

## Pattern Of Neoplastic And Non Neoplastic Lesions Of Ovary – Study In A Tertiary Care Centre, South Tamilnadu, India.

Dr. S. Germin Prabha<sup>1</sup>, Dr. P. Leo David<sup>2</sup>, Dr. Lauvanya<sup>3</sup>

<sup>1</sup>(Associate Professor, Department of Pathology, Kanyakumari Government Medical College, Tamil Nadu)

<sup>2</sup>(Professor/Head, Department of Pathology, Kanyakumari Government Medical College, Tamil Nadu)

<sup>3</sup>(Assistant Professor, Department of Pathology, Kanyakumari Government Medical College, Tamil Nadu)

Corresponding Author: Dr. P. Leo David

### Abstract

**Background:** Ovaries are the site of both neoplastic and non neoplastic lesions. Diseases of ovaries are one of the commonest surgical problems in females. Proper correlation of age, clinical features, gross and various histological features are vital for an early and accurate diagnosis.

**Aims and objectives:** This study was done to categorise ovarian lesions based on gross and histopathological features and to correlate both neoplastic and non neoplastic lesions with age.

**Materials and methods:** This was a prospective study conducted over a period of two years from January 2017 to December 2018 and included 154 cases of ovarian lesions.

**Results:** The results were tabulated using percentage. Most of the specimen were cystic. The non neoplastic lesions were of small size when compared with the neoplastic lesions and were scattered in the age group of 20 to 40 yrs. Among the neoplastic lesions majority were benign and belonged to the serous tumors group.

**Conclusion:** A combination of clinical parameters, gross and histopathological examination is vital for the complete diagnosis of ovarian lesions.

**Key words:** Ovarian lesions, gross, histopathological patterns.

Date of Submission: 22-02-2019

Date of acceptance: 08-03-2019

### I. Introduction

Ovaries are paired organs located in the pelvis on the sides of the uterus close to lateral pelvic wall. Ovarian diseases are broadly classified as cysts, inflammatory lesions and neoplasms. Ovarian malignancies are the third most common site of primary malignancy in Indian females. Unlike the malignancies of cervix and uterus, not much is known about the etiopathogenesis of ovarian tumors and the mortality rate is also higher. The risk factors include nulliparity and heredity. Gross pathology is the recognition and description of abnormalities in the specimen and aids in establishing a presumptive diagnosis. In this study the diversity of histomorphological pattern of ovarian lesions in relation to their age and size of the tumors on gross examination is analysed.

### II. Materials And Methods

It is a prospective study based on clinical details, gross features and histomorphological evaluation of specimens of ovary received in the department of pathology, attached with the tertiary care hospital, Kanyakumari Govt Medical College Hospital, during the period of two years from 2017 to 2018. Most of the specimens were hysterectomy specimens with either unilateral or bilateral ovaries. The specimens fixed in 10% formalin were grossed according to standard grossing protocols. The tissues were submitted for routine tissue processing and embedding in paraffin wax. The sections of 5 microns thickness were cut using rotary microtome and stained with Hematoxylin and Eosin. The slides were reported by two independent pathologists [authors].

### III. Results

The age of the patients ranged from 18 to 75 years. Benign lesions were observed in the age group of 20-40 years and malignant lesions were seen in >50 years. (Table 1)

**TABLE 1:** Age wise distribution of patients with ovarian masses.

Age	Non-Neoplastic	%	Neoplastic	%
<30	19	12.34	28	18.18
31-40	18	11.69	23	14.94
41-50	19	12.34	15	9.74
>50	10	6.49	22	14.28

Among the 154 specimens,15 (9.74%) were bilateral.(Table 2)

**TABLE 2:** Laterality of ovarian masses

	U/L	B/L
Non-neoplastic	52	8
Benign	77	2
Non-neoplastic /neoplastic		5

On gross examination , 145 specimens (94.15%) were cystic and 9 (5.85%) showed both solid and cystic areas.(Table 3)

**TABLE 3:** Distribution of cystic and solid areas on gross examination.

Category	Cystic	With solid component
Non-neoplastic	65	1
Benign	80	4
Malignant	-	4

On measuring the size of the lesions, 51 cases(33.12%) were less than 4cms size and 6 cases (3.9%) were more than 20 cms size.(Table 4)

**TABLE 4:** Size ranges of ovarian masses

Size	Non-Neoplastic	%	Neoplastic	%
<4	34	22.07	17	11.04
5-9	29	18.83	35	22.73
10-19	3	1.94	30	19.48
>20			6	3.9

Out of the 154 samples taken for study, 66 (42.85%) were non neoplastic and 88 (57.15%) were neoplastic .The neoplastic lesions outnumbered the non neoplastic lesions.(Table 5)

**TABLE 5:** Distribution of Non-neoplastic and Neoplastic ovarian masses

Category	No.of cases	%
Non-neoplastic	66	42.9
Benign	83	53.9
Borderline	1	0.6
Malignant	4	2.6

Among the non-neoplastic lesions,the follicular cysts 29(43.93%)were common lesions followed by haemorrhagic cysts 24(36.36%) and corpus luteal cysts( 16.66% ),TO abscess 1(1.51%) and a case of para mesonephric cyst.(1.51%).(Table 6)

**TABLE 6:** Distribution of Non-neoplastic ovarian masses.

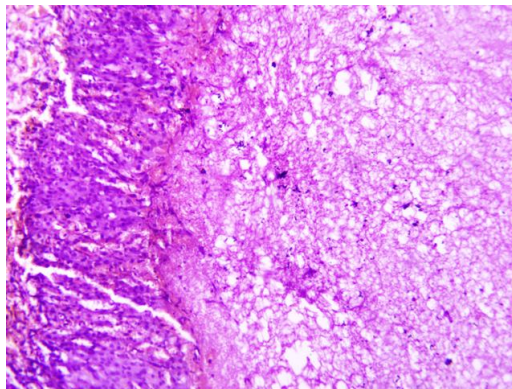
	Number of cases	%
Follicular	29	43.93%
Hemorrhagic	24	36.36%
Corpus luteal	11	16.66%
Para mesonephric cyst	1	1.51%
Tubo-Ovarian abscess	1	1.51%

In our study,we found neoplastic lesions of ovary in 88 cases . Among these 83(94.32%) cases were benign tumours . 1(1.14 % ) case was borderline tumour and 4 (4.54 % ) were malignant. In the histopathological sub types, 55 (62.5 %)of them were epithelial tumours followed by germ cell tumours 29.4% & only one sex cord stromal cell tumour. Among the surface epithelial tumours, benign serous tumours (41.46%) were the common type followed by benign mucinous tumours(21.9%) . Only 1 malignant serous tumour and 1 malignant mucinous tumour were seen (Table 7)

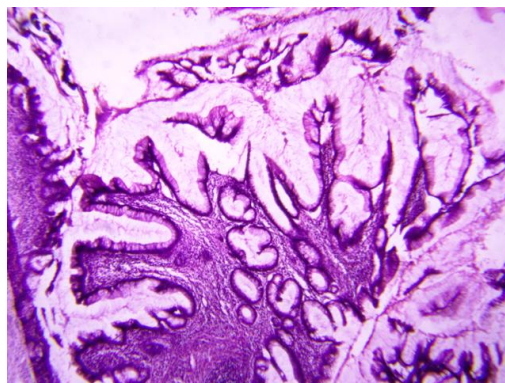
**TABLE 7:** Histological types of ovarian masses

Histopathology cell type	No.of cases	%
Serous	34	38.64
Mucinous	18	20.45
Germ cell	26	29.55
Sex-cord/stromal	1	1.14
Borderline mucinous	1	1.14
Serous carcinoma	1	1.14
Mucous carcinoma	1	1.14
Mixed germ cell	1	1.14
Undifferentiated ca	1	1.14
Others	4	4.55

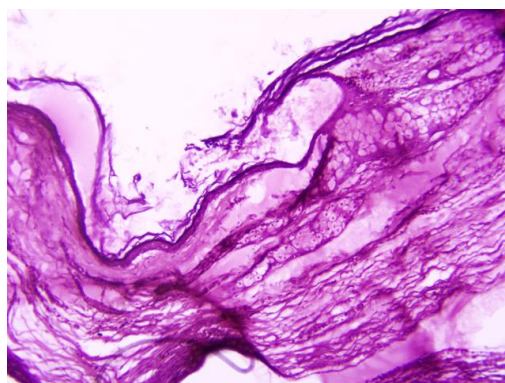
In this study, total number of 26 germ cell tumours were reported and among them the most common tumor was benign cystic teratoma .Only one undifferentiated carcinoma was reported.



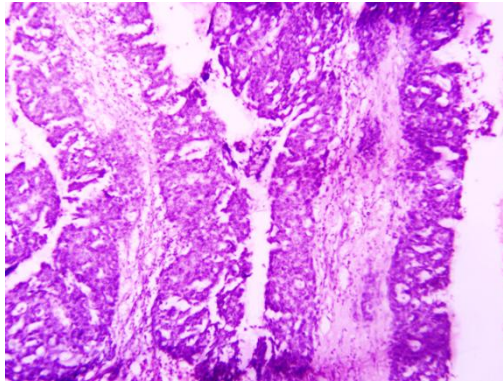
**Fig 1:** Corpus luteal cyst showing cyst wall lined by luteinised granulosa cells(H & E 40 X)



**Fig 2:** Mucinous cystadenoma of ovary showing cyst wall and septa lined by single layer of tall columnar mucin secreting epithelium with basally placed nuclei and large apical mucinous vacuoles. (H & E 10 X)



**Fig 3:** Benign cystic teratoma showing cyst wall lined by stratified squamous epithelium and sebaceous glands(H & E 10 X)



**Fig 4:** Papillary serous cystadenocarcinoma of ovary showing stratification of low columnar epithelium and stromal invasion by anaplastic cells(H & E 40 X)

#### **IV. Discussion**

Diagnosis of ovarian malignancies are usually made at a later stage since most of them are asymptomatic in the earlier period. But the mortality rate is high when compared to other malignancies of female genital tract. Majority of the ovarian specimens received at our department were removed during hysterectomy. In view of the similar clinical presentation and radiological findings, histopathological examination plays a significant role in differentiating non-neoplastic lesions from neoplastic lesions.

In the current study among the 154 samples received, 9.74% were bilateral. It correlates with the study of Prakash A. et al in which 9.2% are bilateral.

On gross examination, 94.15% were cystic and 5.8% both solid and cystic. Most of the non neoplastic cysts were less than 4 cms in size. There is a 100 % correlation for non neoplastic ovarian cysts on gross and microscopic examination. It correlates with the study of Chidambaram Chockalingam et al<sup>4</sup>.

In our study the neoplastic lesions (57.15%) outnumbered the non neoplastic lesions (42.85 %). It is similar to the study by Prakash A. et al<sup>8</sup> where 44.1% were non neoplastic. But it is in contrast to the study by Geetha Maurya et al<sup>9</sup> in which non neoplastic lesions are more.

In our study, among the non neoplastic lesions, follicular cysts were common followed by hemorrhagic cysts and then by corpus luteal cysts which is similar to the study of Geetha Maurya et al<sup>9</sup>. But in the study by Rasheed Fathima et al<sup>5</sup>, corpus luteal cysts formed the large group. Most of these lesions were seen in ovaries removed along with the hysterectomy specimen.

In the present study, among the neoplastic lesions of ovary 94.32% were benign lesions which is similar to the study of Prakash A. et al<sup>8</sup> in which 96.8% were benign lesions and in discordance with the study of Sheema Sheikh et al<sup>7</sup> in which 80.3% were benign.

In our study 1.14% cases were borderline lesions, which is comparable to the study of Nirali et al<sup>6</sup> in which 2% are borderline tumours.

Malignant lesions are only 4.54% which is much lesser when compared with the study of Nirali et al<sup>6</sup>, Amod et al<sup>1</sup> and Sheema Sheikh et al<sup>7</sup>. But similar to the study of Mrinalin singh et al<sup>10</sup> (4 %).

Among the benign tumours, surface epithelial tumours were common which was similar to the study of Geetha Maurya et al<sup>9</sup>. Among the surface epithelial tumours, most of them were benign serous tumours which was similar to the study by Bagyalakshmi et al<sup>3</sup> but in discordance with Nishal et al<sup>11</sup> in which benign mucinous tumours were common.

In the present study 29.4% of the tumours were germ cell tumours, which was similar to the study by Sheema Sheikh et al<sup>7</sup> where 31.1% of the tumours were germ cell tumours. In a study by Mrinalin et al<sup>10</sup>, benign cystic teratoma was common.

In the present study only 4 malignant tumours were reported. This included a case of serous carcinoma, a mucinous carcinoma, a mixed germ cell tumour (yolk sac tumour and mature cystic teratoma) and an undifferentiated carcinoma.

#### **V. Conclusion**

Many non neoplastic lesions mimic ovarian neoplasms on clinical presentation, radiological examination and during surgery. At times it is difficult to diagnose the nature of the ovarian tumors pre-operatively.

Though gross examination is not a diagnostic test on its own, it helps in presumptive diagnosis and in selecting the tissue to be submitted for histopathologic study. With the advent of molecular pathology, the traditional skill of gross examination is rapidly declining among young pathologists. This article lays emphasis on the importance of gross examination.

Results of the present study are comparable to other similar studies with relation to age, laterality, gross features and microscopy.

Effective therapeutic management of ovarian malignancies continues to be a challenge to the oncologist. An accurate histopathological diagnosis combined with clinical staging will help in rendering prompt and appropriate treatment to the patient.

### References

- [1]. Amod sawant et al Histopathological Study of Ovarian Lesions at a Tertiary Health Care Institute . MVP Journal of medical sciences vol4(1) 26 -29, January –June 2017
- [2]. Annapurna Parvatala et al, Study of Non Neoplastic Lesions of ovary .IOSR Journal of Dental and Medical sciences (IOSR-JDMS) volume 14 (Jan 2015)
- [3]. Bhagyalakshmi.A. et al.Prospective study of histopathological patterns of ovarian tumors in a tertiary care centre.International Journal of Research in Medical Sciences.2014 May 2(2);448 -456
- [4]. Chidambaram Choccallingam ,et al – Role of gross pathology in ovarian cystic lesions; Gross and microscopic pathology of three ovarian cystic lesions SRJM 2015
- [5]. Rasheed fathima et al . Study of histomorphological pattern of ovarian neoplastic and non neoplastic lesions. International Journal of Research in Medical Sciences 2017May ;5(5)2095-2098
- [6]. Nirali N .Thakkar et al Histopathological Study of Ovarian Lesions .International Journal of Science and Research ( IJSR) ISSN(Online):2319-7064.
- [7]. Sheema Sheilkh et al .Histopathological spectrum of ovarian tumours from a referral hospital in Kashmir valley ,India .International Journal of Research in Medical sciences 2017 May 5(5):2110-2114
- [8]. Akina Prakash .et al on Histopathological study of ovarian lesion in a tertiary care center in Hyderabad, India ,a retrospective five year study. International journal of Advances in Medicine. 2017 Jun 4(3)745-749
- [9]. Geetha Maurya et al ,Pattern of neoplastic lesion of ovary –a five year study in a tertiary care centre of rural india .International Journal of Research in Medical sciences 2018 July6(7)2418-2422
- [10]. Mrinalin singh et al on histopathological analysis of neoplastic and non neoplastic lesion of ovary –A 4 year study in eastern Nepal .Birat journal of Health sciences 2017 vol2 no 2
- [11]. Nishal AJ et al on Analysis of spectrum of ovarian tumors:55 cases. International Journal of Research in Medical Sciences 2015 Oct;3(10):2714-2717

Dr.S.Germin Prabha. “Pattern Of Neoplastic And Non Neoplastic Lesions Of Ovary – Study In A Tertiary Care Centre, South Tamilnadu, India.” IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 3, 2019, pp 23-27.