

Ovarian cysts trends at tertiary care hospital of Western Maharashtra: Retrospective analysis

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ABSTRACT

Background: Ovary is an essential organ of the female body concerned with the production of progeny. If a neoplastic change occurs in the ovaries, then a variety of tumors can develop. An ovarian cyst is a common gynecological problem. The main complications which can arise include torsion, infarction, rupture, and hemorrhage. **Methodology:** This was a retrospective and prospective study of 108 cases of ovarian pathology encountered over the period of 18 months. All the specimens sent for the histology, multiple sections were taken from each case, and routine Hematoxylin and Eosin staining was done. The diagnosis was based on the WHO classification, and results were tabulated. **Results:** Out of total ovarian lesions, nonneoplastic lesions were 73(60.33%), and neoplastic lesions were 48(39.66%). The most common nonneoplastic histopathological lesion seen was a follicular cyst (57.53%), and surface epithelial tumors (83.33%) were the most common neoplastic lesion noted in the present study. The mucinous cystadenoma was the largest tumor encountered. The common chief complaint was abdominal pain (41.49%), followed by incidental findings (20.40%). **Conclusion:** The goal of histopathological diagnosis is to identify the type of the ovarian lesion, the risk of malignancy and assessment of timing and necessity of further interventions like chemotherapy and radiotherapy.

KEYWORDS: Ovary tumors, Cystic lesions of the ovary, Histopathology of ovarian tumors

INTRODUCTION

An ovarian cyst is a common gynecological problem, divided into physiological and pathological cysts. Most ovarian cysts are asymptomatic, self-limiting, and disappear spontaneously; however, they can also be found during bimanual examination or ultrasonography. Large ovarian cysts may cause dull ache pain in the lower back or abdomen. These tumors may also increase the pressure on the bladder, it lead to the frequency of micturition and other pressure symptoms. Other signs and symptoms of ovarian cysts are pelvic pain, dysmenorrhea, dyspareunia, nausea, vomiting, breast tenderness, fullness, and heaviness in the abdomen. The main complications which can arise include torsion, infarction, rupture, and hemorrhage.[1]

The nonneoplastic cysts commonly encountered are the follicular cysts, corpus luteum cysts, endometriotic cysts, and hemorrhagic cysts. These cysts may mimic ovarian neoplasm clinically and grossly.[2]

Ovarian cyst and tumor can be diagnosed clinically, but their origin and nature cannot be determined clinically. Histopathological examination of the ovarian tumor is helpful to arrive at the correct histopathological diagnosis and prognosis. Benign tumors can be safely removed by surgeries like cystectomy, oophorectomy, salpingo-oophorectomy, and hysterectomy. The malignant tumors after surgical removal are further managed according to the type, grading, and staging. Clinical evaluation, radiological evaluation, and histopathological examination are essential in the management of ovarian

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eISSN: 2395-0471
pISSN: 2521-0394
DOI: 10.31878/ijcbr.2020.73.03

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tumors. The combined efforts of gynecologists, radiologists, and pathologists help in the accurate diagnosis and proper management of these tumors.[3]

Objectives:

- To study the clinical features of ovarian cysts.
- To study different types of cystic lesions of the ovary.
- To study the histopathological features of ovarian cysts.

MATERIAL AND METHODOLOGY

This study was conducted in the Department of Pathology, of tertiary care hospital, of Western Maharashtra after getting approval from the ethical committee. This was a retrospective as well as a prospective study of 108 cases of ovarian pathology encountered over 18 months, i.e. (May 2017 to October 2018). As some of these cases presented with unilateral and some with bilateral ovarian pathologies for statistical analysis. Bilateral lesions were considered as two lesions and unilateral as one lesion. Hence, the total no of lesions studied was 121 in 108 cases.

Sample size: N=108,

Precision = 0.02%, Prevalence = 10%, Population size = 100

Z = 1.96 (from the probability table), 95% confidence interval

Estimated sample size = 100

Formula used is, $n = z^2p(1-p)/d^2$ 51

Inclusion criteria: Specimen of complete cystic and partially solid to cystic lesions of ovary received in the Pathology department. All incidental ovarian cysts were detected in the total hysterectomy specimens with bilateral/unilateral adnexa, whose size is more than 3cm.

Exclusion criteria: Solid lesions of ovary excluded

Clinical details were noted, including age, sex, presenting complaints, and histopathological diagnosis is made. The specimen was received in 10% of formalin with appropriate identification. Specimens were described, and sections were taken and embedded in multiple blocks. After processing, tissues were embedded in the paraffin wax. Sections were cut serially at a thickness of 4-5 microns. Multiple sections were taken from each case, and routine Hematoxylin and Eosin staining was done. In a retrospective study, the relevant blocks and slides were retrieved from the records and studied. The diagnosis was based on the WHO classification, and results were tabulated. Findings obtained in this study were later compared with similar

studies obtained from Indian and western literature.[4]

Parameters noted in prescribed histopathological form were:

Clinical parameters: Abdominal pain, mass, distension, per vaginal bleeding, urinary retention, and incomplete evacuation.

Features of gross specimen received: Size, Unilateral or bilateral mass, External surface, Cut surface, Cystic, partially solid to cystic and Contents

Procedure: All the specimens sent for the histology fixed in the 10% of formalin solution, processed with automated tissue processor, paraffin-embedded and sectioned at 3-4 microns using microtome machine before staining with Hematoxylin and Eosin.

The age distribution, relevant clinical details, and investigations were obtained from the patients' case records and files. The breakup tumors classified into different subtypes.

RESULTS

Table 1. Distribution of nonneoplastic and neoplastic lesions according to histopathological

Type of lesions	Frequency (%)
Non-neoplastic lesions	73 (60.33)
Neoplastic lesions	48 (39.66)
Total no of lesions	121

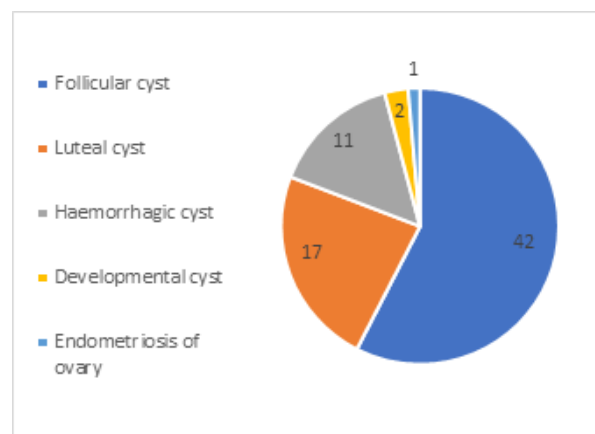


Fig 1. Histopathological types of nonneoplastic ovarian tumors

Table 2. Size wise distribution of ovarian lesions

Size range (cm)	Frequency (%)
0 to 5	89 (73.55)
6 to 10	16 (13.22)
11 to 15	11 (9.09)
16 to 20	1 (1.82)
21 to 25	3 (2.47)
26 to 30	1 (1.82)

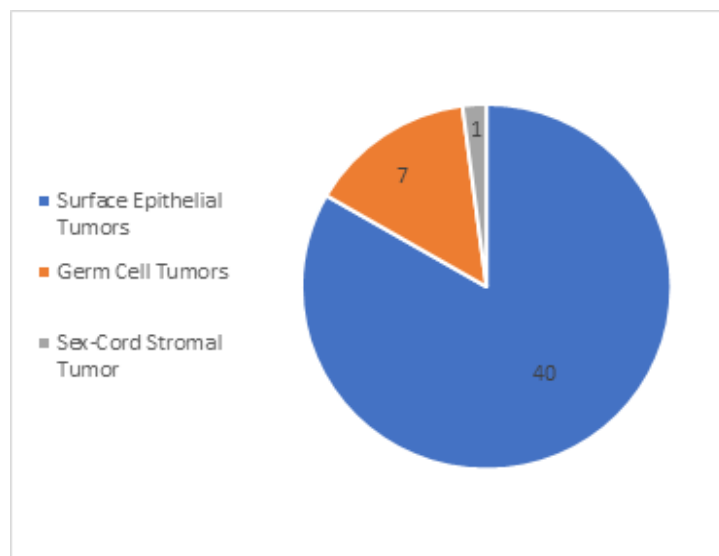


Fig 2. Histopathological types of neoplastic ovarian tumors

Age group	Frequency
11 to 20 Years	3 (2.77)
21 to 30 Years	20 (18.51)
31 to 40 Years	25 (23.14)
41 to 50 Years	43 (39.81)
51 to 60 Years	8 (7.4)
61 to 70 Years	9 (8.33)

Table 3. Age distribution of cases (n=108)

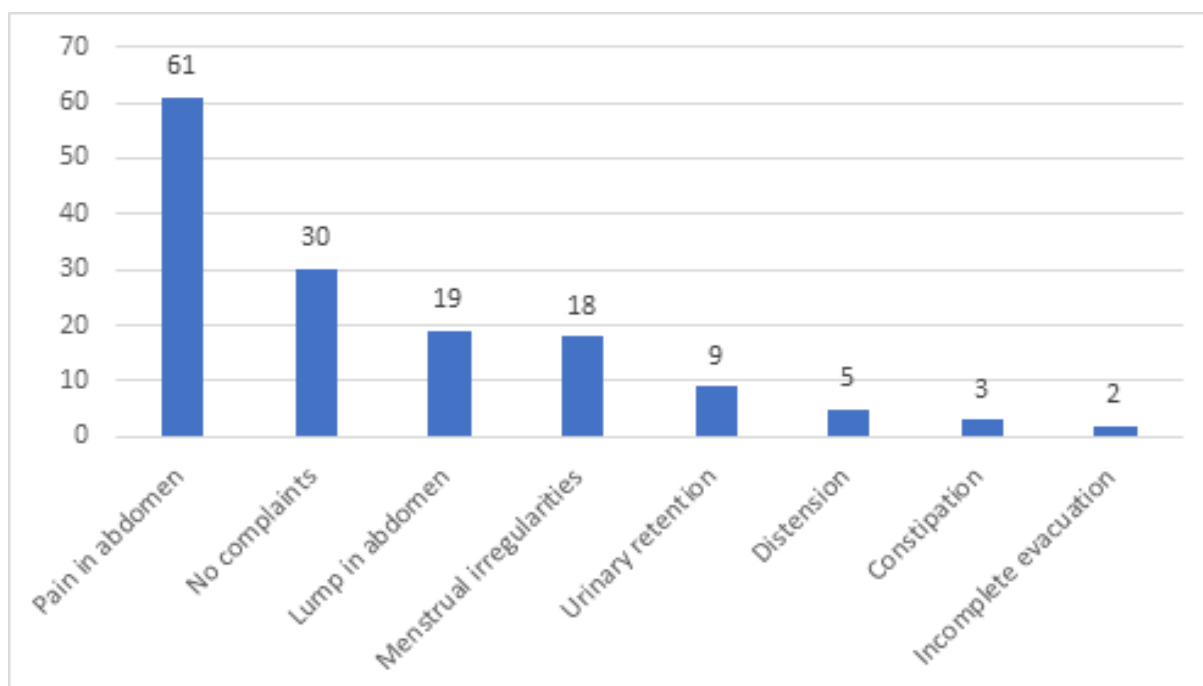


Fig 3. Presenting chief complaints of ovarian tumors



Fig 4. a) Unilocular follicular cyst (cut surface) b) Unilocular luteal cyst (cut surface) c) Hemorrhagic cyst (cut surface) d) Endometriosis of ovary (external surface) e) Granulosa cells layer on theca cell layer f) Lutein cells of corpus luteum g) Hemorrhagic cyst (hemorrhages) h) Endometrial glands in the stroma

DISCUSSION

Out of total ovarian lesions, nonneoplastic lesions were 73(60.33%), and neoplastic lesions were 48(39.66%). (Table 1) This result is well comparable with studies done by Dhakal R et al. [5], Kanthikar S N et al. [6], Sawant A et al. [7], and Gurung P et al. [2].

Out of all 73 nonneoplastic lesions, 42(57.53%) were follicular cysts, followed by 17(23.28%) corpus luteal cysts, 11(15.06%) hemorrhagic cysts, 2(2.73%) developmental cyst, and 1(1.36%) endometriosis of ovary. (Fig 1) Gurung P et al. [2] found 23 (17.0%) endometriotic cysts to be the most common nonneoplastic lesion, followed by 14(10.4%) lesions of a follicular cyst. Most of the studies have similar findings of the Corpus luteum cyst of the ovary. The

study done by Dhakal R et al. [5] (2016) was observed only 2(4.3%) corpus luteum cysts in his series. Nagamuthu EA et al [8] (2016) study. Dhakal R et al. [5] (2016) and Sawant A et al. [7] (2017) showed 5 and 6 hemorrhagic lesions, respectively, in their study. In the present study, Developmental cysts were seen in 2 (2.73%) cases. According to the literature, the actual incidence of developmental cysts is very low. These lesions are reported as rare cases in the literature because usually, they are asymptomatic and incidental [9].

We got only one case of endometriosis of ovary 1(1.36%), Abduljabbar HS et al. [1] (2015) from Saudi Arabia noted 26(10.7%) cases of endometriosis of ovary, Gurung P et al. [2] (2013) found 23(17.0%) endometriotic cyst to be the most common nonneoplastic lesion which was not correlated with present series.

Out of 48(39.66%) neoplastic lesions of the ovary in this study, Surface epithelial tumors were seen in 40(83.33%), followed by Germ cell tumors 7(14.58%) and Sex-cord stromal tumor 1(2.08%). (Fig 2) This result is comparable with studies done by other studies [7,10,14]. Metastatic tumors were not encountered in our study like others [7,10,15]. Garg N et al. [10] (2017) has reported 2(2.4%) metastatic tumors in his study.

The minimum and maximum dimensions of the lesions were 3cm and 26cm, respectively, in our study, which is like the other studies [8, 11,12]. (Table 2) The giant tumor in this study was mucinous cystadenoma with a most significant dimension of 26cm, which correlates with other documented reports that the mucinous tumors have a larger size than other tumors [2,11,13,16].

The range of age was 14 to 70 years in the present study. The maximum number of cases was 43(39.81%) falls under the 41-50-year age group. (Table 3) Similar age group presentation was also noted by various authors [7,8,16,17]. However, in a study by Abduljabbar HS et al. [1] (2015), the youngest patient was 3 months old, and the oldest was 77 years.

Nonneoplastic ovarian lesions were primarily seen in the age group of 41-50 years which is in accordance with Dhakal R et al. [5] (2017), followed by benign lesions in the age group of 21-30 years which is correlated with Sumanlatha et al. [18] (2016).

The predominant presenting symptom in our study was a pain in the abdomen 61(41.49%) which is in accordance with Dhakal R et al. [5] (2016) and Abduljabbar HS et al. [1] (2015), followed by incidental findings in 30(20.40%), abdominal lump in 18(12.24%) and other complaints were menstrual abnormality,

distension of abdomen, urinary retention and constipation. (Fig 3).

CONCLUSION

Clinical parameters like patient age, presenting complaints, dimensions of lumps help in the early clinical diagnosis of ovarian lesions. The goal of histopathological diagnosis is to identify the type of ovarian lesion and prevent the risk of malignancy and metastasis. In cases of malignancy, the need for further interventions like chemotherapy and radiotherapy also depends on the accurate histopathological diagnosis. Early diagnosis of ovarian lesions and treatment of patients can reduce morbidity and mortality.

Conflict of interest : Nil

Source of funding : Nil

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