ISSN (Print) : 2348–263X
ISSN (Online) : 2348-2648
MVP Journal of Medical Sciences, *Vol 4(1), 26–29, January-June 2017*
DOI: 10.18311/mvpjms/2017/v4i1/724

Histopathological Study of Ovarian Lesions at a Tertiary Health Care Institute

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Abstract

Background: Ovary is the commonest site of neoplastic and nonneoplastic lesion, can present in childhood to postmenopausal age group and accounts for the most prevalent cause of hospital admissions. **Aim:** This study was done to analyse the frequency of ovarian lesions their histological features in a tertiary health care centre. **Materials and Methods:** This is a prospective study of 143 ovarian lesions at tertiary care hospital over a period of 3yr. All the relevant data of patients analysed from hospital record file. **Results:** The total number of ovarian lesions studied during study period was 143 cases, amongst them 110 were non-neoplastic and remaining 33 were neoplastic. The most common non-neoplastic lesion seen was solitary follicular cysts i.e. 77 cases (70%), followed by corpus luteal cysts 14 cases (12.7%). Among the 33 neoplastic ovarian lesions 25(75.7%) cases were benign, 2(6.1%) case was at borderline and 6 (18.2%) cases were malignant. In benign ovarian neoplasm, most commonly seen lesion were serous cystadenoma followed by benign cystic teratoma. In malignant cases, maximum were of serous cystadenocarcinoma, followed by endometrioid carcinoma and 2 cases of sex-cord stromal tumours (fibromas) were observed metastatic tumours. **Conclusion:** Ovarian lesion possess wide gamut of histology. Specific diagnoses are made on routine gross and histological examination.

Keywords: Benign, Malignant, Ovary, Ovary cysts and tumours

1. Introduction

Ovary is an important organ and is concerned with progeny production. The ovary consists of totipotent sex cells and multipotent mesenchymal cells. So when it becomes neoplastic, almost any types of tumour can thus result[1].

Both ovarian neoplastic and non-neoplastic lesions posses a great challenge to gynecological oncologist. Some non-neoplastic lesions of the ovary usually present as a pelvic mass and mimic an ovarian neoplasm. Therefore their proper recognition and classification is important to allow appropriate therapy[2].

Ovarian cancer is the seventh leading cause of cancer death (age standardized mortality rate: 4/100,000) among women worldwide[3,4].

In India it comprises up to 8.7% of cancers in different parts of the country[3,4].

Histopathological presentation of ovarian tumours is variable which lead to its detection in advanced stage where neither effective surgery nor chemotherapy can be done[5,6].

Incidence of invasive epithelial ovarian cancer peaks at 50-60 yr of age. In postmenopausal women about 30% of ovarian neoplasms are malignant, whereas in the premenopausal patient only about 7% of ovarian epithelial tumours are frankly malignant[7].

Prognostically ovarian tumours in women under 40 yr of age have greater a chance of recovery than older patient[8]. Most patients with ovarian cysts are asymptomatic, with the cysts being discovered incidentally during ultrasound or routine pelvic examination. Some cysts, however, may be associated with a range of symptoms, sometimes severe, although malignant ovarian cysts commonly do not cause symptoms until they reach an advanced stage.

Pain or discomfort may occur in the lower abdomen. Cyst rupture can lead to peritoneal signs, abdominal distension, and bleeding that is usually self-limited[9,10].

Polycystic Ovary Syndrome is one of the most common endocrinopathy affecting women. The estimated prevalence in women of reproductive age is 5-10%. Oligomenorrhea, hirsutism and obesity together with enlarged polycystic ovary (PCO) were the diagnostic criteria of PCOS[11].

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2. Materials and Methods

A prospective clinico-pathological study of 143 cases of nonneoplastic and neoplastic lesions of ovary was conducted in Department of pathology over the period of three years. The materials for this study, 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 2002.

3. Results

Amongst 143 cases studied during study period, 110 were nonneoplastic and remaining 33 were neoplastic. Most of the non-neoplastic 110 (70%) lesions of ovary were incidental findings. The most common non-neoplastic lesion found was solitary follicular cysts followed by corpus luteal cysts.

Among the 70 neoplastic ovarian lesions 25(75.7%) cases were benign, 2(6.1%) case was at borderline and 6 (18.2%) cases were malignant [Table 3].

In 25 benign ovarian neoplasms, most common seen lesion was serous cystadenoma with 18 cases (54.5%) followed by benign cystic teratoma with 3 cases (9.1%) and 2cases each of mucinous cystadenoma and fibroma. Out of total 6 malignant cases, maximum 4 cases were of serous cystadenocarcinoma followed by 2 cases of endometrioid carcinomas and 2 cases of borderline serous tumour. Most of the benign tumour were observed in the age group of 31-40yr, and most of the malignant tumours cases were common in elderly (>40 years) age group.

On gross examination 44.78% cases were cystic, 22.39% were solid and 32.83% cases were partly solid and partly cystic.

Table 1. Distribution of various non-neoplastic lessions

Types of Non-Neoplastic Lession	No. of Cases	Percentage %
Simple cyst	11	10
Follicular cyst	77	70
Luteal cyst	14	12.7
Haemorrhagic cyst	6	5.5
Endometrioid cyst	2	1.8
Total	**110**	**100**

Table 2. Distribution of various types of ovarian tumours

Type of Ovarian Tumours	Frequency	Percentage
Surface Epithelial Tumours	25	84.8
Germ Cell Tumour	3	9.1
Sex-Cord Stromal Tumour	2	6.1
Total	**33**	**100**

4. Discussion

Ovarian cancer is the second leading cause of mortality among all gynecological cancers[12]. Due to similar clinical presentations there is confusion in the diagnosis of non-neoplastic and neoplastic lesions of ovary although it is diagnosed as a mass or cystic lesion on ultrasonography and hence removed prophylactically in routine oophorectomies and hysterectomies[13].

Table 3. Frequency Distribution of Ovarian Tumours

Type of Ovarian Tumours		Type of lesion	Total number of cases	Percentage(%)
Surface Epithelial Tumour	Benign	Serous tumour	18	54.5
		Mucinous Tumour	2	6.1
	Borderline	Serous Tumour	2	6.1
	Malignant	Serous Tumour	4	12.1
		Endometrioid Tumour	2	6.1
Germ Cell Tumour		Teratoma	3	9.1
Sex-Cord Stromal Tumour		Fibroma	2	6.1
Total			**33**	**100**

In current study 143 ovarian lesions of non-neoplastic and neoplastic origins were evaluated to find out incidence, histogenesis and pathological features.

Kreuzer GF et al.,[14] reported 82 (40.39%) non-neoplastic lesions out of 203 ovarian lesions and Martinez-Onsurbe P, et al.,[15] 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 non-neoplastic lesions like follicular or corpus luteum cysts are the commonly encountered conditions.

In current study out of 110 non-neoplastic lesions 77 follicular cysts (70%) were reported and 14 corpus luteal cysts (12.7%) were reported.

Table 4. Comparative incidence of non-neoplastic lesions

	Kreuzer et al.	Martinez-Onsurbe et al.	Gupta N et al.	Present study
Follicular cyst	55	55		70
Luteal Cyst	45	45		12.7
Both follicular and luteal cyst			82.2	82.7

Table 5. Comparative incidence of neoplastic lesions

	Gupt et al.	Pilli et al.	Present Study
Benign	72.9	75.2	75.7
Borderline	4.1	2.8	6.06
Malignant	22.9	23.6	18.2

Table 6. Comparative incidence of overall (benign and malignant) ovarian tumours

	Bhuvanesh et al.	Pilli et al.	Gupta et al.	Present Study
Surface Epithelial Tumour	78.7	70.9	65.6	84.8
Germ Cell Tumour	10.85	21.2	23.9	9.1
Sex-Cord Stromal Tumour	7.14	6.7	8.3	6.1

Incidence of these cysts were accordance with to Kreuzer GF et al., (55% Follicular cyst and 45% corpus luteal cyst) and Martinez-Onsurbe P et al., (55% follicular cyst and 45% corpus luteal cyst). Gupta N et al.,[19] reported follicular and corpus luteal cyst (80.2%). In the present study the incidence was 97.26%, which was higher than this study.

In clinically suspected ovarian pathology cases, the most common clinical symptoms were menstrual irregularities/ abnormal vaginal bleeding, pain in abdomen and mass per abdomen. These findings were similar to Winter Jo TV et al.,[16] study.

In the present study, 33 neoplastic lesions were diagnosed most common was benign (75.7%) followed by, borderline malignancy (6.1%) and malignant tumour (18.2%).

Ovarian tumour may occur at any age, including infancy and childhood. Incidence rate, however increase with age, with the greatest number of new cases being diagnosed beyond 4th and 5th decade. In our study, the youngest patient was of 11yr and oldest of 70yr, which was concordance with Couto F et al.[17]

Based on histomorphological features, incidence of surface epithelial tumours were commonest (84.8%) followed by germ cell tumours (9.1%) and sex cord (6.1%). atic (4.28%). Similar observations were seen in other studies. Our study reveals that the presentation of ovarian tumours was variable. Some of the ovarian tumours were incidentally diagnosed on ultrasound whereas others may be symptomatic like lump/ pain in abdomen.

In Benign and malignant ovarian neoplasm, lump in abdomen was the most common complaint, followed pain in abdomen. These findings were in accordance with other studies[18].

Grossly, it was found in our study that benign tumours were cystic as compared to malignant, which were solid in consistency followed by partly cystic and partly solid which were mostly in malignant tumour which is in accordance with other studies[18].

Ovarian cancers are called as "silent killer" as in most of the primary ovarian tumour they remain asymptomatic until the advanced stage. However, histomorphological study of tumour is still today a gold standard method, these observations and results proved to be valuable base line information regarding frequency and pattern of ovarian tumours.

5. Conclusion

To conclude, number of various clinical parameters such as age of the patient, presenting complaints, location of lump, dimensions of lump, on one hand and histological type of ovarian neoplasm on the other hand are all interrelated. All these clinical and histomorphological parameters and advanced newer diagnostic modalities can help to early diagnosis and to plan the line of treatment and also have prognostic significance. Because of the geographic location, poverty and illiteracy, patients seek medical advice late in rural health facility. So, awareness among public and doctors, educating people,

passive surveillance, and community screening facility will be helpful in early detection of the ovarian lesions and tumours.

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