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HISTOPATHOLOGICAL SPECTRUM OF OVARIAN TUMORS : 5 YEARS RETROSPECTIVE STUDY IN A TERTIARY REFERRAL HOSPITAL IN ASSAM

Pathology

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ABSTRACT

Introduction : Ovarian tumor accounts for 30% of female genital tract cancers and comprises of large variety of neoplastic entities. Mortality rate has due to ovarian tumor has gradually increased. The present study was undertaken to study the frequency of various histomorphological spectrum, histological subtypes and age distribution pattern of ovarian tumors.

Methods: Retrospective study was carried during period of 1st January 2015 to 31st st December 2019, 455 cases of ovarian neoplastic lesions were taken from the records of the department. Classification was done according to WHO classification.

Results: Of the 455 cases, 332 cases (73%) were benign, 16 cases (3.5%) cases were borderline and 107 cases (23.5%) cases were malignant. Among the histological subtypes surface epithelial tumors are common comprised of 76.9% followed by germ cell tumors (19.6%). Serous cystadenoma (42.8%) was the most common benign tumor followed by mature cystic teratoma (16.5%). Among the malignant tumors, the most common was Serous cyst adenocarcinoma (11.9%)

Tumors were seen over age range of 11-81 years. Maximum number of cases were in the 4th to 6th decade. Benign tumors were primarily seen in Younger age group , whereas malignant tumors were common in elderly age group.

Conclusions: In our study we analysed all the spectrum of ovarian tumors diagnosed on the basis of histomorphology. Surface epithelial tumors were the commonest ovarian tumor. Maximum numbers of ovarian tumors were in the age range 40-59years and malignant tumors were common in age >40 years.

KEYWORDS

Histopathology, Ovarian tumors, Serous cystadenoma

INTRODUCTION

Ovarian tumors are common forms of neoplasia in women and accounts for 30% of female genital cancers [1]. Incidence and prevalence of ovarian tumor vary in different geographical areas of the country. About 80% of tumors are benign and occur in younger age group comprising of 20-45 years . Whereas malignant tumors are more common in 40-65years. [2] Depending on the cell morphology, proliferative pattern and and other associated finding (hemorrhage, necrosis and calcification & others) of the tumor, it may be graded as benign, borderline and malignant tumour [3].

Diagnosis of ovarian tumor depends on signs and symptoms, ultrasound, biochemical study (tumor markers) like CA125, B-hCG and doppler study of tumor vasculature.[4-6]. The definitive diagnosis and staging is done by surgery and histopathology.

Indian Cancer Registry data project ovary as an important site of cancer in women and comprises up to 8.7% of cancers in different parts of the country [7] In Assam, relative proportion of ovarian cancers were detected was 4.9% [8]. Age is one of the most important clinical features of the patient. [9]

This study was carried out to evaluate the histopathological pattern and age distribution of ovarian tumors in a tertiary care hospital of Assam.

MATERIALAND METHODS

The present study was based on histopathological evaluation of 455 cases of ovarian tumors.

Type of study:

Retrospective hospital-based study conducted in the Department of Pathology, Silchar Medical College and Hospital from 1st January 2015 to 31st st December 2019.

Sampling Methods: Cases were taken from the records of the department, blocks were retrieved and relevant clinical history was noted from the requisition forms.

INCLUSION CRITERIA:

All cases of ovarian tumors that were received either as solitary specimens, or as a part of total abdominal hysterectomy specimens.

EXCLUSION CRITERIA:

The normal ovaries and ovaries with other findings such as follicular cyst, cystic follicles, hemorrhagic inclusion cyst, endometriosis, ectopic pregnancy etc. were excluded from the study.

Gross specimens received were fixed in 10% formalin and multiple sections from each specimen were taken to include the representative area for histological examination. Sections were processed by routine paraffin method, blocks were cut at five micron thickness and the sections were stained with Haematoxylin and Eosin stain.

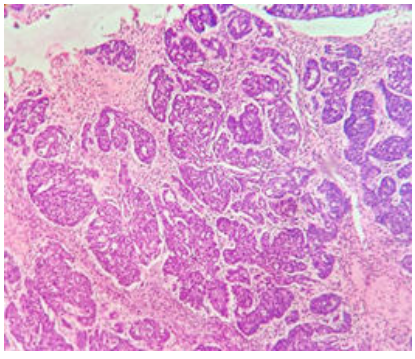

Figure 1: papillary serous cystadenocarcinoma, 10x view

RESULTS

A total number of 455 cases of ovarian tumors were studied. Among these, 332 cases (73%) were benign, 16 cases (3.50%) were borderline and 107 cases (23.5%) were malignant tumors. According to their morphological pattern, the age distribution among ovarian tumors is shown in Table 1.

Table – 1 Distribution Of Ovarian Tumor According To Age Group

Age	Benign	borderline	malignant
<19	23 (5%)	0	9 (2%)
20-39	68 (15%)	0	6 (1.4%)
40-59	214 (47%)	16(3.5%)	68 (15%)
>60	27 (6%)	0	23 (5.1%)
Total	332 (73%)	16(3.5%)	107 (23.5%)

Majority of the cases belong to the age group of 40-59 years i.e. 65.5 %. The youngest person was 11 years old and oldest person was 81 years. The youngest patient was a case of mature cystic teratoma and the oldest case was serous cystadenocarcinoma. Benign lesions were more common in the younger age groups. Malignant tumors were mainly found in age more than 40 years.

Histologically, surface epithelial tumors were the most common i.e. 350 cases (76.9%) followed by 89 cases (19.6%) of germ cell tumors and 16 cases (3.5%) of sex cord-stromal tumor.

In this study, majority cases were of epithelial type comprising of 350 cases (76.9%). The most common epithelial tumors were Serous (260 cases, 57.1%), mucinous (80, 17.6%) brenner tumor (4 cases, 0.9%), and endometrioid tumor (6 cases, 1.3%)

Table 2 Distribution Of Ovarian Tumor According To Different W.h.o. Histologic Type

TYPE OF TUMOR	NO OF CASES	PERCENTAGE(%)
EPITHELIAL TUMOR	350	76.9
BENIGN		
Serous cystadenoma	195	42.8
Mucinous cystadenoma	49	10.8
Brenner tumor	4	0.9
BORDERLINE		
Borderline serous tumor	11	2.4
Borderline mucinous tumor	5	1.1
MALIGNANT		
Serous cystadenocarcinoma	54	11.9
Mucinous cystadenocarcinoma	26	5.7
Endometrioid tumor	6	1.3
GERM CELL TUMOR	89	19.6
Mature cystic teratoma	75	16.5
Dysgerminoma	7	1.5
Yolk sac tumor	5	1.1
Immature teratoma	2	0.5
SEX CORD STROMAL TUMOR	16	3.5
Granulosa cell tumor	7	1.5
Fibrothecoma	4	0.9%
Fibroma	5	1.1

In this study, majority cases were of epithelial type comprising of 350 cases (76.9%). The most common epithelial tumors were Serous (260 cases, 57.1%), mucinous (80, 17.6%) brenner tumor (4 cases, 0.9%), and endometrioid tumor (6 cases, 1.3%)

Of the Germ cell tumors, the most common type was benign cystic teratoma (75 cases , 16.5%). Other germ cell tumors are 7 cases of dysgerminoma, 5 cases of yolk sac tumor, 2 cases of immature teratoma. There is 16 cases of sex cord stromal tumors, out of which 7 cases were granulosa cell tumor and 5 cases of fibroma and 4 cases of fibrothecoma.

Serous cystadenoma was highest in number among all tumor type, followed by 75 cases (16.5%) mature cystic teratoma.

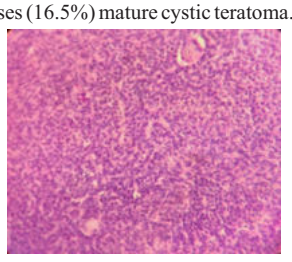

Figure 2: granulosa cell tumor, call exner bodies, 10x view

DISCUSSION:

In this study a total of 455 cases of ovarian tumors were studied over a period of 5 years.

Of these, 332 cases (73%) were benign, 16 cases (3.50%) were borderline and 107 cases (23.5%) were malignant tumors.

The result was similar to other studies done by workers where benign tumors were more common than malignant. Study done by Phukan A et al. [10] found that 75% of the tumors were benign , 21.4% malignant and 3.6 % borderline. Gupta et al. reported 72.9% benign, 4.1% borderline and 22.9% malignant tumors [11]. In another study by Sharma et al[12], 78.4% were diagnosed as benign, 20.6% malignant and 0.98% cases as borderline malignant tumor.

In the present study , maximum number of cases were in 4th to 6th decade of life. Our study is in concordance with Kar et al[13] and Phukan et al [10] , where it was 40-59 years age. In another study by Rangaliya et al [14] benign neoplasms were most commonly seen in 3rd to 5th decade, whereas malignant tumors were seen in 5th decade. But Pilli et al [15] and Ramachandran et al [16] reported that ovarian tumors are more common in 20-39 years.

Among the major histological classes, the most common ovarian tumor in our study is surface epithelial tumor (76.9%). Similar results were found by studies by Rangaliya et al [14] and Kar et al[13] at 75.43% and 79% respectively. However a higher incidence of surface epithelial tumor (90%) was recorded by Guppy et al [17].

Germ cell tumors in our study comprised of 19.6% of all ovarian tumors. This finding is similar to findings of studies by Rangaliya et al[14] (19.30%) and Kar et al[13] (16%).

Most common primary epithelial ovarian malignancy in this study are serous cyst adenocarcinoma. In our study we have 3.5% tumors categorised as borderline ovarian tumors, which is similar to findings of studies by Gupta et al[11] (4.2%), Phukan A et al. [10] (3.6%), and Rangaliya et al [14] (2.1%) .

Incidence of sex cord stromal tumor in this present study is 3.5% comprising of granulosa cell tumor, fibrothecoma and thecoma. Rangaliya et al [14] and Kar et al[13] reported 0.02% and 1.5% respectively. Other studies observed slightly higher incidence , Pilli et al [15] (7%), Phukan A et al. [10] (7.2%).

CONCLUSIONS

Our study of 455 cases of ovarian tumor , gives an impression of the incidence and histopathologic pattern of tumors in our institute. Surface epithelial tumors are the most common followed by germ cell tumors as observed in other studies. Majority of the cases occurred in 40-59 years of age.

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