

# A Clinicopathologic Study To Evaluate Neoplastic And Non- Neoplastic Ovarian Lesions In A Tertiary Care Hospital

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## ABSTRACT

**Background:** Ovarian cancer is the most frequent cause of death from gynaecological cancers and the fourth most frequent cause of death from cancer in women in Europe, United States and India. The present study was conducted to assess distribution of neoplastic and non- neoplastic ovarian lesions.

**Materials & Methods:** 74 patients age ranged 18- 48 years was recorded. The histological characterization of ovarian tumour was done according to the International Classification of Diseases, (WHO Classification, 1995).

**Results:** Age ranged 18- 28 years had 24, 28-38 years had 40 and 38-48 years had 10. Common non- neoplastic lesions were simple serous cyst in 13, luteal cyst in 20, salpingo-oophoritis in 3, hemorrhagic cyst in 8 and endometriosis in 6 patients. Common neoplastic lesions were germ cell tumor seen in 12, epithelial tumors in 6, sex cord stromal tumour in 4 and metastatic tumors in 2 patients. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Most common non- neoplastic lesions was simple serous cyst, luteal cyst and hemorrhagic cyst and neoplastic lesions was germ cell tumor.

**Key words:** Neoplastic lesions, Luteal cyst, Ovary

## 1. INTRODUCTION

The incidence of cancer is increasing in developing countries. There are marked differences in distribution of different cancers in different regions of the world.<sup>1</sup> Ovarian cancer is the most frequent cause of death from gynaecological cancers and the fourth most frequent cause of death from cancer in women in Europe, United States and India.<sup>2</sup>

The lifetime risk of ovarian cancer in women with no family history is 1.6%; with one affected first degree relative is 5%, and 7% with two or more affected first degree relatives.<sup>3</sup>

Ovarian tumours are insidious in onset and usually diagnosed at a late stage. They are rare in young age group. They commonly present with abdominal pain, a lump or menstrual irregularities. In addition to biopsy, various diagnostic modalities include transvaginal ultrasonography, MRI, positron emission tomography, and markers like serum CA 125.<sup>4</sup>

Surface epithelial tumors account for 50.0 – 55.0% of all ovarian tumors and their malignant counterpart for approximately 90.0% of all ovarian cancers in Western world whereas this figure is 46.0 – 50.0% and 70.0 – 75.0% respectively in Japan.<sup>5</sup> Similarly mucinous tumors account for 12.0 – 15.0% of all ovarian tumors in Western world. This figure is 20.0 – 23.0%

for Japan. Germ cell tumors account for 30.0% of primary ovarian tumors and malignant germ cell tumors account for 3.0% of all ovarian cancers in Western world.<sup>6</sup> The present study was conducted to assess distribution of neoplastic and non- neoplastic ovarian lesions.

## 2. MATERIALS & METHODS

The present study comprised of 74 patients age ranged 18- 48 years in the gynaecology and pathology department. All enrolled patients were informed regarding the study and their written consent was obtained.

Particulars of patients such as name, age, gender etc. was recorded. The histological characterization of ovarian tumour was done according to the International Classification of Diseases, (WHO Classification, 1995). Results of the study was tabulated and subjected to statistical analysis. P value less than 0.05 was significant ( $P < 0.05$ ).

## 3. RESULTS

Table I Distribution of patients

Age years (Years)	Number	P value
18-28	24	0.01
28-38	40	
38-48	10	

Table I shows that age ranged 18- 28 years had 24, 28-38 years had 40 and 38-48 years had 10. The difference was significant ( $P < 0.05$ ).

Table II Distribution of non-neoplastic ovarian lesions

Lesions	Number	P value
Simple serous cyst	13	0.01
Luteal cyst	20	
Salpingo-oophoritis	3	
Hemorrhagic cyst	8	
Endometriosis	6	

Table II, graph II shows that common non- neoplastic lesions were simple serous cyst in 13, luteal cyst in 20, salpingo-oophoritis in 3, hemorrhagic cyst in 8 and endometriosis in 6 patients. The difference was significant ( $P < 0.05$ ).

Graph I Distribution of non-neoplastic ovarian lesions

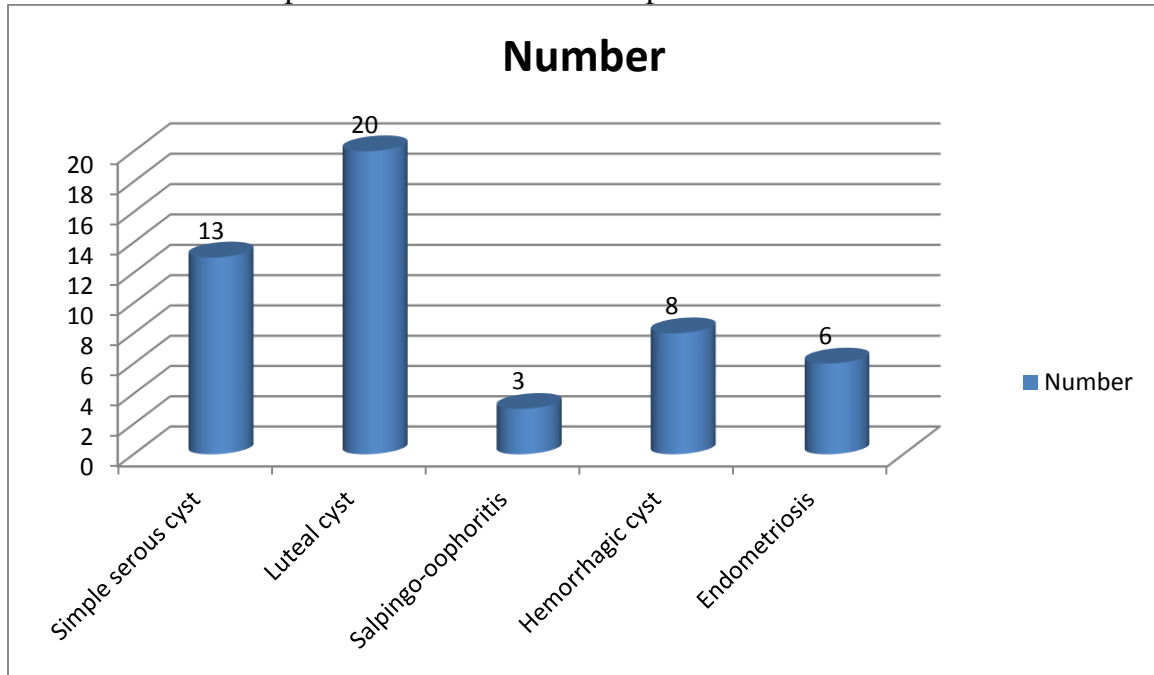
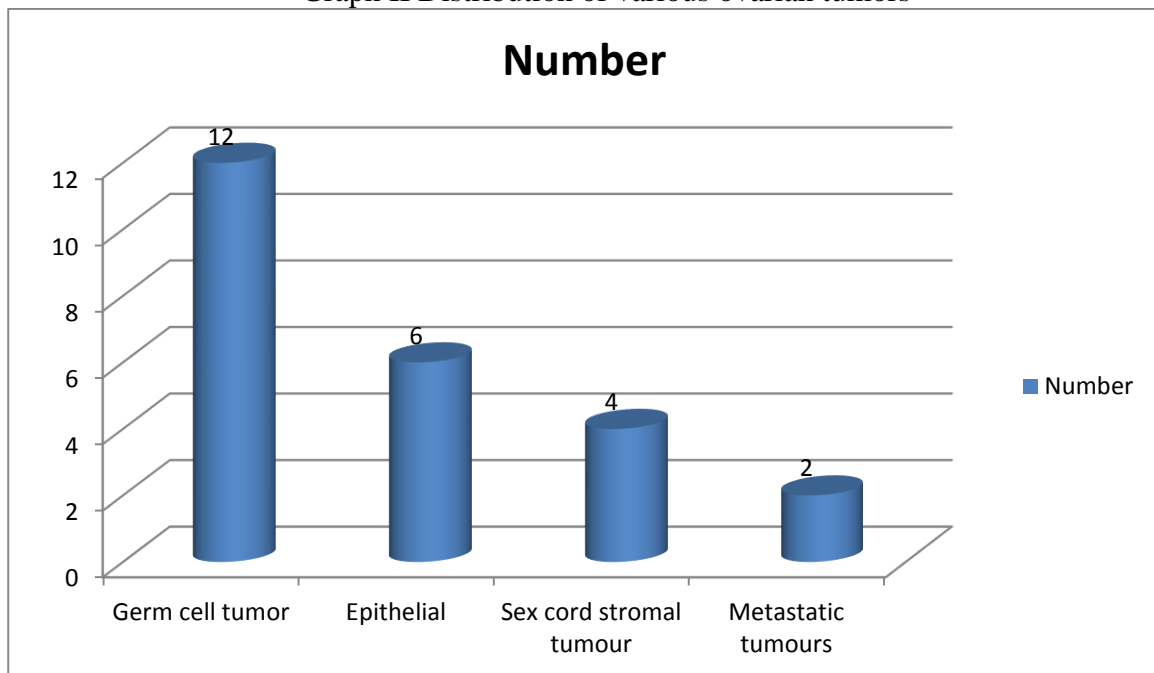


Table III Distribution of various ovarian tumors

Lesions	Number	P value
Germ cell tumor	12	0.01
Epithelial	6	
Sex cord stromal tumour	4	
Metastatic tumours	2	

Table III, graph II shows that common neoplastic lesions were germ cell tumor seen in 12, epithelial tumors in 6, sex cord stromal tumour in 4 and metastatic tumors in 2 patients. The difference was significant ( $P < 0.05$ ).

Graph II Distribution of various ovarian tumors



#### 4. DISCUSSION

Tumor is defined as an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of normal tissue and persists in the same excessive manner after cessation of stimuli which evoked the change.<sup>7</sup> Ovarian tumors are tumors arising from any of the three components of ovary i.e. surface epithelium, germ cells and the stroma of the ovary including sex cords; these can also be secondary or metastatic tumors of ovary.<sup>8</sup> A tumor is said to be benign when its gross and microscopic appearances are considered relatively innocent, implying that it will remain localized, will not spread to other sites, is amenable to local surgical removal. Malignant tumors can invade and destroy adjacent structures and spread to distant sites to cause death.<sup>9</sup> The present study was conducted to assess distribution of neoplastic and non- neoplastic ovarian lesions.

In present study, age ranged 18- 28 years had 24, 28-38 years had 40 and 38-48 years had 10. Common non- neoplastic lesions were simple serous cyst in 13, luteal cyst in 20, salpingo-oophoritis in 3, hemorrhagic cyst in 6 and endometriosis in 6 patients. Ashraf et al<sup>10</sup> retrospective case – series study was conducted on 212 cases of ovarian masses. Mean age of the subjects was 35.6 years, ranging from 4 to 80 years. In a total of 212 cases of ovarian masses, 85 (40.09%) were non-neoplastic and 127 (59.91%) were neoplastic. Among neoplastic lesions, 64.57% (82/127) were benign and 35.43% (45/127) were malignant. The commonest non-neoplastic lesion was luteal cyst (38/85) followed by simple serous cyst (30/85). The commonest benign tumour was dermoid cyst (31/82) followed by serous cystadenomas (20/82). The commonest malignant tumour was serous cystadenocarcinoma (11/45) followed by mucinous cystadenocarcinoma (9/45). Neoplastic lesions were more common than non-neoplastic lesions, while benign tumours outnumbered the malignant ones. The commonest benign tumour was dermoid cyst and malignant was serous cystadenocarcinoma. The commonest non-neoplastic lesion was luteal cyst. Among histological types of ovarian tumours, surface epithelial tumours dominated the other types.

We found that common neoplastic lesions were germ cell tumor seen in 12, epithelial tumors in 6, sex cord stromal tumour in 4 and metastatic tumors in 2 patients. Khan et al<sup>11</sup> determined the frequency of Ovarian Tumors according to WHO Histological classification and their relation to age at diagnosis in almost one year. In 95 female patients diagnosed with ovarian tumors, the mean age was found to be  $29.58 \pm 11.493$  with a range of 3-65 years. Tumors were most common between the ages of 15 to 30 years. The highest rates of malignancy were in the 0-15 and 45-60 age groups. About 78.9% of the tumors (75/95) were benign, 1.1% (1/95) were borderline and 20% (19/95) were malignant (Figure 3), 72.6% (69/95) were epithelial tumors, 23.2% (22/95) were germ cell and 4.2% (4/95) were sex cord stromal tumors (Figure 4). Among the 95 cases, serous tumors were the most common (49.5%), followed by mucinous (16.8%) and teratomas (15.8%). Ovarian tumors were common between the age of 15 to 29 years. Benign neoplastic lesions were more common than malignant neoplastic lesions. The frequency of malignant and benign ovarian neoplasms found in our research differed from other studies conducted in Pakistan. There is a significant association of ovarian tumors in age less than 30 year as compared to older age groups.

The shortcoming of the study is small sample size.

#### 5. CONCLUSION

Authors found that most common non- neoplastic lesions was simple serous cyst, luteal cyst and hemorrhagic cyst and neoplastic lesions was germ cell tumor.

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