

ORIGINAL PAPER

Spectrum of ovarian cystic lesions- a histopathological study

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ABSTRACT

Objective: The aim of this retrospective study is to determine the frequency of ovarian cystic lesions involving both neoplastic and non-neoplastic entities, its distribution and histopathological spectrum including both benign and malignant lesions. **Method:** This study involved analyzing 67 cases of cystic ovarian lesions /tumors reported in Histopathology section of Tezpur Medical College and hospital in a 24 month period. They were classified according to WHO classification of ovarian tumors (2003). Clinical details of patients were perused according to archived records. **Result:** Cystic lesions were grouped according to their nature whether neoplastic or non-neoplastic and whether benign, borderline or malignant. The neoplastic cystic lesions comprise the majority of lesions comprising 64.17% while non-neoplastic lesions comprise 35.82%. Among neoplastic lesions cyst adenomas comprise majority (46.5%) of benign lesions and malignant lesions comprise 6.9% of lesions. Among non-neoplastic lesions simple/follicular cysts comprise 54.16% of lesions. **Conclusion:** Benign cystic neoplastic lesions outnumber the non-neoplastic lesions and benign tumors are more common than malignant ones. Ovarian lesions are not easily detected by physical or laboratory investigations hence one has to depend in addition to microscopic appearance of the tumor other clinical parameters such as age of the patient, presenting complaints, location of lump and dimension of lump.

Keywords: Serous cyst adenoma, papillary serous cyst adenocarcinoma, undifferentiated carcinoma

INTRODUCTION

The ovaries are responsible for a variety of cystic lesions which are attributed to multiple hormonal and physiologic stimuli right from childhood to menopause. An adnexal mass is one of the most common management dilemmas. Even non neoplastic cystic lesions are also frequently responsible for a pelvic mass and associated with abnormal hormonal manifestations often mimicking a neoplasm thus causing diagnostic confusion. Also important to note that some feminising ovarian lesions are

also responsible for some endometrial carcinomas. Ovarian neoplastic lesions are notorious for their large size and relatively mild symptoms.¹ In spite of recent advances Pelvic ultrasound, MRI and CT imaging has compounded the problem by detecting incidental cysts in asymptomatic women without the ability to differentiate reliably between the non-neoplastic lesions and benign from malignant ones.² The rate of ovarian tumors is 2-6 cases per 1,00,000 women per year in Asian countries³ and in India it is comprising of up to 8.7% cancers in the different parts of the country.⁴ In addition the ovary is also a very common metastatic site frequently presenting with unknown primary requiring in certain cases a proper immunohistochemistry study. Diagnosis of various histological patterns and incidence in different age groups of ovarian neoplasms and non-neoplastic cysts are therefore very important in diagnosis, treatment and prognosis.

METHODS

This retrospective study was done in the department of pathology, TMCH and cases from March, 2014 to February, 2016 were included. All cases of symptomatic ovarian cystic lesions that went oophorectomy or hysterectomy with bilateral salpingectomy were included in the study. Oophorectomy specimens without pathologic changes were excluded. The data was obtained which consists of relevant information about age, clinical presentation, size of tumor, bilaterality, provisional diagnosis and operative findings. Gross and microscopic findings of cases were studied. Representative tissue sections were taken as per surgical pathology protocol.⁵ Slides were then stained with Haematoxylin and Eosin (H&E) and reported as per WHO classification 2013.

RESULTS

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Among the total 67 cystic lesions studied in this paper, 43 were neoplastic (62.69%) and 24 were non neoplastic (37.31%).

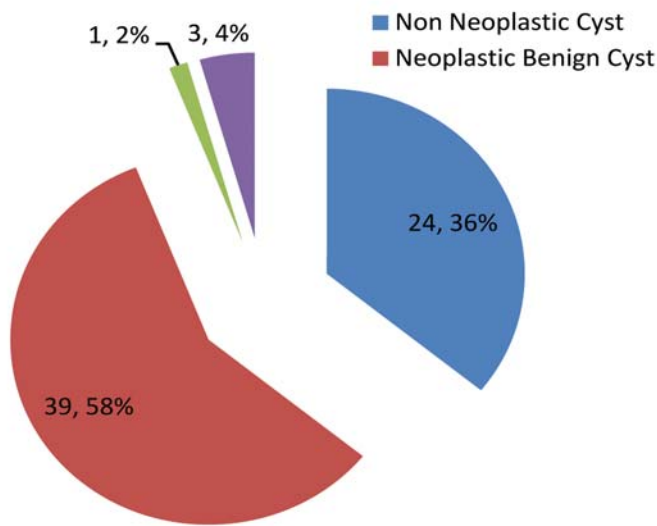


Figure 1 Pie chart showing % distribution of all cases of cysts

The patient age range for all cases was from 14 years to 71 years. 55 cases were unilateral and 12 cases had bilateral masses. The patients usually presented with lower abdominal pain/fullness/ menstrual irregularities with bleeding between periods/mass abdomen on ultrasound. One case of a 14 year old child with a ruptured corpus luteal cyst presented clinically with acute intra-abdominal hemorrhage. Non neoplastic cysts ranged in size from 3 cm to 7 cm with simple/follicular cyst accounting for 54.16% of cases.

Table 1 Incidence of Non-neoplastic cysts

Types of cystic lesions	No of cases(24)	Percentage distribution
Simple/follicular cyst	13	54.16%
Endometriotic cyst	04	16.66%
Corpus luteal cyst	04	16.66%
Surface inclusion cyst	03	12.5%

The neoplastic cysts comprised majority of all cystic lesions, comprising of 43 cases (62.69%). The age range of benign neoplastic lesions was from 20 years to 70 years with serous cyst adenomas comprising majority of lesions. The size ranged it was from 3 cm to 12 cm. Incidence of benign tumors is shown below.

Table 2 Incidence of Neoplastic (Benign) cyst

Types of cystic lesions	No of cases(39)	Percentage distribution
Mature cystic teratoma	19	48.71%
Serous cystadenoma	14	35.89%
Mucinous cystadenoma	06	15.38%

Malignant cystic lesions were 3 in no comprising 6.9% of all neoplastic lesions. Age ranged from 40 years to 60 years. One case each of papillary serous cyst adenocarcinoma, granulosa cell tumor ovary and undifferentiated carcinoma ovary were seen. All were unilateral and size ranged from 10 to 18 cm. One case of granulosa cell tumor ovary seen also had associated complex endometrial hyperplasia with atypia. Also one case of unilateral borderline mucinous cyst adenoma was seen.

Table 3 Incidence of malignant cyst

Types of cystic lesion	No of cases(3)	Percentage distribution
Papillary serous cysta	01	33.33%
denocarcinoma		
Granulose cell tumor	01	33.33%
Undifferentiated carcinoma	01	33.33%

DISCUSSION

The ovary is a complex structure from an embryological, anatomical and functional point of view. Before ultrasound was routinely available the finding of a pelvic mass or a palpable ovary⁶ particularly in post-menopausal women was considered to be an indication for surgery, but with advanced in diagnostic procedures percutaneous USG guided FNAC now appears a useful tool in identifying the non-neoplastic cysts.⁷ Realizing that the ovary is partially a cystic structure and the risk of malignancy is small suggests that many of these cases may be handled conservatively.⁸

In this study there were 67 total cases of ovarian cysts out of which 24 were non-neoplastic (37.31%), 39 were benign (58.20%), 1 were borderline (1.49%) and 3 were malignant (4.47%). These results are similar in comparison to the findings of Gurung et al⁹ who had in their two year study of 135 cases had 43.7% non-neoplastic lesions and 56.3% neoplastic lesions. Also a 3 year study done in the same centre by Pudasani et al¹⁰ out of 102 cases had 87.3% benign cysts and tumors and 12.7% malignant tumors. Similar were findings of Kreuzer et al¹¹ and Martinez et al.¹² However Zaman et al¹³ encountered 68.87% non-neoplastic lesions and 31.12% neoplastic lesions. This disparity could be attributed partly to inclusion criteria as in our case only cysts causing clinical symptoms were included. Also important to note that in our study the low no of cases can be attributed to our college being only a very new medical college set up only 3 years ago.

Among the 24 non-neoplastic cysts the majority were simple/follicular cysts 13 in no (54.16%), endometriotic cyst 4 in no (16.66%), corpus luteal cyst 4 in number (16.66%) and surface inclusion cyst 3 in number (12.5%). These findings are in concordance with Gurung et al⁹ who out of 59 cases (43%) had 17% cases of endometriotic cyst and 9.6% cases of corpus luteal cyst. Kanthikar et al¹⁴ also found follicular cysts in 76.7% and corpus luteal cyst in 20.54% cases. Incidence of endometriotic cyst was similar to Fatima Z¹⁵ and Tanwani et al¹⁶ who found 16% and 20% cases respectively. Age range in Endometriotic cyst

cases in our study was from 20-32 years with a mean of 25 years which was similar to Saeed et al¹⁷ who found a mean of 25-29 years.

This study had 39 benign tumors (58.20%) out of which 20 were benign surface epithelial tumors (51.28%) and 19 were germ cell tumors (48.71%). The benign epithelial tumors were serous cystadenoma (35.89%) and mucinous cystadenoma (15.38%). Our findings were similar to Pudaisini et al¹⁰ who had serous cystadenoma (40.2%) and mucinous cystadenoma (9.8%) cases. All the Benign germ cell tumors in the study was a mature cystic teratoma (48.71%) which ranged from 21 years to 58 years which was also similar to Gurung et al⁹ who had an age range from 13 to 60 years.

Table 4 Comparisons table of frequency of germ cell tumors

Ovarian tumors	Couto et al ¹⁸	Pilli et al ¹⁹	Gupta et al ²⁰	Bhuvanesh et al ²¹	Kanthikar et al ¹⁴	Gurung et al ⁹	Present study
Germ cell tumors	20.39%	21.2%	23.9%	10.85%	22.85%	58%	48.71%

Incidence of mature cystic teratoma in our study and Gurung et al is quite similar and high in contrast to other studies in different parts of the country. Geographic diversity, different study periods may explain the differences. However further evaluation is needed.

Table 5 Comparisons table of frequency of surface epithelial tumors

Ovarian tumors	Bhattacharya et al ²²	Gupta et al ²⁰	Couto et al ¹⁸	Jha et al ²³	Pilli et al ¹⁹	Bhuvanesh et al ²¹	Present study
Surface epithelial tumors	61.60%	48.8%	68.81%	52.2%	70.9%	78.57%	51.28%

From above chart the incidence of surface epithelial lesions in our study was similar to many of the studied already done^{20, 23} and this may be because of differences in reporting criteria as we have considered an anechoic cystic unilocular mass <3 cm to be within normal limits.⁹

Our study had 3 cases of malignancy (6.9%) of which two were aged 40 years and remaining one aged 60 years with a mean of 46.6% years. One case each of surface epithelial tumor (33.33%), sex cord stromal tumor (33.33%) and undifferentiated carcinoma (33.33%) was seen. Abdulla et al²⁴ also found 33.33% cases of serous carcinoma along with similar findings by Gupta et al and Khan et al.²⁵ Peak incidence of invasive epithelial ovarian cancer is at 50-60 years of age according to Kanthikar et al¹⁴ and Abdulla et al²⁴ found a prevalence of malignancy at only 15.6% between 20-51 years and 49.3% between 51 and above.

Merino et al²⁶ and Abdulla et al²⁴ found young females aged 30-40 years of age are frequently affected by borderline tumors. Our patient with a borderline mucinous cyst adenoma was however 52 years old.

Our case of granulosa cell tumor was premenopausal and had associated complex endometrial hyperplasia with atypia. Ukahet al²⁷ also found excess estrogen secreted by these tumors causes continuous stimulation of endometrial lining which can cause

endometrial hyperplasia and potentially endometrial cancer.

The lack of diversity of lesions in this study necessitates further studies concentrating in this part of North East India with more case load to accurately reflect the distribution of different types of ovarian neoplasms.

CONCLUSION

Benign cystic neoplastic lesions outnumber the non-neoplastic lesions and benign tumors are more common than malignant ones. However in spite of being uncommon malignant lesions is a silent menace and is not associated with significant symptoms. The study has reaffirmed the occurrence of primary malignant ovarian tumors in younger age groups. Also depending upon histological subtyping of ovarian lesions a careful search to rule out endometrial pathology should also be made. Keeping in mind the relatively isolated geographic location of the place of study, poverty and illiteracy awareness among public and doctors will be helpful particularly in case of young females presenting with ovarian mass and a possibility of malignancy ruled out.

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