of cases 23(65.71%) were seen between the age group of 40-59 years, similar finding was seen in studies conducted by Phukan A *et al.* [6] and Kar *et al.* [12]; other studies conducted by Pilli *et al.* [8] and Ramachandran *et al.* [13] showed maximum cases in the age group of 20-39 years.

A total of 17(48.58%) cases showed neoplasms in the right ovary, among which 14 cases were benign and 3 cases were malignant. Whereas 13(37.14%) cases showed neoplasms in left ovary among which 12 cases were benign and 1 case was malignant. Remaining 5(14.28%) cases were seen bilaterally out of which 3 cases were malignant, 1 case was of benign and 1 case was borderline.

The most common serous tumor was benign serous cystadenoma 10 (28.57%) cases, most common germ cell tumor were mature teratoma 8 (22.86%) cases and most common sex cord stromal tumour was fibroma-thecoma 4(11.43%).

In present study the maximum occurrence of cases of ovarian neoplasms was seen in the age group of 40-59 years, which was in discordance with majority of the studies where maximum occurrence was seen in the age group of 20-39 years. This could be attributed to a relatively small sample size.

Table 2: Comparison of tumour type with laterality

Tumor type	Bilateral	Left	Right	Total
Benign	1	12	14	27
Borderline	1			1
Malignant	3	1	3	7
Total	5	13	17	35

Table 3: Distribution of various ovarian neoplasms

Diagnosis	Number	Percentage
Adult granulosa cell tumor	2	5.714%
Fibroma-thecoma	4	11.43%
High grade serous carcinoma	2	5.714%
Low grade serous carcinoma	3	8.571%
Mature teratoma	8	22.86%
Mucinous cystadenoma	4	11.43%
Serous borderline tumor	1	2.857%
Serous cystadenofibroma	1	2.857%
Serous cystadenoma	10	28.57%
Total	35	100%

Table 4: Comparison of various ovarian neoplasms with different age groups

Diagnosis/Age groups	0-19	20-39	40-59	60-79	Total
Adult granulosa cell tumor			1	1	2
Fibroma-thecoma			3	1	4
High grade serous carcinoma			2		2
Low grade serous carcinoma			2	1	3
Mature teratoma		5	3		8
Mucinous cystadenoma			3	1	4
Serous borderline tumor			1		1
Serous cystadenofibroma			1		1
Serous cystadenoma		2	7	1	10
Total		7 (20%)	23 (65.71%)	5 (14.29%)	35 (100%)

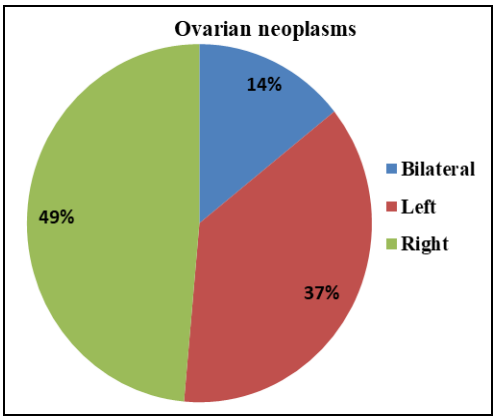

Chart 1: Distribution of laterality

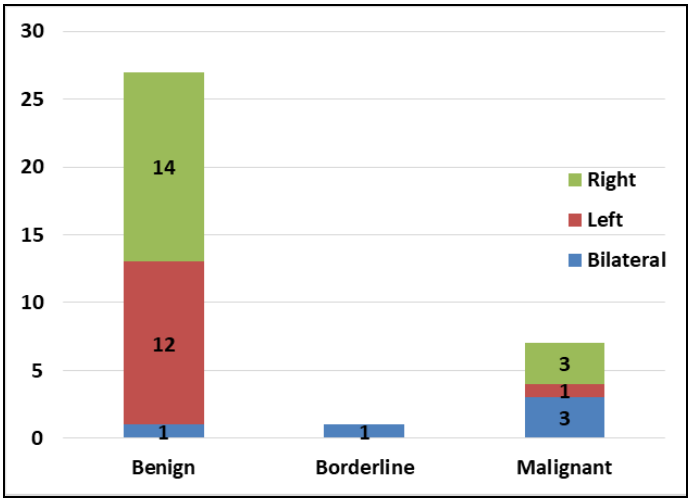

Chart 2: Distribution of tumour type with laterality

Fig 1: Serous cystadenoma

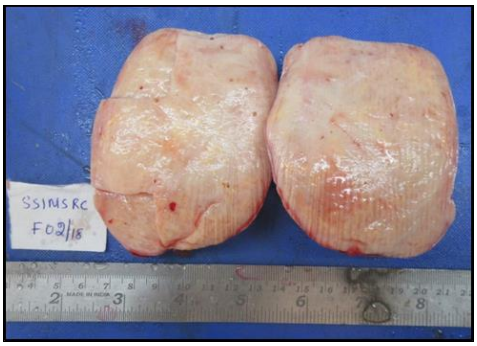

Fig 2: Fibroma-thecoma

Fig 3: Mature teratoma

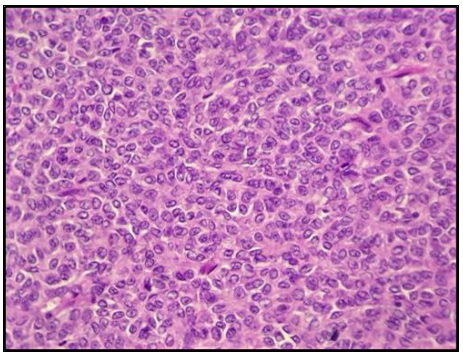

Fig 4: Granulosa cell tumour

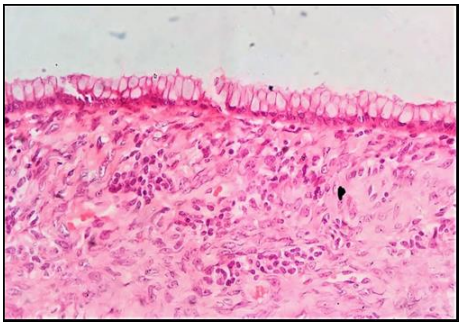

Fig 5: Mucinous cystadenoma

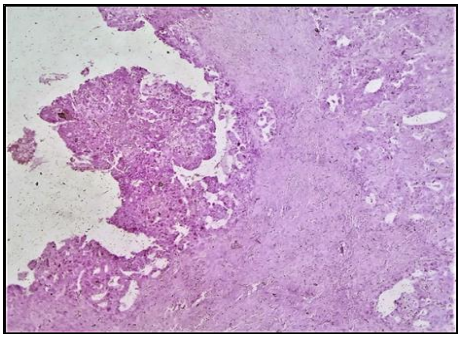

Fig 6: Low grade serous carcinoma

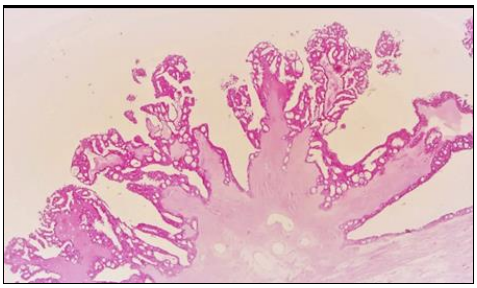

Fig 7: Serous borderline tumour

Conclusion

In present study benign ovarian neoplasms were more common. Among benign neoplasms serous cystadenomas were the commonest neoplasms. Serous carcinomas comprised majority of malignant neoplasms. The bulk of ovarian neoplasms were seen in 4th and 5th decade, hence we conclude that early investigations and therapeutic management would help in reducing morbidity and mortality.

References

1. Amita S Patel, Jignasha M Patel, Kamlesh J Shah. Ovarian tumors - Incidence and histopathological spectrum in tertiary care center, Valsad. IAIM. 2018; 5(2):84-93.
2. Barve NN, Goswami HM, Parikh U. Ovarian Neoplasms-Histopathological Patterns and Relative Frequencies in an Indian Tertiary Care Hospital. Int J Cur Res Rev. 2017; 9(24):43-7.
3. Sharma M, Soni A, Kaul R. Histopathological pattern of ovarian neoplasms in Sub-Himalayan belt of rural India: a four-year study from a tertiary care teaching hospital. Int. J Reprod Contracept Obstet Gynecol. 2017; 6(12):5448-52.
4. Ashraf A, Shaikh AS, Ishfaq AY, Akram AB, Kamal FU, Ahmad NA. The relative frequency and histopathological pattern of ovarian masses. Biomedica.2012; 28(1):98-102.
5. Jha R, Karki S. Histological pattern of ovarian tumors and their age distribution. Nepal Med Coll J. 2008; 10(2):81-5.
6. Phukan A, Borgogoi M, Ghosh S. Histopathological spectrum of ovarian tumors: an institutional perspective. Int. J Res Med Sci. 2018; 6:2639-43.
7. Modi D, Rathod GB, Delwadia KN, Goswami HM. Histopathological pattern of neoplastic ovarian lesions. IAIM. 2016; 3(1):51-7.
8. Pilli GS, Suneeta KP, Dhaded AV, Yenni VV. Ovarian tumor. A study of 282 cases. J Indian Med Assoc. 2002; 100(7):420-7.
9. Yogambal M, Arunalatha P, Chandramouleeswari K, Palaniappan V. Ovarian tumors-Incidence and distribution in tertiary referral center in south India. IOSR-JDMS. 2014; 13(2):74-80.
10. Nirali Thakkar N, Shaila Shah N. Histopathological Study of Ovarian Lesion. International journal of Science and Research. 2015; 4(10):1745-9.
11. Dimpal Modi, Gunvanti Rathod B, Delwadia KN, Goswami HM. Histopathological pattern of neoplastic ovarian lesions. IAIM. 2016; 3(1):51-7.
12. Tushar K, Asaranti K, Mohapatra PC. Intraoperative cytology of ovarian tumours. J Obstet Gynecol India. 2005; 55(4):345-9.
13. Ramachandra G, Harilal KR, Chinnamma K, Thangavelu H. Ovarian neoplasms-A study of 903 cases. J Obstet Gynecol India. 1972; 22:309-15.