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Pathology

HISTOPATHOLOGICAL ANALYSIS OF OVARIAN LESIONS FROM A TERTIARY CARE HOSPITAL.

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ABSTRACT **Background :** ovarian lesions includes both functional and neoplastic lesions. Most common functional lesions are corpus luteal and follicular cyst. Neoplastic lesions include surface epithelial tumors, sex cord stromal tumors ,germ cell tumors and metastasis. Aim of the study is to determine the different histopathological lesions in various age groups and frequency of benign and malignant lesions

Meterials and methods: This is a retrospective study of 154 cases from january 2015 to july 2017. Specimens include ovarian masses and hysterectomy along with ovaries. The gross specimens were fixed in 10% formalin and adequate representative samples were taken for histological study. Hematoxylin and eosin stained slides were examined.

Results: Out of the 154 tumors, 128(83.1%) were surface epithelial, 17(11%) were germ cell tumors, 5 (4.2%) were sex cord stromal tumors and 4(2.5%) were metastasis. Most common histological type was surface epithelial tumors(83.1%) followed by germ cell tumors(11%). Most common benign tumor was serous cystadenoma and malignant was serous cystadenocarcinoma. Surface epithelial tumors were common in 3rd and 4th decade where as malignant tumors in 5th decade.

Conclusion: serous cystadenoma is the most common benign ovarian tumor and malignant tumors are common in 5th decade. Histological type helps in deciding further management.

KEYWORDS : ovarian lesions, surface epithelial tumors, germ cell tumors, metastasis

Introduction:

Ovary is a complex structure. Ovarian lesions can be functional and neoplastic. Functional lesions include follicular cysts and corpus luteal cysts. These cysts are commonly seen in second decade. They resolve spontaneously with out any treatment[1]. Usually surgery is not required, but when cysts are large or painful, surgical evaluation is needed.

Ovary is the second most common gynecological malignancy and is the leading of cause of death in women in United States[2]. Neoplastic lesions of ovary are classified according to WHO classification of ovarian tumors(IARC- 4th edition). They are classified as surface epithelial, sex cord stromal, germ cell tumors and metastatic. Epithelial tumors are most common histological type[3].

Patients usually are asymptomatic or present with vague symptoms like abdominal pain, mass per abdomen and menstrual irregularities. These tumors size may be variable and are detected when they attain a larger size. They can be detected radiologically[4]. For management of patients, diagnosis of various histological patterns is essential.

This study is done to determine the different histopathological ovarian lesions in various age groups and frequency of benign and malignant lesions

Materials and methods:

This was a retrospective study of 154 ovarian lesions from January 2015 to july 2017. Study was done in department of pathology, Kurnool medical college, Kurnool, A.P. All cases of ovarian masses including cystectomies, oopherectomy and hysterectomy with uni and bilateral salpingo opherectomy were included. Functional ovarian cysts were excluded from the study. Clinical details of patients were noted. All specimens were fixed in 10% formalin and adequate representative samples were examined. Tissues were processed according to standard procedure. Formalin fixed paraffin embedded tissue sections of 3-4 µ thickness were stained with hematoxylin and eosin. Special stains were used , wherever required.

Results:

A total of 154 cases were studied. Age group was ranging from 11-70 years with a mean age of 40 yrs. Youngest patient was a case of mature cystic teratoma and oldest was of serous cystadenocarcinoma. Majority of the tumors were in 3rd (26.6%) and 4th decade(18.1%). Surface epithelial tumors (83.1%) were seen in all age groups, germ cell tumors (11%) were common in reproductive age group and metastatic tumors were common in 5th decade.

Distribution of ovarian tumors in different age groups were noted in table.1

Age group (yrs)	Surface epithelial tumors	Sex cord stromal tumors	Germ cell tumors	Metastasis
Upto 20	17(11%)	-	6(3.8%)	-
21-30	35(22.7%)	-	4(2.5%)	-
31-40	34(22%)	2(1.2%)	5(3.2%)	-
41-50	23(14.9%)	2(1.2%)	2(1.2%)	1(0.6%)
51-60	11(7.1%)	1(0.6%)	-	2(1.2%)
>60	8(5.1%)	-	-	1(0.6%)
Total	128(83.1%)	5(4.2%)	17(11%)	4(2.5%)

Grossly the tumor size ranged from 2-23cm. There were 108(70.1%) cystic, 12(7.7%) solid and remaining 34(22%)were mixed in consistency. 92% of the tumors were unilateral. Two of the metastatic tumors were bilateral .

Among the 154 cases, 150(97.4%) were primary cases and 4(2.5%) were metastatic. Benign tumors were 135(87.6 %) and malignant were 19(12.3 %). According to WHO classification of ovarian tumors, surface epithelial tumors were common accounting for 128 (83.1%) cases, followed by germ cell tumors 17(11%), sex cord stromal tumors were 5(3.2%) and metastasis in 4(2.5%). Among the surface epithelial tumors 111(72%) were benign, 5(3.2%) were borderline and 12(7.7%) were malignant. 88(57.1%) were serous tumors and 39(25.3%) were mucinous tumors. Out of 88 serous tumors, 77(50%) were benign, 3(1.9%) were borderline and 8(5.1%) were malignant.

Among 39(25.3%) mucinous tumors, 33(21.4)were benign, 2(1.2%) were borderline and 4(2.5%) were malignant. Single case of benign brenners was noted. Two (1.2%) cases of adult granulosa cell tumor were noted. Out of 17(11%) germ cell tumors, benign cystic teratoma (9%) were the commonest followed by dysgerminoma(1.2%). Among

the 4 (2.5%) metastatic cases, two were adenocarcinoma ane other two were krukenberg tumors.

Distribution of ovarian tumors according to WHO classification is shown in table.2

Histological type	Number(percentage)
Surface epithelial tumors	128(83.1%)
Benign	111(72%)
Serous cystadenoma	68(44.1%)
Serous cystadenofibroma	9(5.8%)
Mucinous cystadenoma	33(21.4%)
Benign brenners tumor	1(0.6%)
Borderline	5(3.2%)
Borderline serous cystadenoma	3(1.9%)
Borderline mucinous cystadenoma	2(1.2%)
Malignant	12(7.7%)
Serous cystadenocarcinoma	8(5.1%)
Mucinous cystadenocarcinoma	4(2.5%)
Sex cord stromal tumors	5(3.2%)
Benign	3(1.9%)
Fibroma	2(1.2%)
Fibrothecoma	1(0.6%)
Malignant	2(1.2%)
Adult granulosa cell tumor	2(1.2%)
Germ cell tumors	17(11%)
Benign	15(9.7%)
Mature cystic teratoma	14(9%)
Struma ovarii	1(0.6%)
Malignant	2(1.2%)
Dysgerminoma	2(1.2%)
Metastasis	4(2.5%)
Krukenberg tumor	2(1.2%)
Adenocarcinoma	2(1.2%)
Total	154(100%)

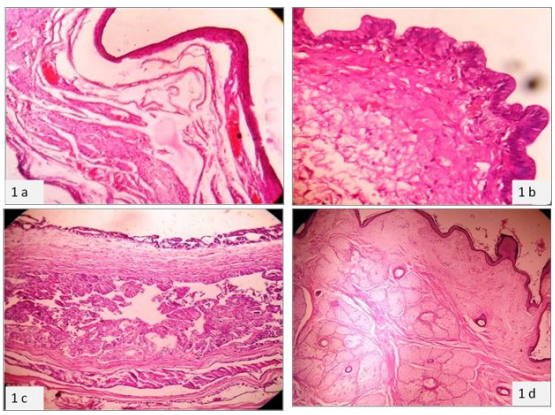

Fig 1.a serous cystadenoma showing serous epithelium lining 10x. Fig 1b. mucinous cystadenoma with munious lining epithelium 40x. Fig 1c. serous cystadenocarcinoma 10x. Fig 1d. Mature teratoma

Discussion:

Ovary is a complex structure. It includes both functional and pathological lesions[5]. Functional lesions are mainly follicular cysts, luteal cysts and hemorrhagic cysts. These are asymptomatic and resolve spontaneously. Many of the ovarian lesions are not detected early as they present with vague symptoms. The incidence, clinical presentation of these tumors is variable. Radiological investigations help in the diagnosis[6]. Histological appearance of tumors helps in further management of patients[7]. Tumors were in the age group of 11-70 yrs with majority of cases in 3rd and 4th decade. Malignant neoplasms were common in 5th decade. This was similar with Gupta et al[8].

Neoplastic lesions are classified according to WHO classification of ovarian tumors (IARC-4th edition). In this study surface epithelial tumors (83.1%) were common followed by germ cell tumors(11%), sex cord stromal tumors(4.2%) and metastasis(2.5%). This is similar to Sheikh S et al[9] and Nishal AJ et al[10].

Of the surface epithelial tumors, serous cystadenoma(44%) was common followed by mucinous cystadenomas(21.4%). Serous cystadenocarcinoma(5.1%) was the most common malignant tumor. Borderline lesions were only 3.2%. In our study other epithelial tumors like transitional cell carcinoma, clear cell carcinoma and endometroid tumors were not found. Distribution of surface epithelial tumors is similar to Pilli et al[11], Naseer et al[12] and Swamy et al[13].

Table 3. Distribution of surface epithelial tumors.

Tumor type	Pilli et al(2002)[11]	Naseer et al(2007)[12]	Swamy et al(2010)[13]	Present study
Benign	75.2%	68.7%	71.6%	72%
Borderline	2.8%	1%	3.3%	3.2%
Malignant	21.8%	31%	25.1%	7.7%

Most common germ cell tumor was mature cystic teratoma(9%). one (0.6%) case of struma ovarii and two(1.2%) cases of dysgerminoma were noted. Sex cord stromal tumors comprise fibroma (1.2%), fibrothecoma (0.6%) and two(1.2%) cases of adult granulosa tumor. Other cases like sertoli cell tumor, leydig cell tumor and mixed were not noted the study.

Ovary is also the site of metastatic deposits. Our study includes two cases of adenocarcinoma from endometrium and intestine and two were krukenbergs tumor.

Conclusion :

Histopathological analysis of ovarian lesion play a major role in further management of tumors. Early diagnosis and treatment is the crucial step in decresing morbidity and mortality. Surface epithelial tumors are commonest and malignant lesions occur in 5th decade.

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