Original Research Article

Indian Journal of Pathology: Research and Practice
Volume 9 Number 3, September – December 2020
DOI: http://dx.doi.org/10.21088/ijprp.2278.148X.9320.43

Clinicopathological Study of Neoplastic and Non Neoplastic Lesions of Ovary: A 3 Year Study

U Bharathi[1], J Priyadharisini[2], Sivaganesh Porko G[3]

Author's Affiliation: [1,2]Assistant Professsor, [3]Associate Professsor, Department of Pathology, Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry 605502, India.

Corresponding Author: U Bharathi, Assistant Professsor, Department of Pathology, Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry 605502, India.

E-mail: bharathi25nov@gmail.com

How to cite this article:

U Bharathi, J Priyadharisini, Sivaganesh Porko G. Clinicopathological Study of Neoplastic and Non Neoplastic Lesions of Ovary: A 3 Year Study. Indian J Pathol Res Pract 2020;9(3):279–282.

Abstract

Introduction: Ovarian lesions can manifest from childhood to postmenopausal women. It is one of the most common site for neoplastic and non neoplastic lesions. Among cancers of female genital tract ovarian cancer ranks next only to carcinoma cervix and endometrium.

Aims and Objectives: Aim of our study is to analyse and study the pattern of ovarian lesions and their clinico pathological features.

Materials and Methods: Its a prospective and a retrospective study of 80 cases at a tertiary care hospital puducherry. All the relevant clinical data are collected from the hospital record files. Data was analyzed using an MS Excel worksheet and calculations of incidence made from the same.

Results: Among 80 cases studies 50 were non neoplastic and 35 were neoplastic. Most common non neoplastic lesion was follicular cyst. Among 35 neoplastic lesions 28 were benign, 1 borderline and 6 malignant cases. In benign cases the most common lesion was serous cystadenomas followed by mucinous cystadenomas. Among malignant cases maximum were of serous cystadenocarcinoma.

Conclusion: Ovarian lesions exhibit a wide range of histological features. The gold standard diagnosis of ovarian lesions is histopathological analysis. Clinicalpathological correlation enhances the diagnostic valve of ovarian lesions.

Keywords: Benign; Malignant; Ovary; Ovarian cyst.

Introduction

Ovarian neoplastic and non neoplastic lesions poses a great challenge to a histopathologist and gynaecological oncologist because of its diverse features. Some non neoplastic lesions of ovary form a pelvic mass and mimic an ovarian neoplasm. So their classification and proper recognition is very important to allow appropriate therapy.[1] Neoplastic lesions can arise from germ cells, mullerian epithelium or sex cord stromal cells.[2] World wide ovarian cancer is the 7th leading cause of death among women and in India its comprising up to 8.7% of cancers.[3–4] Some type of non-neoplastic lesions e.g. follicular cysts, are so common that they are virtually considered normal.[5] The most common age group of epithelial ovarian cancer is at 50– 60 yrs of age. 7% of ovarian epithelial tumors in the premenopausal women are malignant and 30% of neoplasms in postmenopausal women are malignant.[6] The clinical course of these ovarian neoplasm are variable and malignancies are detected when they have spread beyond the ovary. Prognosis of ovarian tumor in women under 40 years of age has a greater survival rate.[7] Limited use of newer techniques like cytology and biopsy makes early diagnosis of these lesions difficult. Hence ovarian tumorsoffer a good field of research

Materials and Methods

The study is a prospective and a retrospective study. The study includes 85 cases of non-neoplastic and neoplastic lesions of ovary received in the Department of Pathology over the period of three years. Ovarian specimen was obtained from hysterectomy specimen with unilateral or bilateral adnexa, and oophorectomy and/or cystectomy specimens received in the department.

Relevant clinical information regarding the age, clinical features, radiological findings and provisional diagnosis were obtained. The specimens were analysed in detail macroscopically for various parameters like size, external surface, and consistency and cut sections with contents of cyst.

The tissues were processed by routine paraffin techniques and sections stained with Haematoxylin and Eosin were taken for microscopic examination.

The non-neoplastic and neoplastic lesions from representative sections were studied and classified according to World Health Organisation (WHO) classification. Data was analyzed using an MS Excel worksheet and calculations of incidence made from the same.

Observation and Results

Table 1: Age wise distribution of patients operated for ovarian mass.

Age	Number of patients	Percentage
< 19 years	8	9.4
20–39 years	42	49.4
40–59 years	29	34.11
>60 years	6	7.05

Table 2: Showing the clinical symptoms of non neoplastic and neoplastic lesions of ovary.

Clinical symptoms	Number of cases	Percentage
Pain in abdomen	34	40
Menstrual irregularities/ abnormal vaginal bleeding	41	48.2
Pain in abdomen with white discharge per vagina.	2	2.35
Pain in abdomen with mass per abdomen	2	2.35
Mass per abdomen only.	5	5.88
Pain in abdomen with Menstrual irregularities/ abnormal vaginal bleeding	1	1.17
Total	85	100

Table 3: Showing incidence of marital status and parity distribution in the present study.

Marital status	Benign tumor	Borderline tumors	Malignant tumor	Total
Unmarried	5	–	–	5(14.28%)
Nulliparous	8	–	1	9(25.71%)
Parity 1	4	–	3	7(20%)
Parity 2	5	1	1	6(17.14%)
Parity 3	4	–	1	5(14.28%)
Parity 5 and above	2	–	–	2(5.71%)
Total	28	1	6	35(100%)

Table 4: Number of neoplastic and non neoplastic lesions of ovary.

Type of lesion	No. of cases	Percentage
Neoplastic	35	41.17
Non neoplastic	50	58.8
Total	85	100

Table 5: Frequency of Non neoplastic lesions of ovary.

Non neoplastic lesions of ovary	No of cases	Percentage
Follicular cyst	33	66
Corpus leuteal cyst	13	26
Inclusion cyst	3	6
Endometriosis cyst	1	2
Total	50	100

Table 6: Showing Frequency of neoplastic lesions in the present study.

Type of tumor	Number of cases	Percentage
Epithelial stromal tumors		
a. serous tumors		
1. serous cystadenomas	18	51.4
2. serous papillary cystdenomas	3	8.57
3. Borderline serous tumors		
4. Serous cystadenocarcinoma	5	14.28
b. Mucinous tumors		
1. mucinous cystadenomas	6	17.14
2. borderline mucinous tumors	1	2.85
3. mucinous cysadenocarcinoma	1	2.85
c. Endometroidtumor		
Germ Cell Tumor		
Benign cystic teratoma	1	2.85
Dysgerminoma	–	
Struma ovarii	–	
Sex Cord Stromal Tumor		
Granulosa cell tumor	–	
Fibroma	–	
Sertoli cell tumors	–	
Metastatic Tumor	–	
Total	35	100

Discussion

Ovarian mass can have pathological and functional lesions. Lesions of the ovary attain fairly larger size before diagnosis and surgery because of mildness of the symptoms.[8] Ovarian lesions are one of the major pathological findings in all gynaecological specimens. Among gynaecological cancers ovarian cancer is the second leading cause of death.[9] In the present study 85 ovarian lesions of non-neoplastic and neoplastic origins were studied to find out incidence, histogenesis, clinical and pathological features. Among 85 cases 35 cases are neoplastic and 50(58.8%) cases are non neoplastic (41.1%). In our present study among 85 cases, 35(41.1%) cases are neoplastic and 50(58.8%) cases are non neoplastic. Kreuzer GF et al.,[10] reported 82 (40.39%) non-neoplastic lesions out of 203 ovarian lesions and Martinez-Onsurbe P et al.,[11] reported 55 (41.67%) non-neoplastic lesions out of 132 ovarian lesions. Incidence reported in our study regarding non-neoplastic lesions was higher and concurring with the above studies. The majority of our patients were in the age group 20–39 years (49.4% of patients) second largest group of patients were in the age group of 40–60 yrs (34.11% of patients) (Table 1). This is in concordance with the studies of Ramachandran et al (20–39 years –53.0%; 40–59 years –30% of patients)[12] and Pilli et al (20–39 years –58.0%; 40–59 years–30% of patients).[13] In the present study 50 non-neoplastic cystic lesions were encountered. In our study follicular cysts (66%)were the most common non-neoplastic lesion followed by corpus luteum cysts (26%) (Table 5). This is in concordance with the study by Kreuzer GF et al.,[10] and Martinez-Onsurbe P et al.[11] Gurung et al[15] found endometriotic cysts in 17% and corpus luteum cysts in 9.6% of their cases. In our present study endometrioticcysts comprises about 2% of the non neo plastic lesions .There is inverse relation between parity and risk for ovarian cancer. Parous women are at significantly lower risk than nulliparous women. In our study, incidence of nulliparity (25%) is comparable with Misra et al., (16.00%).[14]

The most common presenting complaints in clinically suspected ovarian pathology cases were menstrual irregularities/abnormal vaginal. bleeding in 41 cases (48.2%), pain in abdomen in 34 cases (40%) and abdominal pain with mass per abdomen in 5 cases (5.44%). These findings were similar to a study done by Winter Jo TV et al.[16]

Among neoplastic lesions of ovary the most common lesions were benign compared to malignant cases. serouscystademonas were the most common neoplasms benign neoplasm (51.4%) flowed by mucinous cystadenomas (17%). This is in concordance with a study done by Thakkar NN et al.[17] Serous cystadenoma (21.4%) and mature cystic teratoma (19.9%) are the most common lesions in a study done by Yogambal et al.[18] In our present study 1 borderline mucinous tumor and 6 malignant cases were encountered. Among these the incidence of serous cystadenocarcinoma is high (14.28%). They were in different clinical age group and showed no age predilection. Germ cell tumors, sex cord stromal tumors, metastatic tumors were not encounted in our study. As there were small number of malignant tumors in our study conclusion regarding their pattern of distribution or frequency could not be made out. Histopathological evaluation is the gold standard in studying the pattern of ovarian tumors. Hence clinicopathological correlation would be of immense help to study the pattern, frequency and distribution of these ovarian neoplasms.

Conclusion

To conclude the most common age group was between 20–39 years and benign lesions were more common than malignant lesions. Among neoplastic lesions benign tumors are more common than malignant tumors. Follicular cyst was the most common benign tumor and serous cystdenocarcinoma was the most common malignant tumor. There is an inverse relationship between parity and occurance of ovarian tumor. We had very small number of malignant and borderline cases compared to other studies. We have not been able to elicit the low incidence of malignant lesion in our study. All these clinical parametes, histomorphological patterns, and recent diagnostic techniques like immunohistochemistry can help in early diagnosis and treatment.

Conflict of interest: no conflict of interest..

References

1. Gupta N, Bisht D, Agarwal AK, Sharma VK. Retrospective and prospective study of ovarian tumours and tumour-like lesions. Indian J PatholMicrobiol. 2007;50(3):525–27.
2. Modi D, Rathod GB, Delwadia KN, Goswami HM. Histopathological pattern of neoplastic ovarian lesions. IAIM. 2016;3(1):51–7.
3. Basu P, De P, Mandal S, Ray K, Biswas J. Study of 'patterns of care' of ovarian cancer patients in a specialized cancer institute in Kolkatta, eastern

India. Indian J cancer. 2009;46 (1):28–33.

4. Mondal SK, Banyopadhyay R, Nag DR, Roychowdhury S, Mondal PK, Sinha SK. Histologic pattern, bilaterality and clinical evaluation of 957 ovarian neoplasms: A 10-year study in a tertiary hospital of eastern India. J Can Res Ther. 2011;7:433–37.
5. Ellenson LH, Pirog EC: The female genital tract. Kumar V, Abbas AK, Fausto N, Aster JC. (Eds): Robbins and Cotran Pathologic Basis of Disease. 8th ed. Philadelphia, Elsevier Saunders. 2010:1039–1052.
6. Berek JS, Natarajan S. Ovarian and fallopian tube cancer. In: Berek JS editor. Berekand Novak's gynecology 14thed. New Delhi: Wolters Kluwer health (India) private limited; 2007. p. 1457–547.
7. Scully RE. Ovarian tumours. A review. Am J Pathol. 1977;87(3): 686–719.
8. Bhattarcharya MM, Shinde SD, Purandare VN. A clinicopathological analysis of 270 ovarian tumors. J Postgrad Med. 1980;26:103–7.
9. Sikdar K, Kumar P, Roychowdhary NN. A study of ovarian malignancy: A review of 149 cases. J ObstetGynaecol India. 1981; 30:478–80.
10. Kreuzer GF, Parodowski T, Wurche KD, Flenker H. Neoplastic or Nonneoplastic ovarian cyst The Role of Cytology. ActaCytol. 1995; 39:882–86.
11. Martinez-Onsurbe P, Villaespesa AP, Anquela JMS. Aspiration cytology of 147adnexal cysts with histologic correlation. ActaCytol. 2001;45:941–47.
12. Ramachandran G, Harilal KR, Chinnamma K, Thangavelu H. Ovarian neoplasms -A study of 903 cases. J ObstetGynecol India. 1972;22:309 –15.
13. Pilli GS, Sunitha KP, Dhaded AV, Yenni VV. Ovarian tumors - a study of 282 cases. J Indian Med Associ. 2002;100(7):420–4.
14. Misra RK, Sharma SP, Gupta U, Gaur R, Mishra SD. Pattern of ovarian neoplasm in eastern UP. J ObstetGynecol India. 1991;30: 242–46.
15. Gurung P, Hirachand S, Pradhanang S. Histopathological study of ovarian cystic lesions. J Inst Med. 2013;35(3):44–7.
16. Winter Jo TV, Simmons PS, Podratz C. Surgically treated adnexal masses in infancy, childhood and adolescence. Am J Obstet Gynecol. 1994;170:1780-89.
17. Thakkar NN, Shah SN. Histopathological study of ovarian lesions. Int J Sci Research 2015; 4(10):1745–9.
18. Yogambal M, Arunalatha P, Chandramouleeswari K, Palaniappan V. Ovarian tumors - Incidence and distribution in a tertiary referral center in South India. IOSR J Dent Med Sci. 2014;13(2):1400–3.