

Research Article

Clinical and Histopathological Correlation of Ovarian Tumors in a Tertiary Hospital

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Abstract: Background: Ovarian tumors represent a significant health issue in women, with varying clinical presentations and histopathological types. Accurate diagnosis and management are crucial for improving outcomes. This study aimed to assess the clinical presentation, histopathological diagnosis and their correlation in ovarian tumor cases at a tertiary hospital in Bangladesh. **Methods:** This retrospective study was conducted on 50 ovarian tumor cases diagnosed between June 2014 and July 2015 at the Obstetrics and Gynecology Department of BSMMU, Dhaka. Clinical and histopathological data were reviewed and the correlation between clinical and histopathological diagnoses was analyzed. **Results:** The majority of patients were between 20-40 years old (76%) and 68% were premenopausal. Abdominal pain (62%) was the most common symptom. Benign tumors were the most frequent histopathological finding (70%), followed by malignant (24%) and borderline tumors (6%). The most common histopathological subtypes were serous cystadenoma (38%) and mucinous cystadenoma (20%). The clinical diagnosis showed a 94.3% concordance for benign tumors, 83.3% for malignant tumors and 100% for borderline tumors, with an overall concordance of 92%. **Conclusion:** The study highlights the high concordance between clinical and histopathological diagnoses of ovarian tumors, emphasizing the importance of histopathological evaluation in the accurate diagnosis and management of ovarian tumors. Early detection and timely intervention are crucial in improving patient outcomes.

Keywords: Ovarian tumors, Histopathology, Clinical diagnosis, Benign tumors, Malignant tumors.

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INTRODUCTION

Ovarian tumors represent a significant gynecological concern due to their wide spectrum of clinical presentations, ranging from benign conditions to highly malignant diseases.¹ These tumors are the third most common neoplasm among women worldwide, following cervical and endometrial cancers and are often associated with high morbidity and mortality rates, particularly in developing countries like Bangladesh.² The clinical challenge in ovarian tumors lies in their often insidious onset and non-specific symptoms, such as abdominal pain, bloating, or menstrual irregularities, which frequently lead to delayed diagnosis.³ This underscores the importance of robust diagnostic approaches, including clinical assessment, imaging and histopathological evaluation.^{4,5}

Histopathological examination remains the gold standard for the definitive diagnosis of ovarian tumors, providing critical insights into their classification as benign, borderline, or malignant.^{6,7} Benign tumors, such as serous and mucinous cystadenomas, constitute the majority of cases, whereas malignant tumors, including

epithelial ovarian cancer, are associated with poor prognosis due to their aggressive nature and late-stage detection.⁴ Borderline ovarian tumors, which exhibit features between benign and malignant lesions, add further complexity to diagnosis and management.⁸ Accurate classification has profound implications for patient management, including surgical decisions, follow-up protocols and prognostic counseling.⁹

In Bangladesh, where access to advanced diagnostic modalities is often limited, clinical evaluation and imaging studies play a vital role in the initial assessment of ovarian masses.¹⁰ However, these methods have inherent limitations and discrepancies between clinical and histopathological diagnoses are not uncommon.^{11,12} Identifying the degree of concordance between clinical and histopathological findings is crucial for improving diagnostic accuracy and optimizing patient outcomes.⁵ Moreover, understanding the patterns of ovarian tumors in the Bangladeshi population can help guide public health strategies and resource allocation in this resource-constrained setting.¹³

This study aimed to evaluate the clinical and histopathological correlation of ovarian tumors in a tertiary care hospital in Bangladesh, focusing on the accuracy of clinical diagnosis in predicting histopathological outcomes. By analyzing a cohort of 50 patients, the study seeks to identify factors contributing to diagnostic discrepancies and provide insights into the prevalence and characteristics of ovarian tumors in the local population. The findings are expected to enhance understanding of ovarian tumor diagnostics and support the development of more effective diagnostic and therapeutic strategies tailored to the needs of Bangladeshi patients.

METHODOLOGY AND MATERIALS

This retrospective observational study was conducted in the Obstetrics and Gynecology Department of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, over one year, from June 2014 to July 2015. A total of 50 cases of ovarian tumors diagnosed and managed during this period were included in the study. Patients were selected based on the availability of clinical, imaging and histopathological data. Inclusion criteria encompassed all female patients with histopathologically confirmed ovarian tumors, while cases

with incomplete medical records or non-ovarian pelvic masses were excluded.

Data were collected from patient records, including demographic details such as age and menopausal status, clinical presentations like abdominal pain, menstrual irregularities and imaging findings suggestive of ovarian tumors. The histopathological findings were retrieved from pathology department records and included tumor type, subtype and whether the tumor was benign, borderline, or malignant. Clinical diagnoses were compared with histopathological outcomes to assess the correlation.

The data were analyzed using descriptive and inferential statistics. Frequencies and percentages were calculated for categorical variables, while mean and standard deviation were used for continuous variables. Concordance rates between clinical and histopathological diagnoses were calculated for different tumor categories. Statistical analyses were performed using SPSS for Windows software, with the Chi-square test applied to assess the significance of correlations.

RESULTS

Table 1: Demographic Characteristics of the Study Population

Characteristics	Frequency (n=50)	Percentage (%)
Age Group (years)		
<20	7	14.0
20-40	38	76.0
>40	5	10.0
Menopausal Status		
Premenopausal	34	68.0
Postmenopausal	16	32.0

Table 1 presents the demographic profile of the study population, including age group and menopausal status. The majority of participants (76%) were in the 20-40 years age group, followed by those under 20 years

(14%) and over 40 years (10%). In terms of menopausal status, 68% of patients were premenopausal, while 32% were postmenopausal.

Table 2: Clinical Presentation of Patients

Symptoms	Frequency (n=50)	Percentage (%)
Abdominal Pain	31	62.0
Abdominal Distension	15	30.0
Menstrual Irregularities	8	16.0
Incidentally Detected (e.g., Imaging)	11	22.0
Others	5	10.0

Table 2 summarizes the clinical symptoms reported by the study participants. The most common symptom was abdominal pain, experienced by 62% of patients, followed by abdominal distension (30%) and

menstrual irregularities (16%). Additionally, 22% of cases were incidentally detected through imaging and 10% of patients reported other symptoms.

Table 3: Distribution of Ovarian Tumors Based on Histopathological Diagnosis

Tumor Type	Frequency (n=50)	Percentage (%)
Benign Tumors	35	70.0
Borderline Tumors	3	6.0
Malignant Tumors	12	24.0
Total	50	100

Table 3 shows the distribution of ovarian tumors classified by histopathological diagnosis. Among the 50

cases, 70% were benign tumors, 6% were borderline tumors and 24% were malignant tumors.

Table 4: Subtypes of Ovarian Tumors (Histopathology)

Histopathological Subtype	Frequency (n=50)	Percentage (%)
Serous Cystadenoma	19	38.0
Mucinous Cystadenoma	10	20.0
Endometriotic Cyst	5	10.0
Teratoma	8	16.0
Serous Cystadenocarcinoma	5	10.0
Others	2	4.0

Table 4 details the histopathological subtypes of ovarian tumors in the study. The most common subtype was serous cystadenoma, accounting for 38% of cases, followed by mucinous cystadenoma (20%) and teratoma

(16%). Endometriotic cysts and serous cystadenocarcinoma each comprised 10% of the tumors, while 4% of cases were categorized as other subtypes.

Table 5: Clinical vs. Histopathological Correlation

Clinical Diagnosis	Histopathological Findings	Concordant Cases	Discordant Cases	Percentage Concordance
Benign Tumors	Confirmed as Benign	33	2	94.3
Malignant Tumors	Confirmed as Malignant	10	2	83.3
Borderline Tumors	Confirmed as Borderline	3	0	100
Total		46	4	92

Table 5 compares the clinical diagnosis with histopathological findings. Of the 46 concordant cases, 94.3% of benign tumors and 83.3% of malignant tumors were accurately confirmed by histopathology. All three

borderline tumors were confirmed histologically. Overall, the clinical and histopathological diagnoses showed a 92% concordance rate.

Table 6: Overall Concordance Rates

Diagnosis	Total Cases	Concordant Cases	Percentage Concordance
Benign Tumors	35	33	94.3
Malignant Tumors	12	10	83.3
Borderline Tumors	3	3	100
Overall Concordance	50	46	92

Table 6 presents the overall concordance rates between clinical diagnosis and histopathological findings. Among the 50 cases, 94.3% of benign tumors, 83.3% of malignant tumors and 100% of borderline tumors were correctly diagnosed. The total concordance rate was 92%.

DISCUSSION

This study focused on the clinical and histopathological correlation of ovarian tumors in a tertiary hospital in Dhaka, Bangladesh. The findings highlight significant patterns in the presentation and classification of ovarian tumors, as well as the diagnostic accuracy between clinical and histopathological assessments. Our results are consistent with similar studies conducted in other parts of the world, shedding light on regional patterns and trends in ovarian tumor presentation and management.

The study revealed that the majority of the patients (76%) were in the reproductive age group (20-40 years), which is consistent with findings from other studies. For instance, in a study conducted by Mohyuddin *et al.* a similar age distribution was noted, with most ovarian tumor cases found in the 20-40-year age group,

emphasizing the importance of early detection and management of these tumors in younger womenally, premenopausal women (68%) were more commonly affected, which is consistent with the study by Junejo *et al.*, who also found that the majority of ovarian tumors were diagnosed in premenopausal women.^{14,15}

Abdominal Pain (62%) was the most common presenting symptom, followed by abdominal distension (30%), which is in line with studies by Iyoke *et al.* and Haroon *et al.*, who identified abdominal pain as the primary symptom in their cohorts of patients with ovarian tumors.^{16,17} The relatively hs diagnosed incidentally through imaging (22%) also aligns with previous findings, such as those by Sabageh *et al.*, highlighting the importance of imaging techniques in detecting ovarian tumors that may not present with obvious symptoms.¹⁸

Histopathologically, benign tumors ce majority of the cases (70%), similar to findings reported in studies by Wasim *et al.* and Sharma *et al.*, where benign ovarian tumors were more prevalent than malignant types.^{19,20} Among the benign tumors, serous cystadenoma

waopathological subtype, constituting 38% of the cases. This is consistent with the findings of Yogambal *et al.*, who also reported serous cystadenomas as the predominant subtype in their study from South India.²¹ Mucinous cystadenoma (20%) and teratoma (16%) were the next most cases, further corroborating patterns observed in other studies, such as those by Menon *et al.* and Das *et al.*^{22,23}

In terms of malignancy, our study found 24% of ovarian tumors to be malignant in some other regional studies, such as that by Iyoke *et al.*, where the incidence of malignant ovarian tumors was reported to be higher.¹⁶ Among malignant tumors, serous cystadenocarcinoma was the most frequent subtype, aligning with that of Rafiq *et al.*, who noted the dominance of serous carcinoma among malignant ovarian tumors.²⁴ The lower percentage of malignant tumors in our cohort could be due to regional differences in healthcare access and diagnostic practices.

The clinical diagnosis correlated well with histopathological findings, demonstrating a high level of diagnostic accuracy. A total concordance of 92% was observed, with benign tumors showing the highest concordance rate of 94.3%, which is similar to the 94% concordance rate reported by Das *et al.*, in their study on cytohistological correlation.²³ The accuracy of diagnosing malignant tumors was slightly lower (83.3%), which is consistent with findings by Prameela *et al.*, who also found a moderate discordance in malignant cases due to challenges in clinical differentiation between benign and malignant lesions.²⁵

Limitations of the study

This study has several limitations. First, the sample size of 50 cases may limit the generalizability of the findings. Additionally, being a single-center study, the results may not reflect the broader population. The retrospective design also relies on existing medical records, which can sometimes be incomplete or inconsistent. Lastly, while histopathological examination remains the gold standard for diagnosis, inter-observer variability in interpretation could influence the results.

CONCLUSION

In conclusion, this study provides valuable insights into the clinical and histopathological correlation of ovarian tumors in a tertiary hospital. Our findings demonstrate a high concordance rate between clinical diagnosis and histopathological results, with benign tumors being the most common. The results underscore the importance of early diagnosis and accurate histopathological evaluation in the management of ovarian tumors. Future studies with larger sample sizes and multi-center designs would further validate these findings and improve clinical management strategies.

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Conflicts of interest

There are no conflicts of interest.

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