

Histopathological spectrum of ovarian cyst in our rural area

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Abstract

Introduction: Ovarian cysts and tumors are the major health problem in women. Ovarian Cysts are the most prevalent pelvic mass and often associated with function disorders of menstruation which are mostly improved spontaneously. In some cases which are the result of cyst rupture, torsion or bleeding in to the cyst, laparotomy may be needed

Aim: The aim of this study is to highlight the histopathological study of ovarian cysts in rural area.

Materials and Methods: Hematoxylin and eosin stained slides of ovarian biopsies for 4 years were archived, scrutinized, and studied. Request forms were analyzed for clinical biodata and diagnosis, and data were analyzed with Statistical Package for Social Sciences (SPSS) version 21.

Results: Total number of 197 ovarian biopsies were reviewed. Out of which, 149 (75.6%) of nonneoplastic (functional cysts) lesions, 37 (18.7%) benign neoplastic lesions and 11 (5.5%) malignant tumors. Corpus luteal cyst was the most commonly encountered ovarian functional cyst constituting 63 cases (42.2%). This was followed by follicular cyst 42 cases (28.1%). The peaks age incidence for non-neoplastic is 3rd decade.

Conclusion: Functional ovarian cysts were the most commonly encountered ovarian lesions in our rural area. The most common variety of functional cyst was corpus luteal cyst and follicular cyst with majority occurring in the reproductive age groups.

Keywords: Ovarian lesions, Functional cysts, Corpus luteal cysts, Follicular cyst.

Introduction

Cystic lesions of ovary are the commonly occurring gynaecological pathology. Functional and pathological cysts in the ovary typically presents as mass lesions. Functional lesions are mainly cystic and are the most commonly encountered lesions of this retroperitoneal organ.¹ Functional cyst consist of mainly follicular and corpus luteal cysts. Studies have shown that 90% of these cysts are resolved spontaneously.² surgical intervention is mandated only when these cyst develop secondary complications like torsion, progressive pain or large mass per abdomen.³

These cyst are frequently seen in young female in their 2nd and 3rd decades due to failure of ovulation. However, fewer cases could also be seen in perimenopausal and postmenopausal women.^{2,4} However it is obligatory to discriminate between functional and pathological ovarian lesions. Greater numbers of these lesions are benign in nature. Across the globe ovarian cancers comprise about 23% of overall gynaecological malignancies and 3% of entire neoplasms in females. It is considered as the fifth common cause of cancer mortality in women.^{5,6} The present study is aimed at evaluating the histopathological spectrum of ovarian cystic lesions with special emphasis on functional ovarian cysts.

Materials and Methods

The study is retrospective observational study carried out in a tertiary care hospital at Shri Sathya Sai Medical College and Research Institute over a period of four years from January 2012 to December 2015.

During this period we came across 197 cases of ovarian cystic masses. All ovarian biopsies received during this period were included. All specimens sent for histopathological examinations were fixed in 10% formalin solution and processed by automated tissue processor. From the each paraffin blocks 3-5 microns sections were obtained and stained with routine hematoxylin and eosin stains. Special stains such as reticulin and periodic acid-Schiff stains were used where ever necessary. The results obtained were analyzed.

Inclusion Criteria: All ovarian biopsies with cystic presentation (inclusive of any procedure done for oophorectomy alone or with other specimens)

Exclusion Criteria: Oophorectomy specimens with normal ovarian histology. Ovarian Solid lesions/Malignancy with solid presentation.

Statistical Analysis: Data obtained were analyzed using the Statistical Package for Social Sciences (SPSS) version 21 statistical package.

Results

A total of 197 ovarian biopsies were reviewed. Out of which, 149 (75.6%) of nonneoplastic (functional cysts) lesions, 37 (18.7%) were benign neoplastic tumors and 11 (5.5%) were malignant tumors. Among the 149 nonneoplastic lesions, corpus luteal cyst was the most commonly encountered lesions constituting about 42.2% (n=63, followed by follicular cyst comprising about 28.1% (n=42). Others include hemorrhagic cyst and endometriotic cyst constituting about 16.7% (n=25) and 6.04% (n=9) respectively.

Other less common nonneoplastic lesions were paraovarian cyst 4.69% (n=7) and cortical cyst 1.3% (n=2), while polycystic disease accounted for one case

(0.6%). Among the ovarian neoplastic lesions benign lesions accounts for 37 cases (18.7%) and malignant neoplasm accounts for 11 cases (5.5%) See Table 1.

Table 1: Frequency and pattern of ovarian cyst

Pattern	Frequency	Percentage
Functional		
Corpus luteal cyst	63	42.2
Follicular cyst	42	28.1
Hemorrhagic cyst	25	16.7
Endometriotic cyst	9	6.04
Paraovarian cyst	7	4.69
Cortical cyst	2	1.3
Polycystic cyst	1	0.6
Neoplastic		
Benign Neoplasm	37	18.8
Malignant Neoplasm	11	5.5

Table 2 has illustrated that the 21-30 years was the peak age incidence for nonneoplastic ovarian cysts accounting for 76 cases (51.00%). The 4th decade was the 2nd most common age distribution for functional cyst accounting for 55 cases (36.91%) respectively.

Among the neoplasms, benign neoplastic lesions showed increased percentage in the 4th decade (n = 26; 70.27%), respectively. The peak age 51-60 years were noted for malignant tumors accounting for 5 cases (45.45%) a piece out of the 11 cases

Table 2: Age distribution and pattern of ovarian cyst

Category	Age				
	21-30	31-40	41-50	51-60	61-70
Functional					
Corpus luteal cyst	39	17	7	-	-
Follicular cyst	22	20	-	-	-
Hemorrhagic cyst	11	10	4	-	-
Endometriotic cyst	3	5	1	-	-
Paraovarian cyst	1	1			
Cortical cyst	-	1	1		
Polycystic cyst	-	1	-	-	-
Neoplastic					
Benign Neoplasm	2	26	5	4	
Malignant Neoplasm	-	-	3	5	3

Table 3 depicts surface epithelial tumours shows high incidence as ovarian cystic lesions either benign neoplasm or as malignant neoplasm.

Table 3: Distribution of Ovarian cystic neoplasms

	Benign	Malignant
Surface epithelial tumours	31(64.58%)	9(18.75)
Germ cell tumours	6(10.42%)	1(2.08%)
Sex cord-Stromal Tumour	1(2.08%)	-



Fig. 1: Shows cut-section of ovary with unilocular thick walled cyst, light yellowish in colour and glistening surface



Fig. 2: Shows cut-section of ovary with cystic corpus luteum measuring 1x 0.8cm and many follicular cyst each measuring 0.5x0.3cm



Fig.3: Shows cut-section of ovary with papillary projections on the outer surface and protruding into the cystic cavity. Other area shows brownish to blackish in colour

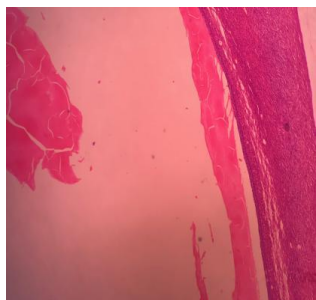


Fig. 4: Microscopically shows outer layer of theca interna cells and variable inner layer of granulosa cells

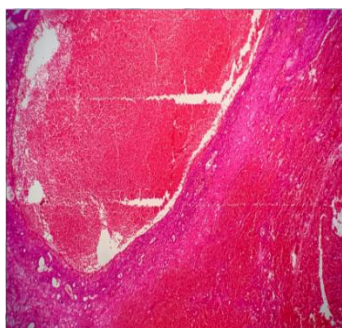


Fig. 5: Microscopically shows a cyst composed of luteinized granulosa cells and filled with hemorrhage

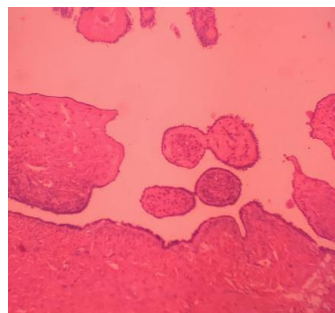


Fig. 6: Microscopically shows cysts lined by a single layer of tall, columnar ciliated epithelium. Stroma contains spindle fibroblasts without atypia and architectural complexity

Discussion

The study showed that the non-neoplastic ovarian lesions were more frequent when compared to neoplastic lesions, among non-neoplastic lesions broad majority were functional cysts. This finding is similar to the studies done by Maliheh et al.⁷⁻⁹ and in contrast to the study done by Ashraf et al¹⁰ which revealed that benign neoplastic tumors were the frequently occurring ovarian lesions. Other similar studies Guerriero et al⁹ demonstrated that endometrioma was the commonest lesion succeeded by the functional cysts. De Kroon et al¹¹ study depicted that dermoid cyst was the second frequent lesion in the ovary.

The distribution of the functional ovarian cysts are compared with other similar studies, current study pointed out that corpus luteal cysts together with hemorrhagic corpus luteal cysts were the commonest lesions confronted followed by follicular cysts. These findings were similar to the studies done by Choi and Kim.¹² In this study, the peak age incidence of nonneoplastic and benign neoplastic lesions was seen in the 3rd and 4th decade. These observations were concordance with other studies which revealed that vast majority of the benign ovarian lesions occur in reproductive age groups.^{1,13}

In our study, ovarian malignancies were seen after fourth decade majority (45.45%) of these lesions occurred between 5th to 6th decade. Study done by Quirk JT et al¹⁴ showed greater number of malignancies were seen in elderly postmenopausal women, our findings were in agreement with this study. It is conventionally accepted that epithelial tumours were the most common lesion seen globally. Pilli *et al.*, committed in their study that surface epithelial tumours of ovary added up to 70.9% of overall ovarian neoplasm, this was pursued by germ cell tumors accounting to 21.2%.¹⁵ These findings were on par with the current study which showed 83.33% (n=40) were epithelial tumours and 14.58% (n=7) were germ cell tumours.

Unilocular simple ovarian cysts are usually functional ovarian cysts and resolve spontaneously. Therapy by 3 to 6 months of oral contraceptives,

usually resolves them and this also helps to distinguish between physiological and pathological ovarian cysts. Benign ovarian tumors exhibit a wide range of clinical and histopathological patterns. Ovarian cancer has emerged as one of the commonest malignancy affecting women in India. Histomorphological study of ovarian lesions is still a gold standard method for and these observations and results prove to be valuable baseline information regarding distribution and pattern of ovarian lesions

Conclusion

From this study we conclude that functional ovarian cysts were commonest ovarian lesions. Benign ovarian cysts were common when compared to malignant ovarian neoplasms. Among the ovarian neoplasms, majority were epithelial tumours. Benign ovarian neoplasms were seen similarly in both reproductive and postmenopausal age groups. Malignant tumors were mostly in the postmenopausal group. Ovarian cancers are called “silent killer” & in most of the primary ovarian lesions they remain asymptomatic until the advanced stage. Timely diagnosis, screening, appropriate management is the pressing need today.

Limitations

Few limitations regarding this study were this is a single institute limited sample study, hence the results of this study cannot be generalized. Taking this study as reference point, future multicentric research with larger sample size involving higher number of postmenopausal cases can be planned.

Conflict of Interest: None

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