

## Frequency and pattern of ovarian tumours

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### ABSTRACT

**Objective:** To evaluate the frequency and types of ovarian tumours with respect to age.

**Methodology:** All the ovarian tumours which were diagnosed in the Department of Pathology, Muhammad Medical College Hospital Mirpurkhas over a five years period from January 2005 to December 2009 were reviewed.

**Results:** A total of 227 cases were reviewed. 181 lesions were found benign tumours and 46 were malignant. Surface epithelial tumours were common benign tumours and consist of serous cyst adenoma with a frequency of 55% followed by mucinous cyst adenoma 20%. Benign germ cell tumours was 25%. In malignant tumours, serous cyst adenocarcinoma was the commonest malignant lesion 38% followed by 17% cases of mucinous cyst adenocarcinoma and one (2%) case of clear cell carcinoma. Germ cell tumours were composed of immature teratoma 11%, yolk sac tumour 9%, mixed germ cell tumour 4% & a single case of dysgerminoma with a frequency of 2%. The frequency of sex-cord stromal tumours was 17%. Most of the benign tumours were found in 3<sup>rd</sup> and 4<sup>th</sup> decades of life. However maximum number of malignant tumours was seen in 5<sup>th</sup> and 6<sup>th</sup> decades.

**Conclusion:** In this study surface epithelial tumours were the major histological type of ovarian tumours followed by germ cell tumours.

**KEY WORDS:** Ovary, Serous tumours, Mucinous tumours, Germ cell tumours.

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### INTRODUCTION

Ovarian tumours account for a significant proportion of gynaecological morbidity & mortality. The benign ovarian cysts are the fourth most prevalent gynaecological cause of hospital admissions.<sup>1</sup>

Tumours of the ovary characterized by a variety of histological features and prognosis.<sup>2</sup> Japanese

women have reported lower incidence of ovarian cancer, especially of epithelial type than US or European women.<sup>3</sup> Approximately 90% of all the ovarian tumours are benign. Ovarian carcinoma represents the sixth most common female cancer and the fourth leading cause of death due to cancers in women.<sup>4</sup>

The relative frequency of malignant tumours including ovarian cancer in Pakistan has increased over the years.<sup>5</sup> It has been rated number three cancer for females in Karachi South.<sup>6</sup> However a study done at Armed Forces Institute Of Pathology (AFIP) Rawalpindi,<sup>7</sup> ovarian carcinoma was on top of the list to account for 37.05% of the gynaecologic malignant tumours.

The vast majority of epithelial ovarian carcinomas are diagnosed in post menopausal women with a median age of 63 years. Although etiology remains unknown hormonal, environmental and genetic factors play an important role in the development of ovarian cancer.<sup>8</sup>

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Muhammad Medical College Hospital Mirpurkhas is a 500 bedded teaching hospital. This study was carried out in the Pathology Department of this institute. The purpose of this study was to see the frequency and pattern of ovarian tumours in our setup and compare it with the pattern reported within the country and abroad.

### METHODOLOGY

This was a retrospective study which included all the ovarian tumours which were received in the Department of Pathology, Muhammad Medical College Hospital Mirpurkhas over a 5 years period from January 2005 to December 2009. Total number of cases was 227. The hematoxylin and eosin (H&E) stained sections were reviewed to classify the tumours. Special stains like PAS was used to help in reaching a specific diagnosis.

### RESULTS

We reviewed 227 ovarian tumours. Out of these 181(80%) were benign and 46 (20%) were diagnosed as malignant tumours. Surface epithelial tumours were found common benign tumours 75% followed by germ cell tumours 25%. Serous cyst adenoma found to be the commonest surface epithelial tumour 99 (55%) followed by mucinous cyst adenoma 36 (20%). Germ cell tumours composed of 46 (25%) cases of mature cystic teratoma (Table-I).

In malignant tumours, serous cyst adenocarcinoma 17 (38%) was the commonest malignant tumour followed by 8 (17%) cases of mucinous cyst adenocarcinoma and 1 (2%) case of clear cell carcinoma. Germ cell tumours were composed of 5 (11%) cases of immature teratoma followed by yolk sac tumours 4(9%), mixed germ cell tumours 2(4%) & a single (2%) case of dysgerminoma. The frequency of sex-cord stromal tumours was 8(17%) which consists of granulosa cell tumors (Table-II).

There was no tumour determined with border line malignancy. Most of our patients of benign tumours were found in 3<sup>rd</sup> and 4<sup>th</sup> decades of life. However maximum number of malignant tumours was seen in 5<sup>th</sup> & 6<sup>th</sup> decades (Figure-1).

Table-I: Distribution of 181 benign lesions.

Type	No. of Cases	%
i. Surface epithelial tumours	135	75
Serous cyst adenoma	99	55
Mucinous cyst adenoma	36	20
ii. Germ cell tumours	46	25
Mature cystic teratoma	46	25

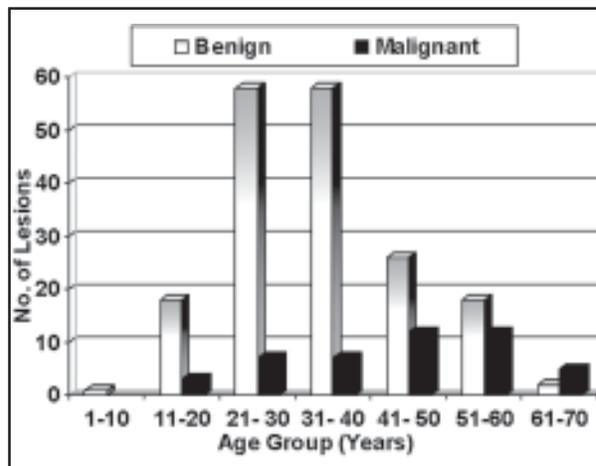


Fig-1: Age Distribution of 227 Ovarian Tumours.

### DISCUSSION

Ovarian tumour is quite a common reason for gynecological admission all over the world. The main problem with the situation is that, patients present either with advanced malignancy or with some sort of complication in benign tumours.<sup>1</sup>

In our study the frequency of benign ovarian tumours was found to be 80% where as malignant tumours constituted 20%. These results are in agreement with the findings of Sultana et al<sup>9</sup> who reported benign and malignant tumours as 79% and 21% respectively. Our findings are also comparable to the results of Women and Children Hospital Abbotabad, where reported frequency of benign tumours was 77%.<sup>10</sup>

No statistically significant difference was observed with respect to benign and malignant ovarian tumours when our study was compared to a study carried out at Armed Forces Institute of Pathology

Table-II: Distribution of 46 malignant lesions.

Type	No. of Cases	%
i. Surface epithelial tumours	26	57
Serous cyst adenoca	17	38
Mucinous cyst adenoca	08	17
Clear cell carcinoma	01	02
ii. Germ cell tumours	12	26
Immature teratomma	05	11
Yalk sac tumour	04	09
Mixed germ cell tumour	02	04
Dysgerminoma	01	02
iii. Sex-cord stromal tumours	08	17
Granulosa cell tumour	08	17

Rawalpindi<sup>11</sup> in which frequency of benign and malignant tumours was 76% & 24% respectively.

In contrast a retrospective study carried out at Agha Khan University Hospital Karachi<sup>12</sup> showed a relatively higher frequency (40.8%) of malignant ovarian tumours. The reason for this higher percentage of malignancy might be more referrals of cancer patients to these centers. Another possibility may be the early reporting and detection of malignancy in these well equipped centers. A higher incidence of malignant ovarian tumours was also found in studies of India (36.5%)<sup>13</sup> and Nepal (31%).<sup>14</sup>

In current study surface epithelial tumours were the major histological type of ovarian tumours followed by germ cell tumours. These results are same with the reported findings by local<sup>5,11,12</sup> and multiple international studies.<sup>15-17</sup>

In benign tumours serous cyst adenoma was the commonest benign tumour 55%, which is in agreement with studies of Ahmed et al<sup>5</sup>, Khan et al<sup>11</sup> & Ahmed et al<sup>12</sup> who also reported same findings with variable frequencies. Ovarian cancers rank among ten commonest cancers in Pakistani women. They rank from second to fifth in various Pakistani studies.<sup>18,19</sup>

In our study serous cyst adenocarcinoma was the commonest surface epithelial cancer followed by mucinous cystadenocarcinoma. These findings are similar with findings of Malik,<sup>8</sup> Ahmed et al<sup>12</sup> and Zahra.<sup>20</sup> However in some local studies,<sup>7,21,22</sup> mucinous cyst adenocarcinoma was the commonest malignant surface epithelial tumour followed by serous cancers. It seems that mucinous tumours are also common in our population as compared to the west where endometrioid carcinoma ranks second behind serous cyst adenocarcinomas.<sup>23,24</sup>

Most of our patients with benign tumours were in 3<sup>rd</sup> & 4<sup>th</sup> decades of life, while malignant tumours were seen in 5<sup>th</sup> & 6<sup>th</sup> decades. These results are in agreement with studies of Ahmed et al,<sup>5</sup> & Ahmed et al<sup>12</sup> who also found maximum number of cases of benign tumours were younger than 40 years, whereas that of malignant tumours were older than 40 years of age.

Majority of our malignant cases were between 41 to 60 years of age group. Our findings are in agreement with other local studies<sup>5,7,12</sup> but are different from western studies<sup>23,25</sup> which quote higher age range of 35 to 70 years. One of the possible reasons for lower mean age for malignant tumours in our population could be due to shorter life expectancy.

These observations and results proved to be valuable base line information regarding frequency

and pattern of ovarian tumours in Mirpurkhas. Although this was a rather simple analysis but the intention is also to open ways for other larger clinically oriented studies, to define the risk factors in our population, a large – scale study, looking at specific etiological factors and comparing them to other local and western studies is highly recommended for future.

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