HISTOPATHOLOGICAL STUDY OF OVARIAN TUMOURS

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ABSTRACT

BACKGROUND

Ovarian cancer is the second leading cause of mortality among all gynaecological cancers remain undetected until the advanced stage. Ovarian lesions exhibit a wide range of clinical, morphological and histological features. The aim of the current study was to identify the pattern of pathologies involving ovarian mass lesions which were received for histopathological evaluation in one-year duration at a tertiary hospital in coastal district of Andhra Pradesh during the period January 2018 to December 2018 and to correlate them with clinical presentation.

MATERIALS AND METHODS

A cross sectional study was carried out among all the ovarian specimens sent for histopathological examination.

RESULTS

A total of 227 cases were reviewed. Neoplastic lesions of the ovary constituted 44.0% of all cases received; rest were functional cysts. Of the 100 neoplastic lesions, Serous cystadenoma of the ovary constituted the predominant neoplastic lesion diagnosed (59%) followed by benign cystic teratoma (12%). Malignant lesions constituted 10.0% of all pathologies. The age of patients ranged from 15 years to 70 years with mean age of presentation of 37.92 years. 98. % of the lesions were unilateral.

CONCLUSION

The majority of ovarian lesions received for evaluation were benign and unilateral. Most patients were in the third to sixth decades of life. Development of methods for early diagnosis of ovarian neoplasia is essential as most patients present with vague symptoms at a later stage.

KEY WORDS

Ovarian Mass Lesions, Serous Cystadenoma, Mature Cystic Teratoma.

BACKGROUND

Ovaries are a common site for both non-neoplastic and neoplastic lesions.[1] ovarian tumours are one of the major health problems representing 30% of cancers of female genital tract.[2] In general, benign ovarian tumours are more common and account for 80% of all ovarian neoplasms and occur in women of 20-45 years and malignant tumours are more common in 40-65 years.[3] The benign lesions forming pelvic masses and mimicking ovarian tumours are categorised into follicular cyst, corpus luteal cysts, endometriotic cysts and haemorrhagic cysts[1]. Neoplastic lesions of ovary are further subdivided as per WHO classification into surface epithelial tumours, sex cord-stromal tumours, germ cell tumours, metastatic tumours and tumours from ovarian soft tissue. Recent improvement in patient survival in developed countries is attributed to an earlier stage at diagnosis.

Ovarian tumours are often difficult to detect until they are advanced in stage or size, as symptoms are vague and insidious. Identification of various histologic patterns of ovarian tumours is important for diagnosis as well as prognosis.[4] This study was undertaken to determine the frequency of different histologic types of ovarian tumours reported by the Department of Pathology of a tertiary care hospital.

MATERIALS AND METHODS

This was a descriptive study conducted in the department of Pathology of a tertiary hospital in coastal Andhra Pradesh, India over a period of one year. Cases of ovarian cystic lesions which underwent cystectomy, oophorectomy or hysterectomy with bilateral/ unilateral salpingectomy which were received in the department of pathology were included in the study. Functional ovarian cysts were excluded from the study. All relevant data, including age, clinical presentation and laterality (Unilateral or bilateral) were obtained from the test request form. The specimens received were grossed after overnight fixation in 10% formalin. The tissue was processed as per standard procedure. Sections were cut on microtome and stained by Haematoxylin and Eosin stain. The results obtained were analysed with respect to age, sex, and tumour type as per the WHO classification of ovarian tumours (2003).[5] Statistical analysis was performed using Microsoft Excel.

RESULTS

A total of two hundred and twenty-seven cases of ovarian lesions were encountered of which 127 (55.9%) were functional cysts and were excluded from the study. It was observed that the incidence of functional cysts was comparable to the findings of other authors.[1, 6,] Of the 100 neoplastic lesions, 87 (87%) were benign, 3 (3%) were borderline and 10 (10%) cases were malignant. 81 cases were surface epithelial tumours, 14 cases were germ cell tumours, 4 were sex cord-stromal tumours and 1 case was metastatic carcinoma (Table 1).

Type of Ovarian Tumours	Frequency (n) and Percentage (%)
Surface Epithelial Tumours	81
Germ Cell Tumour	14
Sex-Cord Stromal Tumour	4
Metastatic Tumour	1
Total	**100**

Table 1. Distribution of Various Types of Ovarian Tumours
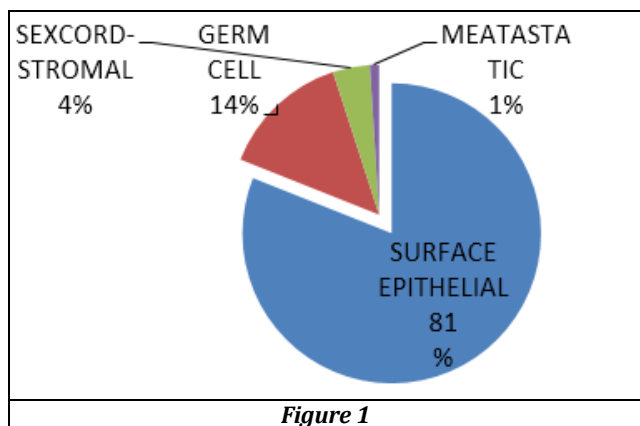

Figure 1

Age distribution among ovarian lesion according their morphological patter is shown in Table 2. Maximum number of cases were seen in the child bearing age group of 20-39 years (55%). The malignant neoplasms were seen more commonly in the age group of 40-60 years (Table 2). The youngest patient was 15 years old and the oldest patient was 70 years old.

	Age in Yrs.	Benign	Borderline	Malignant	Total
1	<19	3	0	0	3
2	20-29	19	1	2	22
3	30-39	30	2	1	33
4	40-49	25	0	1	26
5	50-59	8	0	5	13
6	60-70	2	0	1	3
	Total	**87**	**3**	**17**	**10**

Table 2. Age Distribution Among Ovarian Lesions

Majority of the time the patient presented with non-specific, vague and varied symptoms. The most common clinical presentation (47%) was a complaint of dull or dragging type pain in abdomen. few of the benign tumours type, presented with severe, acute onset abdominal pain, secondary to torsion. 3 of the malignant cases presented with chief complaint of abdominal distention due to ascites. Most women reported gradually progressing symptoms for a period over 6-12 months. A minor proportion of cases (14%) were asymptomatic at presentation and were only incidentally diagnosed upon USG evaluation as part of routine health check-up. [Table 3] Clinical presentation of patients with ovarian tumours.

Clinical Presentation	Total (%)
Pain in abdomen	47
Menstrual abnormalities	26
Loss of Weight	6
Ascites	3
Urinary complaints	4
Asymptomatic	14
Total	100

Table 3

In the present study, the tumours ranged in size from 4-20 cms. with an average size of 7.64 cm. Of 100 tumours, 68 (68.5%) were cystic, 26 (26%) were mixed and 8 (8%) were solid. Majority of the cystic tumours were benign. However, majority of malignant tumours, especially the surface epithelial malignancies were at least partly cystic.

Histological Classes of Ovarian Tumours	Benign Tumours (n = 87)	Borderline Tumours (n=03)	Malignant Tumours (n = 10)	Total
Surface Epithelial Tumour	Serous Cystadenoma (59) Mucinous Cystadenoma (11) Benign Brenner Tumour (01)	Serous Borderline Tumour (02) Mucinous Borderline Tumour (01)	Serous Cystadenocarcinoma (03) Mucinous Cystadenocarcinoma (03) Clear Cell Carcinoma (01)	81
Germ Cell Tumour	Mature Teratoma (12)		Dysgerminoma (02)	14
Sex Cord Stromal Tumour	Fibroma (03)		Granulosa Cell Tumours (01)	4
Metastatic Tumour	....		Krukenberg Tumour (01)	1
Total	**87**	**03**	**10**	**100**

Table 4. Distribution of Ovarian Tumours as Per WHO Classification (n=100)

DISCUSSION

Ovarian cystic lesions are common surgical specimens exhibiting diverse morphology and are associated with relatively mild symptoms and typically comprise functional and pathological lesions. Majority of the ovarian neoplasms escape early detection and thus account for a disproportionate number of fatal cancers. Due to similar clinical presentations there is confusion in the diagnosis of non-neoplastic and neoplastic lesions of ovary.

In this study the most common ovarian lesion is the nonneoplastic functional cysts. This observation is similar to reports from Gurung P et al, Sawant et al, Forae et al[7] Maliheh et al. However, this is in contrast Ashraf et al.'s, study where neoplastic lesions outnumbered functional ovarian lesions.[8]

In our study, the tumours were seen the age group from 15-70 years. This is in correlation with Gurung P et al, and Sawant et al. Seikh et al had a similar upper age limit (75 years), but their youngest case was of a 6 yrs., old. The. Most of the benign neoplasms were seen in 3rd and 4th decade with mean age of 37.36 years. The maximum number of cases were in 31-40 years, (33%), followed by 41-50 years, (26%). The malignant neoplasms were seen more commonly above 40 years (70%). these findings correlated with those of Sheikh et al, Thakkar et al and Mankar et al.

In present study the primary presenting symptom was a vague lower abdominal pain (47%) followed by menstrual irregularities (26%). A significant proportion of cases (14%) were asymptomatic at presentation and were only incidentally. these findings were similar to most of the studies done by other authors.

The current study had only two cases of bilateral tumour (2%) both of which were a mucinous cystadenoma. This incidence is lower than the reports of other authors.

Of the 100 neoplastic lesions encountered in the current study, 87 (87%) were benign, 3 (3%) were borderline and 10 (10%) cases were malignant. The tumour incidence was comparable to the study done by Sheikh et al (80.3%), Thakkar et al (84.5%) and Dhakal R et al[9] (89.18%). However, Mankar et al had observed a higher incidence of malignant tumours (31.2%).

Ovarian tumours have been found to arise from one of three components: (1) surface epithelium (2) the germ cells and (3) the stroma of the ovary. Epithelial tumours (72) were the most common benign tumours in this study followed by Germ cell tumours (12%) and Sex cord-Stromal tumours (3%) similar to findings of others.[10,11] However, some studies reported mature cystic teratoma as their most common lesion.[12]

Serous cystadenoma (59%), was the most common benign epithelial lesion encountered in this study. Other benign epithelial tumours seen were Mucinous cystadenoma (11%) and Benign Brenner's Tumour (1%). this was in concordance with studies most of the authors reviewed. The study by Mankar et al showed equal incidence of Serous and Mucinous tumours.

The only histologic type of benign Germ cell tumour we came across in the study was mature cystic teratoma (12%). This incidence was comparable to studies of, Thakkar et al, Mankar et al and Sawant Et al but was lower in comparison to Gurung P et al (30%), Sheikh et al (30.6%), Forae et al and Dhakal R et al.

Sex cord-stromal Tumours (3%) were least in percentage of all benign tumours. This phenomenon was encountered in all of the reviewed literature. In our study three cases of fibroma were seen, incidence similar to study of Sheikh et al, Thakkar et al and Mankar et al.

We had 3 cases of borderline lesions in our study. Two were serous and one was a mucinous borderline tumour. This prevalence was similar to that observed by other authors. Curiously the incidence of one of the Borderline serous tumours and the Borderline Mucinous tumour was sin a relatively younger age (28 years). One case of serous borderline tumour was seen in an older age group (50 yrs.).

In the present study, 10% cases of malignant neoplasms were seen. Epithelial cell malignancies were commonest. This was in concordance with the observation of all the literature reviewed. Serous cystadenocarcinoma was the commonest of all epithelial malignancies in most of the studies reviewed. However, study by Dhakal R et al had more incidence of Mucinous cystadenocarcinoma. In our study, the incidence of Mucinous and Serous cystadenocarcinoma was same (3%).

Two cases of malignant germ cell tumours comprising of Dysgerminoma (2%) in a 26-year patient and 23 yr old patient are seen in current study. Studies by Thakkar et al, Bahadur et al,[12] showed a similar incidence of 2.4% and 2.2% respectively.

Granulosa cell tumour (1%) was the only non-benign Sex cord stromal tumour encountered in our study. Behaviour of granulosa cell tumour and Sertoli cell tumour is uncertain because of their potential in behaving aggressively.

Bilateral metastatic ovarian neoplasms were seen in 1 patient, colonic adenocarcinoma was found to be the primary malignancy.

CONCLUSION

Ovarian cystic lesions are commonly encountered surgical specimens. Our study of ovarian lesions aimed to classify the ovarian tumours according to WHO classification. The results of present study are comparable to other series of studies regarding occurrence with respect to age, laterality, gross features and microscopy. Majority of the cases occurred in 30-50 years age group. Benign ovarian tumours were more common than malignant ones across all age groups. Surface epithelial tumours are the commonest ovarian tumours followed by germ cell tumours as observed in other studies. An accurate histopathological diagnosis combined with clinical staging will help in rendering prompt and appropriate treatment to the patient.

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