

Histopathological study of ovarian cystic lesions in Tertiary Care Hospital of Kathmandu, Nepal

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Abstract

Introduction: Ovarian cysts are commonly encountered lesions. They are amongst the most frequent cause of hospitalization and surgery in gynecologic practice. One cannot confidently distinguish a benign lesion from a malignant one on the basis of clinical, radiological or gross characteristics alone so a histopathology examination is a must as it guides therapy. The study was undertaken to determine the morphologic spectrum of the cystic lesions of the ovary.

Methods: This is a descriptive study which was carried out at Kathmandu Medical College Teaching Hospital for a period of two years from 1st January 2011 to 31st December 2012. A Total of 135 cases of ovarian cysts were received and processed in the Pathology Department. Hematoxylin and Eosin stained slides were examined.

Results: Among the 135 ovarian cystic lesions, 119 cases (88.15%) were unilateral and 16 cases (11.85%) were bilateral. There were 59 cases (43.7%) of benign cysts, 69 cases (51.1%) of benign tumors, 5 cases (3.7%) of malignant tumors and 2 cases (1.5%) of borderline epithelial tumors. The age of patients ranged from 13 years to 73 years with mean age of presentation of 43 years. Among the ovarian cystic lesions the incidence of mature cystic teratoma was the highest (30%). The most common non-neoplastic cyst was endometriotic cyst (39%), while the most common benign tumor was mature cystic teratoma (58%). The malignant tumor encountered in the study was serous cystadenocarcinoma. Two cases of borderline epithelial tumors (1.5%) were also observed in the study.

Conclusion: The most common cystic lesion that were encountered in the study was benign tumor followed by benign cyst. Of the benign tumors, mature cystic teratoma was the most frequently observed lesion. Among the non-neoplastic cysts, endometriotic cyst was the most frequently observed lesion.

Keywords: borderline tumors, endometriosis cyst, mature cystic teratoma, Ovarian cyst, serous cystadenocarcinoma.

Introduction

Ovaries are a common site for non-neoplastic and neoplastic lesions. Distinguishing non-neoplastic lesion from a neoplastic lesion is a challenge clinically and is important in guiding therapy. These lesions behave in diverse ways and generally escape detection until they attain a large size or cause signs and symptoms. They show diverse morphological spectrum and can be categorized into benign cysts, benign, borderline and malignant tumors. Further subdivision of tumors can be done according to the WHO classification on the basis of tissue of origin into surface epithelial tumors, sex cord-stromal

tumors, germ cell tumors, metastatic tumors and tumors from ovarian soft tissue or non-neoplastic process. While the benign lesions forming pelvic masses and mimicking ovarian tumors can be categorized into follicular cysts/ simple cysts, corpus luteal cysts, endometriotic cysts and hemorrhagic cysts. This distinction between non-neoplastic lesions and neoplastic lesion is necessary since proper treatment depends upon the histological abnormality. Hence this study was undertaken to determine the histopathological spectrum of these cystic lesions in our hospital.

Methods

This descriptive study was done in the Department of Pathology, KMCTH over a period of two years from 1st January 2011 to 31st December 2012. Cases of ovarian cystic lesions which underwent oophorectomy or hysterectomy with bilateral/ unilateral salpingectomy were included in the study. Incidentally found cystic lesions were not included in the study. All relevant data, including age, clinical presentation and laterality (unilateral or bilateral) were obtained from the histopathological form. Gross and microscopic findings of cases were studied. Slides were stained with Hematoxylin and Eosin (H&E).

Results

Most of the patients presented with abdominal pain or mass lesion on ultrasound. The age range of patients was from 13 years to 73 years. Among these lesions, 119 cases (88.15 %) were unilateral and 16 cases (11.85%) were bilateral. There were 59 cases (43.7%) of non-neoplastic cysts among which 50 cases presented as unilateral mass and nine cases presented as bilateral masses. Among the bilateral masses there were five cases of endometriotic cysts of which one showed endometriosis in the appendix too. Size of the non-neoplastic cysts ranged from 3 cm to 12cm in diameter. The incidence of ovarian cysts and tumors is given in Table 1 below while Figure 1 shows the incidence of benign cysts comprising of various lesions.

Table 1: Incidence of ovarian cysts and tumors

Types of cystic lesions	Number of cases	Percentage distribution
Endometriotic cyst	23	17.0%
Corpus luteal cyst	13	9.6%
Follicular cyst/ simple cyst	14	10.4%
Hemorrhagic cyst	6	4.4%
Infarcted ovary	3	2.2%
Mature cystic teratoma	40	30%
Serous cystadenoma	22	16.2%
Mucinous cystadenoma	6	4.4%
Serous adenofibroma	1	0.7%
Serous cystadenocarcinoma	5	3.7%
Borderline mucinous tumor	1	0.7%
Borderline papillary serous tumor	1	0.7%
Total	135	

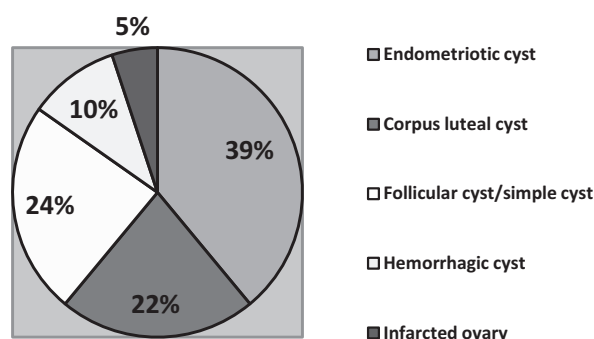


Figure 1: Incidence of benign cysts

There were 69 cases (51.1%) of benign tumors. The youngest patient in the study, a 13 year old had mature cystic teratoma and the oldest patient a 73 year old had mucinous cystadenoma. Size range for serous cystadenoma was from 3.5 to 12cm diameter, for mature cystic teratoma 5 to 12 cm diameter and for mucinous cystadenoma from 11 to 30 cm diameter. The incidence of benign tumors is shown in Figure 2 below. There were three cases of bilateral mature cystic teratoma in the study.

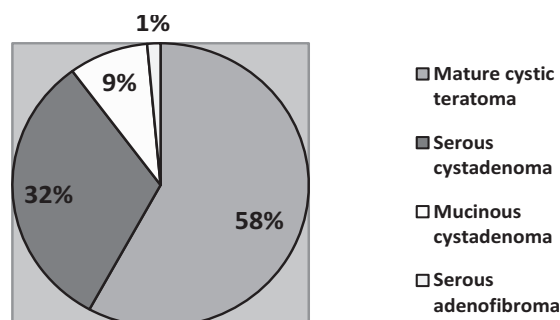


Figure 2: Incidence of benign tumors

There were five cases (3.7%) of malignant tumors. The age range in the study for malignant tumors was 38 to 66 years. All the five cases of malignant tumor in our study were serous cystadenocarcinoma (100%) of which four had bilateral involvement. Size of these tumors ranged from 7 to 20 cm diameter. The two borderline tumors in the study were mucinous tumor and papillary serous tumor of which the papillary serous tumor had bilateral involvement.

Discussion

Ovarian cystic lesions are common surgical specimens. Realizing that the ovary is normally a partially cystic structure and that the risk of carcinoma developing in these cystic structures is negligible should help avoid many unnecessary excisions¹. These lesions can be visualized

sonographically in women of all ages. The presence of a single (unilocular, anechoic, thin-walled) cystic mass measuring less than 3cm is considered within normal limits. Gynecologists for years have prescribed oral contraceptives for the resolution of functional ovarian cysts and to distinguish between them and pathological cysts of the ovary^{2,3}. However, follow-up is recommended if cysts exceed 3 cm. Some of these functional ovarian cysts resolve spontaneously.⁴ The non-neoplastic cysts commonly encountered are the follicular cysts, corpus luteum cysts, endometriotic cysts and hemorrhagic cysts. These cysts may mimic ovarian neoplasm clinically and grossly. They comprise a spectrum of morphologic changes whether physiological or pathological.

In this study there were 135 cases of cystic lesions of which 59 cases (43.7%) were non-neoplastic cysts, 69 cases (51.1%) were benign tumors, five cases (3.7%) were malignant tumors and two cases (1.5%) were borderline tumors. In comparison to a previous study done at the same center over a period of three years by Pudasaini et al⁵ there were a total of 102 cases of ovarian cysts/ tumors with 87.3% benign cyst and tumors and 12.7% malignant tumors. In a study done by Zaman et al⁶, 498 cases were studied in one year. The authors encountered 68.87% of non-neoplastic lesions and 31.12% of neoplastic lesions. In our study, there were 43.7% of non-neoplastic lesions and 56.3% of neoplastic lesions.

Among the 59 cases of benign cysts (43.7%), there were 13 cases of corpus luteum cyst (9.6%), 23 cases of endometriosis (17%) and 6 cases of hemorrhagic cyst (4.4%) as compared to a previous study done by Pudasaini S. et al⁵. The authors found 13.7% of haemorrhagic corpus luteal cysts and 5.9% cases of endometriotic cysts from a total of 102 cases. In a study done by Maliheh et al⁷, 2961 benign ovarian masses were examined. The authors found 57.1% cases of functional cyst followed by 5.9% cases of endometriotic cysts. In our study all cases of endometriosis were in the ovary with one case having endometriosis in the appendix too. Cohen et al⁸ have shown the ovary to be the commonest site for endometriosis.

There were 69 cases (51.1%) of benign tumors in the study of which 29 cases (42%) were benign epithelial tumors and 40 cases (58%) were benign germ cell tumors. The cases of benign epithelial tumors included serous cystadenoma (32%), mucinous adenoma (9%) and serous adenofibroma (1%). Benign Germ cell tumor encountered in the study was mature cystic teratoma (58%). Age range for patients with mature cystic teratoma was from 13 to 60 years. In our study incidence of mature cystic teratoma was higher in comparison to other studies. In the study done by

Maliheh et al⁷, the most common benign tumor was serous cystadenoma (38%) followed by mature cystic teratoma (30%), mucinous cystadenoma (22%), adenofibroma (5%) and fibroma-thecoma (5%). In the study by Bhattacharya et al⁹ large majority of neoplastic tumors consisted of epithelial tumours (61.60%) and germ cell tumors (24.8%) followed by sex cord stromal tumors and malignant tumors. In the study done by Gupta et al¹⁰, surface epithelial tumours were the commonest (48.8%) followed by germ cell tumours (23.9%), sex cord stromal tumours (8.3%) and metastatic tumours (2.0%). In a study done by Jha et al¹¹, surface epithelial tumors were most common (52.2%) followed by germ cell tumors (42.2%). In the study done by Mondal et al¹² the commonest benign tumor was serous cystadenoma (29.9%), followed by mature teratoma (15.9%) and mucinous cystadenoma (11.1%). In the study by Iqbal et al¹³ serous cystadenoma (38.5%) was the most common benign tumor followed by mature cystic teratoma (30.8%). In the study done by Yasmin et al¹⁴ the commonest benign tumor was also serous cystadenoma (24%) followed by mature cystic teratoma (18%).

In our study there were five cases (4.5%) of malignant tumor, all five cases (100%) were epithelial tumors. Malignant tumor observed in the study was serous cystadenocarcinoma. Though there were few cases of malignant tumor the results are similar to studies by Mondal et al¹² and Bhattacharya et al⁹ who also found surface epithelial tumors to be the commonest malignant tumor. There were two cases of borderline epithelial tumors.

Conclusion

Ovarian cystic lesions are commonly encountered surgical specimens. They often present as a mass lesion so it is difficult to categorize them as non-neoplastic or neoplastic based on clinical, radiological or surgical findings. Histopathological examination is needed to diagnose these lesions and to categorize them for proper treatment. In cases of benign functional cysts spontaneous resolution may take place so symptomatic treatment and observation may help minimize surgery in these patients.

Conflict of interest

None declared.

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