

Correlation of Clinical Presentations with Histopathological Findings of Suspected Ovarian Tumor cases in Chattogram Medical College Hospital

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Abstract

Background: Ovarian tumours are a leading cause of death in Bangladeshi women. Information about the clinical and pathological characteristics of ovarian tumours in Bangladesh is scanty. Present study aims to determine the correlation between clinical presentations and histopathological findings of suspected ovarian tumor patients admitted to a tertiary care hospital in Bangladesh.

Materials and methods: Forty five women with ovarian mass scheduled for surgery were included in this prospective observational study from the Department of Obstetrics and Gynecology of Chittagong Medical College Hospital during the period 1st January to 30th June 2021. Demographic, clinical, and ultrasonography findings were collected by using a case record form. Histopathological diagnosis were collected following surgery and correlated with demographic, clinical and ultrasonography findings.

Results: Out of 45 patients, 20 (44.4%) had benign and 25 (55.6%) had malignant ovarian tumours on histopathology and epithelial tumours presented in the majority of the cases (68.9%). The most frequent age group of presentation was 40-59 years in both benign (45%) and malignant (48%) groups. The predominant complaints of the patient were abdominal pain (73.3%) followed by abdominal lump (62%). Most patients (95.6%) presented with less than six months of symptoms, and postmenopausal status was the most frequent (52%)

among the malignant tumour group. On ultrasonography, most benign and malignant cases (51.1%) had a tumour size of more than 10 cm. The majority of the tumours (91.1%) were unilateral, and (66.7%) were cystic in consistency. A significantly higher proportion of benign tumours were cystic than malignant tumours (95% vs 44%, $p=0.001$).

Conclusion: The correct histopathological diagnosis of ovarian tumours is of prime importance, given their behavioural predictability, clinical correlation, and proper patient management.

Key words: Clinical; Histopathology; Ovary; Tumor.

Introduction

Ovarian cancer is the third most common gynecological cancer, with a total of 313,959 new cases of ovarian cancer recorded globally in 2020.^{1,2} It also has the highest mortality rate (4.2 per 100,000), with 207,252 new deaths globally. Ovarian cancer disease burden increased worldwide and the heaviest burden was distributed in South and East Asia and Western Europe.³ According to the latest World Health Organization data published in 2020, Ovary Cancer Deaths in Bangladesh reached 2,231 or 0.31% of total deaths. The age-adjusted death rate is 3.34 per 100,000 of the population from ovarian cancer in Bangladesh.⁴

Hence, there is an urgent need for discovering novel methods for screening and early diagnosis, prognosis and therapy. However, ovarian tumors are presenting a persistent, intriguing problem due to their inconsistent clinical presentation, difficulties in early diagnosis, and wide variations in histological architecture.⁵

The present study was focused to find out the correlation between clinical presentation and various histopathological findings of ovarian tumors in respect to our population. The study includes all cases of ovarian tumors admitted to gynecological ward in a tertiary care hospital in Bangladesh during a period of six months.

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Knowledge of the clinical characteristics, frequency and distribution of the types of ovarian tumours would aid clinicians in the management of patients with ovarian tumours. Comparative analysis of clinical presentation of benign and malignant ovarian tumours would help to enlist and identify symptoms that could lead to early diagnosis of ovarian carcinoma.

Materials and methods

A prospective observational study was conducted in the Department of Obstetrics and Gynecology, Chittagong Medical College Hospital, Chattogram, Bangladesh, between 1st January and 30th June 2021. The study protocol was approved by the ethical review committee of Chittagong Medical College (Memo No.CMC/PG/2020/668, Date: 24/12/2020). Informed consent was obtained from the participants.

During the study period, 45 patients with ovarian masses scheduled for surgery were included in this study. Pregnant patients with Adnexal Mass, patients with masses of non-gynaecological origin and patients with functional cysts of the ovary were excluded.

On admission, the patient's particulars, including details of presenting complaints with duration, age, parity, menstrual history and history of contraceptive use, were collected. Ultrasonography findings were noted in a structured case record form to evaluate the following criteria like multilocularity, bilaterality, consistency and size of tumors. Following surgery, histopathology reports were collected and noted. Data were processed and analyzed using Computer-based software SPSS-25 (Statistical Package for Social Science). All the variables were categorized and presented as frequency and percentages. The association of the histopathological type of the tumour and various clinical and ultrasonography features was conducted using a Chi-square test. p value <0.05 was considered as statistical significance.

Results

Out of 45 patients, 20 (44.4%) had benign and 25 (55.6%) had malignant ovarian tumours on histopathology. Surface epithelial tumours were the most typical tumours accounting for 31 cases (68.9%) followed by germ cell tumours (12 cases, 26.7%) and metastasis tumours (2 cases, 4.4%) (Table I).

Table I Histopathological type of the tumour

Variables	Frequency	Percentage (%)
Histopathological type		
Benign	20	44.4
Malignant	25	55.6
Histopathological classification		
Serous epithelial tumour	17	37.8
Mucinous epithelial tumour	13	28.9
Clear cell epithelial tumour	1	2.2
Germ cell tumour	12	26.7
Metastatic tumour	2	4.4

Table II shows that the most frequent age group of presentation was 40-59 years in both benign and malignant groups. Most of the patients (82.2%) were multiparous. Only 22.2% of the women gave a history of contraceptive use. 30% of the patients with benign lesions were postmenopausal, whereas 52% of the malignant lesions were postmenopausal. Duration of symptoms was <6 months for most patients (95.6%). None of the demographic and clinical characteristics had a statistically significant association with the histological type of the tumour (Table II).

Table II Age group, parity, OCP use, menopausal status, and duration of symptoms of the patients

Variable	Total (n=45)		Benig		Malignant		p value*
	n	%	n	%	n	%	
Age group							
19-39 years	17	37.8	8	40.0	9	36.0	0.963
40-59 years	21	46.7	9	45.0	12	48.0	
≥ 60 years	7	15.6	3	15.0	4	16.0	
Parity							
Nulliparous	6	13.3	4	20.0	2	8.0	0.113
Primipara	2	4.4	2	10.0	0	0.0	
Multipara	37	82.2	14	70.0	23	92.0	
OCP use							
Use	10	22.2	4	20.0	6	24.0	0.748
Not use	35	77.8	16	80.0	19	76.0	
Menopausal status							
Pre menopausal	27	60.0	14	70.0	13	52.0	0.221
Postmenopausal	18	40.0	6	30.0	12	48.0	
Symptoms duration							
<6 months	43	95.6	19	95.0	24	96.0	0.872
≥ 6 months	2	4.4	1	5.0	1	4.0	

OCP: Oral Contraceptive Pill. *Chi-square test.

Table III shows that the most common presenting symptoms were abdominal pain (73.3%) followed by abdominal lump (62%). Abdominal pain and lumps were more frequently seen in malignant than benign cases. Only one patient in the benign

category reported weight loss, whereas four patients with malignant had weight loss. However, none of the differences failed to reach statistical significance.

Table III Clinical presentations of ovarian tumors

Symptoms	Total (n=45) n(%)	Benign (n=25) n(%)	Malignant (n=20) n(%)	p value*
Abdominal pain	33(73.3)	13(52.0)	20(80.0)	0.258
Abdominal lump	28(62.2)	10(40.0)	18(72.0)	0.130
Abdominal bloating	3(6.7)	2(8.0)	1(4.0)	0.423
Generalized fatigue	3(6.7)	1(4.0)	2(8.0)	0.689
Weight loss	5(11.1)	1(4.0)	4(16.0)	0.243
Feeling of full	6(13.3)	3(12.0)	3(12.0)	0.769
Constipation *	6(13.3)	2(8.0)	4(16.0)	0.556
Urinary symptoms	1(2.2)	0(0.0)	1(4.0)	0.367

*Chi-square test.

Table IV shows that, based on ultrasound findings, most cases were unilocular (91.1%), with a cystic (66.7%) appearance. Malignant tumours were only 4% under 5 cm in size. In most benign and malignant cases, 51.1% were more than 10 cm in size. A significantly higher proportion of benign tumours were cystic than malignant tumours (95% vs 44%, $p=0.001$).

Table IV Preoperative ultrasound findings of the patients with suspected ovarian tumour

Variable	Benign		Malignant		p value
	n	%	n	%	
Tumour size					
<5cm	4	8.9	3	15.0	0.418
5-10cm	18	40.0	7	35.0	
>10cm	23	51.1	10	50.0	
Tumour site					
Unilateral	41	91.1	19	95.0	0.412
Bilateral	4	8.9	1	5.0	
Tumour consistency					
Cystic	30	66.7	19	95.0	0.001
Solid	5	11.1	0	0.0	
Mixed	10	22.2	1	5.0	
Tumour locularity					
Unilocular	41	91.1	19	95.0	0.412
Multilocular	4	8.9	1	5.0	

*Chi-square test.

Discussion

The present study demonstrated that diagnosis of ovarian tumours can be difficult due to a variety of pathologic conditions that can affect the ovaries and present with similar clinical and radiological manifestations. In the present study, 44.4% of

cases were benign, and 55.6% were malignant. In the study of Begum et al. histopathological diagnosis showed 78.3% and 21.7% of the cases as benign and malignant lesions, respectively.⁶ In another series from India, 94 (68.12%) cases were benign, 13 (8.7%) were borderline and 31 (22.5%) were malignant.⁷ Relatively, a higher number of malignant cases in the present studies is likely due to selection bias and a small number of patients. Overall the pattern of histological types of ovarian tumors is almost the same in our study as in all the other studies done worldwide reporting epithelial tumors being the commonest one.

Ovarian tumours may be encountered in females of any age, however, the age range is between 19-72 years in the present study. A maximum number of patients (21,46.7%) were in the 40-59 years group. The present study results agreed with the study of Hasan and his colleague, where among 100 patients with an ovarian tumour, the highest number of patients (40) with ovarian tumours was from the 41 to 50 years age group.⁸ Advance age was associated with malignant ovarian tumours in the previous study.⁸ In contrast, age distribution was similar between benign and malignant tumours in the present study, possibly due to the small sample size. High parity is a protective factor against the growth of ovarian tumours.^{9,10} The present study showed that an increased parity in our country was not protective against ovarian malignancy, which agreed with other studies conducted in Pakistan.^{11,12} Most patients (82.2%) were multiparous in the present study, and 92% were multiparous who had malignant tumours.

In the current study, the presenting complaints were varied, the remarkable ones being abdominal pain (65%), abdominal lump (50%), difficulty in eating or feeling of full (15%) abdominal bloating (10%) and weight loss (5%) cases in benign tumor group compared to abdominal pain (80%), abdominal lump (72%), weight loss (16%), constipation (16%), difficulty eating (12%) cases in malignant tumor group. Presenting symptoms were more or less similar to other studies.^{5,9} However, none of the symptoms could lead to differentiate malignant from benign tumour in the present study.

Ultrasound features of malignant ovarian tumours have been well described in the literature. Typically, they are described as large multilocular

cysts.¹³ In the present study, a significantly higher proportion of benign tumours were cystic than malignant tumours (95% vs 44%). Most cases were unilocular (91.1%), with a cystic (66.7%) appearance. Overall, the size of the tumours could have been more helpful in differentiating benign from malignant lesions. Malignant tumours were only 4% under 5 cm in size. In most benign and malignant cases, 51.11% were more than 10 cm in size. In the study of Pascual et al. despite statistical differences, the authors observed significant overlapping in ultrasound features among benign, borderline and invasive ovarian mucinous tumours, rendering a difficult, accurate preoperative discrimination among these lesions.¹⁴

Limitations

The sample size was relatively small in this study. Patients were collected from a single tertiary-level government hospital. So, observer bias could not be eliminated completely.

Conclusion

The present study and discussion showed that clinical features, presenting symptoms and ultrasonography findings did not vary significantly with the histology of the tumours.

Recommendation

Accurate discrimination between benign and malignant lesions is complicated based on clinical and ultrasonography features. So, a histopathological diagnosis combined with clinical findings would help deliver prompt and appropriate treatment to the patient. However, detailed multi-center-based studies should be conducted with adequate resource allocation over a more extended period involving a larger sample size to get more elaborated information. □

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Contribution of authors

SS-Conception, data collection, analysis, drafting & final approval.

SA-Critical revision & final approval.

AF-Interpretation of data, data analysis & final approval.

ANU-Data collection, analysis, manuscript writing & final approval.

SRR-Data collection, interpretation of data, manuscript writing & final approval.

SAN-Data collection, analysis, manuscript writing & final approval.

Disclosure

The authors declared no conflicts of interest.

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