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Clinical Presentation and Laparotomy Findings of Patients with Malignant Adnexal Mass among Pre-and Postmenopausal Women Attending in Bangabandhu Sheikh Mujib Medical University

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Abstract

Background: Adnexal malignancies, originating from structures such as the ovaries and fallopian tubes, are a significant health concern, often affecting elderly females. This study aimed to investigate the clinical presentations and laparoscopic findings in patients with malignant adnexal tumors.

Materials and methods: An observational cross-sectional study was conducted at the Department of Obstetrics and Gynaecology, Bangabandhu Sheikh Mujib Medical University, Dhaka. Bangladesh, from February 2022 to July 2022. A total of 35 patients meeting the inclusion criteria were enrolled. Epidemiological, demographic and clinical data were collected, including laboratory findings and laparotomy results. Data were analyzed using SPSS-25.

Results: The mean age of participants was 45.11±13.63 years, with 60% over 50. Most patients were multiparous (77.1%) and postmenopausal. Abdominal pain was the most common presenting symptom (80%), followed by anorexia (51.4%) and abdominal distension (40.4%). A significant percentage of patients were underweight (42.9%), anemic (60%), and had edema (8.6%). Laboratory findings revealed elevated CA-125 levels (88.5%) and other tumor markers. Histopathological analysis showed papillary serous cystadenocarcinoma (52.9%) and mucinous cystadenocarcinoma (17.6%) as the most common types.

Conclusion: This study provides clinical insights into the presentation of malignant adnexal masses, highlighting common histopathological types. While limited in size, this study contributes valuable information on the clinical profiles of adnexal malignancies.

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Introduction

Cancer, a leading cause of global mortality, continues to pose a significant health challenge.[1] Adnexal malignancy, originating from structures such as the ovaries and fallopian tubes, represents a subset of cancers that have garnered attention due to its implications for women's health. Among these, ovarian cancer stands out as a significant gynecologic malignancy, ranking third in frequency after cervical and uterine cancer.[2] Ovarian cancer is characterized by the development of abnormal cells with the potential to invade other parts of the body, often progressing silently until it reaches an advanced stage.

While the incidence of ovarian cancer varies among different demographic groups, it is generally considered a disease of high importance, with a global disease burden that continues to grow.[3] In 2019, there were 294,420 new cases and 198,410 deaths attributed to ovarian cancer worldwide, highlighting its substantial impact on public health.[4]The risk of ovarian cancer is influenced by factors such as genetics, family history, obesity and the use of hormone therapy.[5] Early detection remains challenging, contributing to the disease's high mortality rate.[6,7]

One common clinical dilemma healthcare providers face is the differentiation between benign and malignant adnexal masses, as ovarian malignancies are the most prevalent among adnexal masses.[8] Primary ovarian lesions, including epithelial ovarian carcinoma, germ-cell tumors, sex-cord stromal tumors, and others, constitute a significant portion of malignant adnexal masses.[9] However, secondary lesions originating from cancers elsewhere in the body can also affect the ovaries.[10] Therefore, distinguishing between these entities is crucial for appropriate clinical management.

The "Silent Killer" moniker often associated with ovarian cancer reflects the challenge of diagnosing the disease at an early stage when treatment outcomes are more favorable.[11] Recognizing symptoms such as persistent abdominal bloating, changes in eating habits, and abdominal pressure can facilitate early diagnosis and improve survival rates.[12] Additionally, distinguishing ovarian cancer from common conditions with similar symptoms poses a significant clinical challenge.[13]

Routine screening for ovarian cancer is not universally recommended, and specific screening criteria typically involve high-risk populations with genetic predispositions or strong family histories. The diagnosis of ovarian cancer is reliant on a combination of clinical history, physical examination, imaging techniques such as ultrasound, and tumor markers, but definitive confirmation often requires tissue biopsy. Early diagnosis is critical for better treatment outcomes, as advanced-stage ovarian cancer is associated with a poorer prognosis.[14]

This study aims to describe the clinical presentations of malignant adnexal tumour patients and their laparoscopic findings.

Materials and methods

This observational cross sectional study was conducted at the Department of Obstetrics and Gynecology, Bangabandhu Sheikh Mujib Medical University, from February to July 2022. It focused on patients with malignant ovarian tumors, utilizing purposive consecutive sampling for participant selection. Inclusion criteria involved admission status, adnexal mass presence and planned surgical treatment, while failure to get consent, inoperability and non-malignant masses led to exclusion.

Data collection involved gathering information from patients admitted to Bangabandhu Sheikh Mujib Medical University with malignant ovarian tumors. A structured case record form was used to systematically record patient data, including demographic, clinical and laboratory information. Quantitative data, such as age and vital signs, were analyzed using mean and standard deviation. Qualitative data, such as symptoms and tumor characteristics, were presented as frequency distributions and percentages. The data collection followed ethical guidelines, with informed written consent obtained from patients and ensured data confidentiality.

Data analysis involved systematic recording of information in a pre-designed case record form. Quantitative data were summarized using mean and standard deviation, while qualitative data were presented as frequency distributions and percentages. Statistical analysis was performed using SPSS-25 software, allowing for a comprehensive examination of the collected data.

Ethical Consideration was approved by BCPS prior starting study.

Results

A total of 35 patients with malignant ovarian tumors were included in the study. The mean age of the participants was 45.11 ± 13.63 years. Most of the patients (60%) were over 50 years of age, while 11.4% of patients were below 20 years. The sociodemographic characteristics of the study population are summarized in Table I.

Table I Sociodemographic Characteristics of Study Participants

Characteristic	Frequency (n)	Percentage (%)
Age (Years)		
- Below 20	4	11.4
- 20-40	7	19.9
- 40-50	9	25.7
- Above 50	15	42.9
Residence		
- Rural	22	62.9
- Urban	13	37.1
Parity		
- Nulliparous	8	22.9
- Multiparous	27	77.1
Menopausal Status		
- Pre-menopausal	14	40.0
- Post-menopausal	21	60.0
Family History of Cancer		
- Yes	1	2.9
- No	34	97.1

The most common presenting symptom among the study participants was abdominal pain (80%), followed by anorexia (51.4%), abdominal distension (40.4%), weight loss (37.1%), and the presence of a lump in the abdomen (31.4%). Other less frequent symptoms included menstrual abnormalities (14.3%), weakness (5.7%), and urinary symptoms (2.9%). The clinical presentation of the study subjects is summarized in Table II.

Table II Clinical Presentation of Study Participants

Clinical Presentation	Frequency (n)	Percentage (%)
Abdominal Pain	28	80.0
Anorexia	18	51.4
Abdominal Distension	14	40.0
Weight Loss	13	37.1
Lump in Abdomen	11	31.4
Vomiting	7	20.0
Menstrual Abnormality	5	14.3
Weakness	2	5.7
Urinary Symptoms	1	2.9

On physical examination, localized abdominal swelling was observed in more than half (51.4%) of the patients and abdominal lumps were palpable in 94.2% of cases. The characteristics of the abdominal lumps varied, with 57.1% having a smooth surface, 45.7% having ill-defined margins and 37.1% being firm in consistency. Most lumps were mobile (57.1%) and non-tender (77.1%). Per-vaginal examination revealed normal findings in 82.9% of cases, while uterine enlargement was noted in 17.1% of cases. Rectal mucosa was free in 85.7% of cases. The clinical examination findings are presented in Table III.

Table III Clinical Examination Findings

Clinical Examination	Frequency (n)	Percentage (%)
Abdominal Distension	18	51.4
Abdominal Lump	33	94.2
- Lump Surface		
- Smooth	20	57.1
- Irregular	13	37.1
- Hard	6	17.1
- Lump Consistency		
- Firm	13	37.1
- Cystic	13	37.1
- Tender	8	22.9
- Lump Mobility		
- Mobile	20	57.1
- Fixed	13	37.1
- Lump Tenderness		
- Tender	8	22.9
- Non-Tender	27	77.1
Per-vaginal Examination		
- Normal	29	82.9
- Uterine Enlargement	6	17.1
- Uterine Mobility		
- Restricted	7	20.0
- Normal	28	80.0
Rectal Mucosa		
- Free	30	85.7
- Involved	5	14.3

Additionally, laboratory findings revealed that 82.9% of the patients had low hemoglobin levels, 100% had elevated ESR, 88.5% had high CA-125 levels, 41.95% had elevated CA 19-9 levels, 97.41% had elevated LDH levels and 25% had elevated CEA levels. These laboratory findings are summarized in Table IV.

Table IV Laboratory Findings of Study Participants

Laboratory Findings	Frequency (n)	Percentage (%)
Hemoglobin (Low)	24	82.9
ESR (High)	29	100.0
CA-125 (High)	23	88.5
CA 19-9 (High)	11	41.95
LDH (High)	28	97.41
CEA (High)	7	25.0

Imaging studies, including ultrasound, showed that 65.7% of the cases had unilateral tumors, while 34.3% had bilateral tumors. The size of the tumors varied, with 30% of cases having tumors larger than 100 mm. The majority of tumors had septations (65.7%) and a solid-cystic consistency (60%) and were multiloculated (48.6%). Ascites were present in 57.1% of cases and increased blood flow was observed on imaging in 65.7%. These radiological findings are presented in Table V.

Table V Radiological Findings of Study Participants

Radiological Findings	Frequency (n)	Percentage (%)
Tumor Laterality		
- Unilateral	23	65.7
- Bilateral	12	34.3
Tumor Size		
- ≤100 mm	7	20.0
- > 100 mm	10	30.0
Tumor Characteristics		
- Septations	23	65.7
- Solid-Cystic	21	60.0
- Multiloculated	17	48.6
Ascites	20	57.1
Blood Flow (Increased)	23	65.7

Histopathologically, most cases were papillary serous cystadeno carcinoma (52.9%), followed by mucinous cystadeno carcinoma (17.6%). Other less common types included yolk cell tumor (8.8%), granulosa cell tumor (5.9%), dysgerminoma (5.9%) and adenocarcinoma of the ovary (5.9%). The distribution of histopathological types is summarized in Table VI.

Table VI Histopathological Types of Ovarian Malignancies

Histopathological Types	Frequency (n)	Percentage (%)
Papillary Serous Cystadenocarcinoma	18	52.9
Mucinous Cystadenocarcinoma	6	17.6
Yolk Cell Tumor	3	8.8
Granulosa Cell Tumor	2	5.9
Dysgerminoma	2	5.9
Adenocarcinoma of Ovary	2	5.9

Discussion

The study found that more than 60% of the patients were over 50, 11.4% were below 20, and only 19.9% were in the reproductive age group of 20-40. The mean age of the participants was 45.11±13.63 years. This age distribution aligns with previous research, indicating that female reproductive age is protective against ovarian malignancy. However, the study also observed a trend of ovarian cancer occurring in younger females, possibly due to changing lifestyles and risk factors. Most patients in this study came from rural areas (62.9%), reflecting the sociodemographic distribution of the country's population.[15,16] There was no significant correlation between urbanization and the development of ovarian malignancy.

Nulliparity has been consistently associated with an increased risk of ovarian cancer. However, in this study, 74.4% of the patients were multiparous, contrary to Western findings, where nulliparous and unmarried women are more prone to ovarian cancer. The prolonged reproductive life of Bangladeshi women, who typically marry early and have multiple pregnancies, could explain this difference. The mean age of menarche in the study was 13.6±0.94 years, and 42.8% of the patients were premenopausal, while 57% were postmenopausal, with an average age of menopause at 48.3 years.[17] An early onset of menopause has been negatively correlated with ovarian cancer risk, with hormonal changes after menopause potentially increasing the risk.

One patient had a documented family history of ovarian cancer. Family history is a significant risk factor for ovarian cancer, with genetic factors accounting for 5.0 to 10% of cases. Women with a family history, especially those with first-degree relatives affected, have an increased risk of developing ovarian cancer. The most common presenting symptom in this study was abdominal pain (80%), followed by anorexia (51%), weight loss (37.1%), and abdominal lump (31.4%).[18] These findings differ from previous studies where abdominal pain and abdominal mass or distension were more common. However, the presence of various symptoms, including anorexia, weight loss, vomiting, and menstrual abnormalities, aligns with findings from other studies on ovarian malignancies.

Approximately 42.9% of the patients were underweight (BMI< 18 kg/m2), which can be attributed to rural socioeconomic conditions and malnutrition.[19] Anemia was observed in 60% of the patients, consistent with previous studies linking anemia to ovarian cancer, likely due to chronic inflammation and oxidative stress. On clinical examination, abdominal masses were palpable in 94.2% of cases, with varying characteristics such as surface smoothness, consistency, mobility and tenderness. Most cases had ascites (31.4%), which can be a predictor of malignancy but is not definitive. Vaginal probe ultrasound was not used in this study but is recommended for a more accurate diagnosis of ovarian cancer.

Trans-abdominal ultrasound showed that 65.7% of the tumors were unilateral, and 60% were solid-cystic. Tumor size exceeded 100 cm in 85% of cases.[20] These findings align with previous studies that found similar tumor laterality and size distribution. CA-125 tumor marker was elevated in 80% of the subjects, but 20% had normallevels. CA-125 alone is insufficient for early detection, as it can produce false positives and negatives. Ascites were present in 57.1% of cases, and laparotomy revealed that 50% had unilateral ovarian involvement. Histopathologically, papillary serous cystadenocarcinoma was the most common type (52.9%), followed by mucinous cystadeno- carcinoma (17.6%).[21] These findings are consistent with studies reporting similar distributions of ovarian tumor types.

Limitation

It was a single centre study with small sample size.

Conclusion

Our study observed clinical features of malignancy in elderly patients with risk factors and investigated them for malignancy using non-invasive markers and laparotomy. Non-invasive

markers provided valuable clues for malignancy. Nulliparity and prolonged postmenopausal periods were identified as risk factors for developing malignancy. Clinical findings alone were insufficient for a definitive diagnosis, highlighting the importance of additional diagnostic tools such as ultrasonography, particularly in resource-limited settings.

Recommendation

- Include open-ended questions in future studies to let women describe their symptoms in their own words and track symptom changes over time for early detection.
- Conduct a large-scale cohort study to better understand the prevalence and progression of ovarian cancer symptoms.
- Explore advanced imaging and biomarker technologies for early detection and consider screening programs for high-risk populations to improve outcomes.

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Contribution of authors

ST: Design, conception, acquisition of data, data analysis, drafting & final approval.
RAMEU: Conception, data analysis, critical revision & final approval.
URT: Data analysis, drafting & final approval.
RKK: Design, critical revision & final approval.

Disclosure

All the authors declared no competing interest.

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