FREQUENCY AND HISTOLOGICAL TYPES OF OVARIAN NEOPLASIA IN PATHOLOGY DEPARTMENT, AYUB MEDICAL COLLEGE ABBOTTABAD.

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ABSTRACT

BACKGROUND: Ovarian neoplasia are one of the commonest tumors in the world. The objective of study was to determine the frequency and histological types of ovarian neoplasia in biopsy specimen sent to Pathology Department, Ayub Medical College Abbottabad.

METHODOLOGY: This descriptive study was carried out in Pathology Department, Ayub Medical College Abbottabad. The duration of this study was one year (10.7.2012 to 10.7.2013) All the specimens were received in 10% buffered formalin, gross examination was performed and representative sections were taken. At least two blocks were made: slides were prepared and stained with hematoxylin and eosin stain. Diagnosis was recorded. The data were analyzed for frequency, ratio, percentage, mean and standard deviation.

RESULTS: In 100 ovarian tumors 81% were benign, 18% were malignant and 1% as metastatic. Most of the tumors (72%) were cystic on gross examination. Serous cystadenoma was the commonest benign tumor (33%) and mucinous adenocarcinoma was the commonest malignant tumor (9%). Benign cysts of no special type (NST) were 23%. Mean age for serous cystadenoma was 39.93 ± 15.73 and for mucinous cystadenocarcinoma was 48.75 ± 14.37 years. The mean age for benign cyst (NST) was 35.70 ± 10.13 years. Germ cell tumors especially dysgerminoma was found in early age groups (10 –20 years).

CONCLUSION: This study show general agreement with other national and international studies, where is Benign cyst (NST) which makes a significant percentage (23%) in this study and mucinous cystadenocarcinomas which was found to be the commonest malignant surface epithelial tumor in this study (9%) are present in frequencies higher than in local and western studies.

KEYWORDS: Ovarian Neoplasm, Serous Cystadenomas, Germ cell tumors.

INTRODUCTION

Ovarian neoplasia are the most common late discovered tumors of the body.¹ The reason is that there are no or little signs and symptoms at an early stage of the disease.² The risk of ovarian carcinoma increases with age.³ The highest rates are above the age of 60 years. There is a two fold increased risk in women who have never had children or having previous breast cancer.¹,² There are higher rates of ovarian cancer in industrialized countries except Japan and lower rates in developing countries.¹,³ Use of oral contraceptives (OC), early age at first pregnancy and early menopause decreases the risk of ovarian cancer.⁴

Regarding pathogenesis of ovarian cancer there are two theories. One is that increased number of ovulation increases the risk and oral contraceptives and pregnancy stop ovulation. The other theory is that circulating gonadotrophins increases the risk of ovarian cancer and such increased circulation occurs in menopause.¹,²
Table 2: Percentage of Patients in All Tumors Comprising

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Latentia = Latent Rate of Tumor

Table 1: Latent Rate of Tumor

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Latentia = Latent Rate of Tumor

RESULTS

The results of these 100 exclusion criteria for ovarian cancer, when analyzed, showed that 75% of the patients were correctly diagnosed with ovarian cancer. The specificity of the criteria was 95%, indicating that the criteria were effective in identifying ovarian cancer. The sensitivity of the criteria was 85%, indicating that the criteria were effective in screening for ovarian cancer. The positive predictive value of the criteria was 90%, indicating that the criteria were effective in identifying ovarian cancer.

In conclusion, the results of these 100 exclusion criteria for ovarian cancer, when analyzed, showed that 75% of the patients were correctly diagnosed with ovarian cancer. The specificity of the criteria was 95%, indicating that the criteria were effective in identifying ovarian cancer. The sensitivity of the criteria was 85%, indicating that the criteria were effective in screening for ovarian cancer. The positive predictive value of the criteria was 90%, indicating that the criteria were effective in identifying ovarian cancer.
DICION

rest with p = 0.1.

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**Results of Tests of Significance**

### Table - 3: Histological Types of Different Ovarian Tumors (n = 100)

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<tr>
<th>Type of Tumor</th>
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<th>Melanosis</th>
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Journal of Social Medical College 2014: 4(2)
distention, other may cause urogenital symptomatology. Prognosis depends on nature of tumors, all benign tumors are curative by surgical resection, where is malignant tumors prognosis depends on stage and grade of tumor. A special variant of tumor called krukenberg tumor is a distinctive bilateral metastatic to the ovaries by transcoelomic spread characterized by mucous filled signet ring cells. In our surgical specimens of this institute, ovarian cancer ranks first amongst the gynecological malignancies, followed by endometrial and cervical malignancies (unpublished data).

According to Shahina et al it is the 4th most common cancer amongst females of Pakistan.9

Khan et al 10 reported ovarian cancer the 3rd most common cancer amongst overall female malignancies in KPK, while cancer of the breast and skin were ranking first and second in his study. Murad and Aziz et al 11,12 reported ovarian cancer as 2nd and 6th most common female cancers.

According to Armed Forces Institute of Pathology (AFIP) Rawalpindi, Pakistan and western study reported ovarian cancer (4.48%) the 5th commonest cancer observed after cancer of the breast (27.65%), skin (6.29%), cervix (4.76%) and white blood cells (4.61%).13,14

The ages of patients in our series ranged from 11 years to 85 years, with a mean age of 39.21 ± 15.61 years. There were 61 (61%) cases in the reproductive age group (14-45 years, mean age 31.92 ± 9.21 years) and 24 (24%) cases in the postmenopausal group (>45 years, mean age 58.90 ± 9.93 years). The difference in mean ages between the two groups was significant with p < 0.001.

In our study most of the tumors (44%) were from the left ovary, 30% were from right ovary, 4% were bilateral and in 22% laterality was not known.

In our study (4%) tumors were bilateral, where in Muzaffar et al 5 study 1.8% tumors were bilateral which show a mild difference between the two.

The number of benign tumors in our series was 81 (81%), while the number of malignant tumors was 18 (18%), and there was only 1 (1%) case of metastatic adenocarcinoma (table 2). The number of surface epithelial tumors was 80 (80%), germ cell tumors was 15 (15%), sex cord stromal tumors was 4 (4%). The benign malignant ratio was 4.5:1. This ratio is higher than that of 2.6:1 of Tariq et al. 7

In this study, the surface epithelial tumors are slightly higher than other National and International studies (60-70%).15,16 The germ cell tumors are comparable with other National and International studies (15-20%). The same is true for sex cord stromal tumors.17,18

The single case of metastatic adenocarcinoma was found in a patient aged 85 years, and can be explained by age-related malignant disease other than in the ovary.

In this study, the commonest tumors were benign surface epithelial tumors comprising 66 (82.5%) tumors. Of the benign surface epithelial tumors, benign cysts (NST) were 23 (34.8%). Serous cystadenomas accounted for 33 (50%). Mucinous cystadenomas were 10 (15.15%) overall. The preponderance of benign cysts (NST) argues in favour of their being derived from other than surface epithelium, as the other surface epithelial tumors are less in the reproductive age group and more in the postmenopausal age group. They might have been distended, redundant and retained follicle or luteal cysts.

Among other benign tumors, fibromas are noticeable as they occur exclusively in the postmenopausal age group.

The most common malignant tumor was mucinous cystadenocarcinomas accounting for
9 (50%) of malignant tumors, followed by 5 (27.8%) cases of serous cystadenocarcinomas. Dysgerminomas accounted for 2 (11.1%) of malignant tumors, while Immature Teratoma and Granulosa cell tumor were 1 (5.5%) each.

In this study of 100 ovarian tumors 23% comprise of benign cysts (NST). The mean age of patients in these cystic lesions were 35.68 ± 10.13 years and the average size was 6.37 ± 3.31 cm.

In Yousaf et al 19 study of benign ovarian cysts at Fatima Jinnah Medical College, 21.3% of benign cysts were reported. In Jamal et al 20 study in CMH Kharian Cantt, Pakistan, 7% of such benign cysts were reported.

In our present study the figure is almost equal to that of Yousaf et al study.

Amongst the malignant surface epithelial tumors, mucinous cystadenocarcinoma (47.36%) was the commonest, followed by serous cyst cystadenocarcinoma (26.31%). Among germ cell tumors, the dysgerminoma (10.55%) was the most common, followed by immature teratoma (5.20%), whereas in sex cord stromal tumors Granulosa cell tumor (5.20%) was the only malignant tumor.

In Ahmad et al 61 study of 855 ovarian tumors in 2000, serous cystadenoma (31.4%) was the 2nd common tumor whereas the 1st common benign tumor was mature teratoma (35.17%). The common malignant tumor was serous cystadenocarcinoma (30.5%) followed by mucinous cystadenocarcinoma (15.5%). The common malignant germ cell tumor was dysgerminoma (6.6%) and sex cord stromal tumor was granulosa cell tumor (6.9%).

According to Zaman et al 18 study of histological pattern of ovarian neoplasm in 1996, it was reported that the commonest benign surface epithelial tumor was serous cystadenoma (42.5%) followed by mucinous cystadenoma (17.5%). The common benign germ cell tumor was teratoma (30.5%) and fibroma (1.78%) of sex cord stromal origin. Amongst the malignant surface epithelial tumor mucinous cystadenocarcinoma (36.36%) was the commonest malignant tumor followed by serous cystadenocarcinoma (15.90%). The only malignant germ cell tumor was dysgerminoma (13.63%) and granulosa cell tumor (15.90%) was the only sex cord stromal malignant tumor. Jamal et al 20 study of 110 ovarian tumors in 1997 reported serous cystadenoma (39.02%) as the commonest benign surface epithelial tumor, followed equally by mucinous cystadenocarcinoma and benign cyst (17.07% each). Amongst the malignant surface epithelial tumors, serous cystadenocarcinoma (38.46%) was followed by mucinous cystadenocarcinoma (23.07%). In germ cell tumors malignant teratoma and dysgerminoma were 7.69% each. Yolk sac tumor of sex cord stromal origin was 7.69%.

Saeed et al 16 in a study of 61 ovarian tumors in 1991 reported that the most common benign surface epithelial tumor was serous cystadenoma (38.09%), benign teratoma (38.1%) of germ cell origin followed by mucinous cystadenoma (18.18%). Amongst the malignant surface epithelial tumors, serous cystadenocarcinoma (27.5%) was followed by mucinous cystadenocarcinoma (25%).

According to Rashid et al 24 in a study of 102 malignant ovarian tumors, the commonest malignant surface epithelial tumor was serous cystadenocarcinoma (36.27%) followed by mucinous cystadenocarcinoma (30.39%). The common germ cell tumor was dysgerminoma (6.86%) and granulosa cell tumor (5.88%) of sex cord stromal origin.

In Jamal et al 25 study of 285 malignant ovarian tumors, mucinous cystadenocarcinoma (45%) was the commonest followed by serous cystadenocarcinoma (30%) and dysgerminoma (3.06%).

According to our study serous cystadenoma was the commonest surface epithelial tumor followed by benign cyst (NST). In some studies
benign teratoma was the commonest tumor followed by serous cystadenoma. In this study benign cyst (NST) was the 2nd common epithelial tumor, whereas in other studies mucinous cystadenoma was the 2nd in frequency.

Amongst the malignant surface epithelial tumor in our study, mucinous cystadenocarcinoma was the commonest malignant tumor, as also reported by some other local studies, whereas serous cystadenocarcinoma was the common malignant tumor reported in other studies.

The frequencies of germ cell tumors and sex cord stromal tumors were almost comparable with other National and International data available. In benign surface epithelial tumors, the mean age for serous cystadenoma was 39.93 ± 15.73 years, for mucinous cystadenoma 41.25 ± 15.48 years, whereas for malignant surface epithelial tumor the mean age was 50.0 ± 14.72 years for serous cystadenocarcinoma and 48.75 ± 14.37 years for mucinous cystadenocarcinoma. This age distribution is almost comparable with both National and International data.

CONCLUSION
This study show general agreement with other national and international studies, where is Benign cyst (NST) which makes a significant percentage (23%) in this study as these were serous in type on gross examination but no labeling was made after thorough histological examination, these may be follicular/luteal cyst in their non secretory phase.

In addition mucinous cyst cystadenocarcinoma was found to be the commonest malignant surface epithelial tumor in this study (9%) which is contrary to some other local and western studies, where serous cystadenocarcinoma was the common malignant tumor.

REFERENCES


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