Clinicomorphological Spectrum of Ovarian Cystic Lesions

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ABSTRACT

Background

Ovarian cysts, which present as neoplastic and non-neoplastic lesions, are the most common gynaecological cause of hospital admissions. Early diagnosis is difficult due to asymptomatic nature. Clinical, radiological and gross examination alone cannot distinguish benign from malignant lesions, hence, histopathological examination is important for diagnostic, therapeutic and prognostic approach.

Objective

The objective of the study is to analyze the spectrum of ovarian cystic lesions with their clinico-morphorgical features.

Method

This is a prospective study done in between July 2014 and July 2015 in Dhulikhel Hospital-Kathmandu University Hospital. Clinical data of patients were obtained from hospital records and requisition submitted along with the tissue specimens received in the department.

Result

A total 84 cases of ovarian cystic lesions were studied. Among these, 47 (55.9%) were non-neoplastic lesions, 33 (39.3%) were benign neoplasms, two (2.4%) were borderline and two (2.4%) were malignant neoplasms. The most common non-neoplastic lesions were follicular cysts, 26 (55.3%) followed by simple cysts 14 (29.8%), hemorrhagic cysts five (10.6%) and corpus luteal cysts two (4.3%). Among all neoplasms, 19 (51.4%) were mature cystic teratoma followed by 10 (27.0%) cases of mucinous cystadenoma and four (10.8%) cases of serous cystadenoma. Between two (5.4%) malignant cases, one was immature cystic teratoma and the other was mucinous cystadenocarcinoma. Besides these, two (5.4%) cases of borderline mucinous cystadenoma were also present.

Conclusion

Ovarian cystic lesions are difficult to categorize on the basis of clinical and radiological findings. Histopathological examination plays a significant role to differentiate benign lesion from malignant as well as for the proper management.

KEY WORDS

Neoplasm, non-neplastic lesions, ovarian cyst

INTRODUCTION

Ovarian cystic lesions are the most commonly encountered gynecological problem. Most of the benign and malignant ovarian masses are predominantly cystic.[1] They present as non neoplastic or neoplastic and behave in diverse ways. Hence, due to broad morphological spectrum they are categorized into benign cyst, benign, borderline and malignant tumors. Benign ovarian cysts are the fourth most prevalent gynecological cause of hospital admissions where as ovarian carcinoma represents the sixth most common female cancer and the fourth leading cause of death due to cancers in women.[2-4]

These cystic lesions may remain unnoticed for a long until they attain a large size with symptoms. Diagnosis of these cysts are made through imaging tools or tumor markers but these may not always be helpful to differentiate benign from the malignant lesions.[1] The nature of ovarian cystic lesions are difficult to determine by clinical examination and even on surgical exploration. Hence, the gross appearances are useful to a certain extent in distinguishing the individual tumors.[5] However, thorough histopathological examination is mandatory to find out the origin and the type of tumor.

The management and prognosis largely depend on the histological type and the grade of the tumor.[6] Hence, the study was conducted to determine the clinico-morphological spectrum of these cystic lesions which are more prevalent in our population.

METHODS

This is a prospective study done in Department of Pathology of Dhulikhel Hospital-Kathmandu University Hospital during the period of one year from July 2014 to July 2015. All the specimens of ovarian cystic lesion, which underwent cystectomy, oophorectomy or total abdominal hysterectomy with unilateral/bilateral salphingo oopherectomy were included in the study. Relevant clinical data, which consist of information regarding age, clinical presentation, involvement (unilateral or bilateral) was obtained from the hospital records and the requisition form submitted along with the tissue specimens received in the department.

The specimens were analysed in detail macroscopically for various parameters like size, external surface, consistency and contents of cyst. The tissues were processed by routine paraffin techniques, and sections stained with Haematoxylin and Eosin was taken for microscopic examination.

RESULTS

A total 84 number of cases were studied. Among those, 47 (55.9%) were non-neoplastic lesions, 33 (39.2%) were benign neoplasms, two (2.3%) were borderline and two (2.3%) were malignant neoplasms. The age of the patients ranged from 12 to 73 years and the age wise distribution of overall ovarian cystic lesions are detailed in table 1.

Table 1. Age wise distribution of ovarian cystic lesions

Age (yrs)	Non neoplastic	Benign	Borderline	Malignant	Total (%)
10-20	3	3	0	1	7 (8.3)
21-30	6	9	0	1	16 (19.0)
31-40	15	12	1	0	28 (33.4)
41-50	20	6	0	0	26 (31.0)
51-60	3	2	1	0	6 (7.1)
>60	0	1	0	0	1 (1.2)

The size of ovarian cysts ranged from 3 to 23 cm with mean±SD 7.32±5.17 cm. Among 84 cases, 69 (82.14%) were unilateral and 15 (17.8%) were bilateral. Out of 15 bilateral cases, 9 (60%) were non-neoplastic and 6 (40%) were neoplastic lesions. The most common neoplastic lesion with bilateral presentation was mature cystic teratoma, which comprised of five (13.5%) out of 37 ovarian neoplasms. Follicular cysts were the most common non-neoplastic lesions. Bilateral follicular cysts were seen in six (12.7%) out of 47 non neoplastic lesions. However, bilaterality was not observed in borderline or malignant neoplasms. The most common clinical presentation was abdominal pain 41 (48.8%), followed by abnormal uterine bleeding 30 (35.7%), abdominal distention seven (8.3%), abdominal palpable mass three (3.6%), prenatal ultrasonography two (2.4%) and stress incontinence one (1.2%) (Table 2).

Table 2. Clinical presentation of ovarian cystic lesions

Clinical presentation	No. of cases (%)
Abdominal pain	41 (48.8)
Abnormal uterine bleeding	30 (35.7)
Abdominal distention	7 (8.3)
Abdominal palpable mass	3 (3.6)
Prenatal ultrasonography	2 (2.4)
Stress incontinence	1 (1.2)
Total	**84 (100)**

The consistency of ovarian lesions was predominantly cystic. However, four (4.76%) were partially solid to cystic. In the present study, among cystic lesions 46 (54.7%) showed serous fluid. In 20 cases (23.8%), content was greasy with sebaceous material, hair tufts and teeth. Thick viscid fluid was seen in 13 (15.4%) cases and the remaining five (5.9%) cases contained hemorrhagic fluid.

Forty-seven (55.9%) cases of all ovarian cystic lesions were non-neoplastic. The most common non-neoplastic lesion was follicular cysts followed by simple cysts, hemorrhagic cysts and corpus luteal cysts (Table 3). Most of the patients of non-neoplastic lesions presented with more than one symptom, pain abdomen being the most common symptom followed by abnormal uterine bleeding (Table 2).

Table 3. Non neoplastic lesions of ovary

Non neoplastic lesions of ovary	No. of cases (%)
Follicular cysts	26 (55.3)
Simple cysts	14 (29.8)
Hemorrhagic cysts	5 (10.6)
Corpus luteal cysts	2 (4.3)
Total	**47 (100)**

Among 37 neoplasms, 33 were benign. The most common benign neoplasm was mature cystic teratoma, followed mucinous cystadenoma and serous cystadenoma (Table 4). The patients with benign neoplasms most commonly presented with pain abdomen. During prenatal ultrasonography, one case each of mucinous cystadenoma and mature cystic teratoma was diagnosed.

Table 4. Neoplastic lesions of ovary

Neoplastic lesions of ovary	No. of cases (%)
Benign	
Mature cystic teratoma	19 (51.4)
Mucinous cystadenoma	10 (27.0)
Serous cystadenoma	4 (10.8)
Borderline	
Borderline mucinous cystadenoma	2 (5.4)
Malignant	
Immature cystic teratoma	1 (2.7)
Mucinous cystadenocarcinoma	1 (2.7)
Total	**37 (100)**

Two cases of malignant neoplasms were also observed. One case was immature cystic teratoma and the other was mucinous cystadenocarcinoma (Table 4). Both the cases presented with palpable abdominal mass. Similarly, two cases of borderline mucinous cystadenoma (Table 4) were present. The clinical presentation of one was palpable abdominal mass and the other was abdominal distention.

DISCUSSION

Cystic lesions of the ovary are common gynecological surgical specimens. There is confusion in the diagnosis of non-neoplastic and neoplastic lesions of ovary due to the similar clinical presentations, although it is diagnosed as mass or cystic lesion on ultrasound. Hence, these lesions are removed prophylactically in routine oopherectomies and hysterectomies.[7] Due to different clinical appearance and behavior of these cystic lesions, histopathological examination remains important for management of tumor.[8]

The present study showed the age wise distribution of ovarian cystic lesions from 12 to 73 years. Similar observation were also reported by Bhattacharya et al. and Kanthikar et al. in two different studies.[8,9] Hence, ovarian lesions could present from childhood to post menopausal age group.

Kanthikar SN et al. showed 78.2% tumors with unilateral presentation and 21.8% were bilateral.[9] Similarly, the present study showed 16.8% with bilateral presentation and 83.8% with unilateral. The incidence of laterality also resembled with the study done by Bhuvanesh et al. (25.7%).[10] But, Madan et al. and Verma et al. observed low incidence of bilaterality ie. 11% and 11.9% respectively in their studies.[11,12] Jha et al. observed that 50% of metastatic tumors were bilateral and 18.3% of bilateral ovarian neoplasms were metastatic.[13] In contrast to Jha et al. bilaterality was observed on benign ovarian tumors in this study.[13] Maharjan S et al. observed bilaterality in mature cystic teratoma which was similar to the present study.[14]

In the present study, non-neoplastic lesions were 55.9%. The observation was similar to the studies done by Kreuzer GF et al. and Martinez Onsurbe P et al. which comprised of 40.3% and 41.7% respectively.[15,16] Yasminet al. and Gupta et al. in their studies reported follicular cysts were the most common non-neoplastic lesion which was comparable to the present study.[17,18]

Most of the patients of non-neoplastic lesions presented more than one symptoms. Pain abdomen being the most common followed by abnormal uterine bleeding. Kanthikar SN et al. also observed similar clinical presentation in non-neoplastic lesions.[9]

Benign ovarian neoplasms were 89.18% among neoplastic lesion in the present study population. The incidence was higher in comparison to the study done by Ahmad et al. and Pilli et al which showed 59.2% and 75.2% respectively.[19,20] Mature cystic teratoma was the most common benign neoplasm, followed by mucinous cystadenoma and serous cystadenoma. In the studies of Yasmin et al., Khan et al. and Kayastha S the most common benign neoplasm was serous cystadenoma followed by mature cystic teratoma.[17,21,22] In context of benign neoplasm, studies done by Kanthikar SN et al. and Kuladeepa AVK et al. observed patient presented with lump in abdomen followed by pain abdomen whereas in the present study most of them presented with pain abdomen.[9,23]

In the present study, 5.4% cases of malignant neoplasms were seen, which was very low compared to studies done by Pilli et al. and Saxena et al. which accounted for 21.8% and 23.6%, respectively.[20,24] Similarly, the study done by Bhuvanesh U et al. and Kuladeepa AVK et al. observed patient presented with lump in abdomen followed by pain abdomen whereas in the present study abdominal distention and palpable abdominal mass were the common presenting symptom.[10,23] Borderline neoplasm were 5.4% in the present study which was similar to the finding in studies done by Gupta et al. and Pilli et al.[18,20]

CONCLUSION

Ovarian cystic lesions present from prepubertal to the postmenopausal age. Non-neoplastic lesions were more common than neoplastic lesions. Follicular cysts were the most common non-neoplastic lesions whereas mature cystic teratoma remained the common neoplastic lesion. Pain abdomen remained the most common symptom for both non-neoplastic and neoplastic lesions. Abdominal distention and abdominal mass were observed in neoplastic lesions. However, bilaterality was most commonly observed in benign neoplasms especially in mature cystic teratoma.

The ovarian cystic lesion behaves in diverse ways and show broad morphological spectrum. Hence, these cysts often require excision because of their location, lack of early screening modalities and lack of specific symptoms and signs, which suggest malignant nature. The gross appearances are useful to a certain extent in distinguishing the individual tumors, for the distinction of the benign from the malignant ones. However, a sound knowledge of the microscopic features is essential for an accurate diagnosis. Hence, a very extensive sampling and careful histopathological examination become a rule as the patient's management and prognosis depend largely on the histologic type of tumor.

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