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Original Article

Clinical and Histopathological Study on Malignant Ovarian Tumour- A Descriptive Type of Cross-Sectional Study

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ABSTRACT

Introduction: *The clinical presentations of malignant ovarian tumours are not always specific. Therefore, most of the patient of malignant ovarian tumour seeks medical attention at the late stage of disease when no effective treatment could be given. Therefore, this study was conducted to observe clinical and histopathological findings of malignant ovarian tumour.* ***Methods & Materials****: Clinical features and peroperative findings of 70 patients of malignant ovarian tumour from DMCH who underwent operative treatment were included as sample. GIT, constitutional, gynecologic symptoms, symptoms of mass effect, mass in abdomen and pain studied were evaluated. In addition, peroperative finding evaluated and staging done. Subsequently the findings were correlated with histopathological diagnosis of the tumour. Results were expressed in percentage.* ***Results:*** *The age of the patients ranged from 14-75 years with a mean age 41.23 years. Eighty-two percent patients were married. Of them, 93.5 are parous. Menopausal women were most frequent constituting 56.0% of total. Constitutional and symptoms of mass effects were common in malignant ovarian tumours 54% of patients presented within six months of onset of symptoms. However, duration did not affect the histological type of ovarian tumour. Restricted mobility with solid in consistency (44%) was common on malignant tumours whereas partly solid and partly cystic consistency only in (38%) of mass found in malignant ovarian tumours. Bilateral distribution was more in malignant tumours. Haemorrhagic peritoneal fluid was present only in (22%) malignant tumours.* ***Conclusion****: From the above discussion we see that most of the patient of this study population are illiterate, from poor socio-economic condition. Flatulence and dyspepsia in postmenopausal women should be concern with and her per abdominal, pelvic examination, together with transvaginal USG and CA-125 must be done to exclude malignant ovarian tumour.*

Keywords: *Histopathological, Malignant, Ovarian Tumour.*

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INTRODUCTION

Ovarian cancer is the most lethal gynecologic malignancy [1, 2, 3]. The high mortality rate due to ovarian cancer is attributed to the lack of an effective early detection method. Because of the non specificity of symptoms at early stage, most of the ovarian cancer cases are detected at late stages [2, 4]. Despite considerable efforts directed at early detection, no cost-effective screening tests have been developed.4 New chemotherapeutic agents have significantly improved the five-year survival rate, the overall mortality of ovarian cancer has remained unchanged [5,6]. Although presentation is often vague and non specific, the symptoms are definitely present. It is important to recognize the symptoms, carry out a bimanual examination and appropriate investigations in post menopausal women in the early period to diagnose the disease at an early stage [3]. Ovarian malignancy is a serious disease, affecting women of all ages, more so above 50 years [3, 6]. However, malignant germ cell tumors are almost exclusively diagnosed in young females. These tumors are now curable, mainly as a result of great advances in chemotherapy in the past two decades [6]. Ovarian tumours are one of the major health problems confronting the general practitioners in general and gynaecologists in particular. Ovarian tumours may either be asymptomatic, found on the routine ultrasound examination or symptoms may be vague till the patient has an acute emergency like torsion or rupture of a benign cyst. The worst is late presentation of a malignant ovarian tumour. There is marked variation in the presentation of the tumour as well as in histological types [7]. Diverse histopathologies are common in ovarian tumours reflecting the different cell origins of the tumour. Asian countries and Japan have rates of 2- 6.5 new cases per 100,000 women per year. Ovarian carcinoma represents the sixth most common female cancer and the fourth leading cause of death due to cancers in women [7]. The development of improved strategies for the early detection of ovarian carcinoma depends on a

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better understanding of its pathogenesis-the morphological and molecular events in the development of ovarian cancer. Despite recent studies aimed at elucidating the molecular mechanisms of ovarian cancer, its pathogenesis are poorly understood [8-10]. According to the Federation of Gynecology and Obstetrics (FIGO) and the World Health Organization (WHO) classifications: serous, mucinous, endometrioid clear cell, and transitional. The different types of ovarian cancers are not only histologically distinct but may exhibit different clinical behavior, tumorigenesis, and probably gene expression pattern [11]. About two thirds of the patients with epithelial ovarian cancer have a poor prognosis [12, 13]. A large number of clinicopathological variables, such as clinical stage, histological subtype and grade, volume of residual tumor after surgical resection, presence or absence of ascites, and the patient's age reflect the aggressiveness of ovarian tumors and their consequent clinical outcome [14]. Approximately 5-30% of the ovarian cancers are metastatic malignancies. The prevalence of metastatic ovarian tumors varies with the incidence rates and spread patterns of primary malignancies. The differential diagnosis of metastatic ovarian cancer can be problematic, so multiple diagnostic approaches are necessary. The extent of cytoreductive surgery for this type of tumor must be decided on a case-by-case basis [15-18].

METHODS & MATERIALS

Study design: It was a descriptive type of cross-sectional study.

Study period: This study was conducted from a period of October 2010 to March 2011 for duration of 6 months.

Place of study: This present study was conducted in the Department of Obstetrics and Gynecology, in Dhaka Medical College Hospital, Dhaka, Bangladesh.

Study population: Women diagnosed as case malignant ovarian tumour clinically and with histopathological confirmation attending in the Department of Obstetrics and Gynecology in DMCH, Dhaka were the study group population.

Inclusion criteria:

1. Women diagnosed as case malignant ovarian tumour
2. Patients, who gave consent and willing to comply with the study procedure, were included.

Exclusion criteria:

1. Patients who will refuse to participate in this study will be excluded from this study

Sample size: The sample size of this study will be 50 in number.

Study procedure: On admission patient's particulars, detail presenting complaints with duration, age, marital status, parity, socioeconomic status, menstrual, obstetrical and family history of ovarian tumours and history of contraceptive uses were collected. Patients were examined for important general signs such as anaemia, oedema etc. A detail per abdominal and per vaginal examination was carried out. Per abdominal examination included size, consistency, tenderness, surface, margin and mobility of tumour were evaluated. Bimanual per vaginal examination included size and fixation of mass with the uterus. Mobility and consistency of cervix and whether fornices are full or free. Routine blood count and other routine investigations of operative fitness and diagnosis such as ultrasonogrphy were carried out in all patients. In all patients laparotomy was performed as part of diagnosis as well as treatment. Laparotomy findings such as involvement of ovary whether unilateral or bilateral, colour. Histopathological diagnosis of ovarian tumour was considered as gold standard and according to histopathological findings tumours were divided in benign and malignant and variants of tumour are noted. Clinical features, preoperative findings of these variants were evaluated. The clinical features were evaluated according to the study by Attanucci et al. which consist of gastrointestinal, constitutional, gynaecological symptoms, mass effects and pain. Gastrointestinal symptoms were dyspepsia, flatulence and eructation. Constitutional symptoms were fatigue, fever, weight loss and gain. Gynaecologic symptoms were irregular vaginal bleeding, vaginal discharge, dyspareunia, change in menstrual cycle and post coital bleeding. Symptoms of mass effects were urinary frequency, constipation, palpable mass and pelvic pressure. The clinical features and preoperative findings of the tumours were correlated with histopathological diagnosis (malignant). All the data were collected in a data collection form.

Statistical analysis: Data will be analyzed using the Statistical Package for the Social Sciences (version 13.0 for Windows; SPSS Inc, Chicago, IL). Categorical data will be presented as frequency and distribution and quantitative data by mean and standard deviation.

RESULTS

In our study 3790 cases of 240(6.3%) of total patients admitted with Gynaecological problem into DMCH was suffering from ovarian pathology during this study period. Among this 71.7% were benign and 28.3% were clinically malignant ovarian tumour and 20.83% were histopathologically malignant.

Table – I: Demographic characteristics of the study patients (*n*= 50)

Age (in years)	Frequency	Percentage
< 18 years	11	22.0
18-34 years	06	12.0
35-45 years	10	20.0
> 45 – 65 years	23	46.0
Marital status		
Unmarried	09	18.0
Married	41	82.0
Parity		
Nullipara	14	34.1
Multipara	15	36.6
Grand multipara	12	29.3
Status		
Poor	30	60.0
Middle Class	18	36.0
Affluent	02	04.0
Menstrual cycle		
Normal	07	14.0
Irregular cycle	15	30.0
Menopause	28	56.0

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Table I shows the age distribution of the patients. Highest number of the patients were in the age group of 45 to 65 years (46.0%) followed by less than 18 years (22.0%). Other age group of the patients 18 to 34 and 35 to 45 were 12.0% and 20.0% respectively. Out of 50 patients 41(82.0%) patients are married women and 9 (18.0%) unmarried women developed ovarian tumours. Out of 41 married 82% women 12 (29.30%) were grand multiparous, 15 (36.6%) were multipara and 14 (34.1%) were nulliparous. Thirty (60.0%) patients were from middle class family. Only a few come from affluent family. Out of 50 cases, 7 (14%) had regular cycle, 15 (30%) had irregular cycle, 28 (56%) menopausal lady.

Table – II: Duration of symptoms (*n*= 50)

Duration	Frequency	Percentage
< 3 months	16	32.0
3-6 months	27	54.0
> 6 months	07	14.0

Table II shows distribution of symptoms. About 86% patients presented within six months of onset of symptoms.

Table – III: Per abdominal and per vaginal examination findings (*n*= 50)

	Frequency	Percentage
Mass in the abdomen	40	80.0
Size		
< 6 cm	08	16.0
7- 12 cm	26	52.0
> 12 cm	06	12.0
Consistency		
Cystic	05	10.0
Solid	23	46.0
Mixed	21	42.0
Mobility		
Mobile	13	26.0
Restricted	22	44.0
Fixed	04	08.0
Surface		
Regular	18	36.0
Irregular	20	40.0
Tenderness	24	48.0
Ascitis	03	06.0
Per vaginal examination		
Uterus normal in size	33	66.0
Mass separated from the uterus	34	68.0
Mass could not be separate form uterus	06	12.0
Pouch of Douglus	06	12.0

Table – IV: Trans abdominal sonographic findings (*n*= 50)

Involvement of ovary	Frequency	Percentage
Bilateral	26	52.0
Unilateral	24	48.0
Consistency of the ovary		
Cystic	09	18.0
Solid	22	44.0
Mixed-partly solid and partly cystic	19	38.0
Septation		
Present	31	62.0
Absent	19	38.0
Ascitis		
Present	05	10.0
Absent	45	90.0
Other organ matastasis (Liver)		
Present	05	10.0
Absent	45	90.0

Table IV shows that 52% of malignant ovarian tumour had bilateral distribution and 44% solid in consistory.

Table – V: Distribution of findings on laparotomy (*n*= 50)

Unilateral ovarian tumour	Frequency	Percentage
Unilateral ovarian tumour	23	46.0
Right	20	40.0
Left	03	06.0
Bilateral	27	54.0
Ascitis	18	36.0
Serous fluid	07	14.0
Haemorrhagic fluid	11	22.0
Adhesion to surrounding structure	38	76.0
Engorged vessels on tumour surface	09	18.0
Broken capsule	29	58.0
Solid area in cystic tumour	11	22.0
Involvement of omentum and intestine	06	12.0
Involvement of liver, stomach	13	26.0
Abdominal lymph adenopathy	12	42.0

Table V shows the distribution of findings on laparotomy. Bilateral tumour found in 27 (54.0%) cases aand unilateral found in 23 (46.0%) cases. Haemorrhagic fluid found in 11 (22.0%) cases and serous fluid found in 7 (14.0%) cases. Adhesion to surrounding structure found in 38 (76.0%) cases. Involvement of omentum and intestine and involvement of liver and stomach found in 6 (12.0%) and 13 (26.0%) cases respectively.

Table – VI: Distribution of per operative metastatic findings (*n*= 50)

Site of metastases	Frequency	Percentage
Omentum and peritoneum	27	54.0
Intestine	06	12.0
Pouch of Douglas	04	08.0
Liver metastasis	13	26.0

Table VI shows that 54.0% patient had involvement in the omentum, 26.0% patient having involvement in liver.

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Table – VII: Distribution of macroscopic findings of the tumour (*n*= 50)

Macroscopic finding	Fequency	Percentage
Size		
< 6 cm	0	0.0
7-12 cm	29	58.0
> 12 cm	06	12.0
Consistency		
Soft	20	40.0
Firm	12	26.0
Hard	09	18.0
Finding on cut section of tumour		
Unilocular	12	24.0
Multilocular	21	42.0
Haemorrhagic fluid (partially)	05	10.0
Serous fluid	02	04.0
Thick viscid mucoid fluid	24	48.0
Thick sebaceous fluid with heir follicle	01	02.0

Table VII shows that 58% malignant tumours were with in 7-12 cm in size, 18% malignant tumour were hard in consistency and 42% malignant tumours were multilocular.

Table – VIII: Distribution of histopathological findings (*n*= 50)

histopathological findings	Frequency	Percentage
Epithelial tumour	34	68.0
Serous cystadenoca	25	50.0
Mucinous cystadenoca	07	14.0
Endometroid tumour	01	02.0
Undifferentiated carcinoma	01	02.0
Sex-cord stromal tumour	16	32.0
Germ cell tumour	03	6.0
Immature teratoma	03	6.0
Dysgerminoma	10	20.0

Table VIII shows that 68.0% malignant tumours were epithelial origin and 32.0 were sex-cord stromal tumours.

DISCUSSION

The present study was conducted to find out the clinical and histopathological pattern of malignant ovarian tumour among the Bangladeshi women admitted in this tertiary centre level. About 6.33% of total patients admitted with Gynaecological problem into DMCH was suffering from ovarian tumour from October 2010 to March 2011. Among this 71.7% benign and 28.3% were malignant ovarian tumour. Yasmin et al.[7] in a study showed that the total number of gynaecological admissions 5732, total number of ovarian tumours were sixty-eight. Out of which benign ovarian tumours were 61 (89.71%) and malignant ovarian tumours were 7 (10.29%). Shaikh et al.[19] in a study of 694 ovarian tumor specimens showed that the majority of these tumors were benign (68.28%). The most important predictor of malignancy is the age of the patient. The risk of malignancy in ovarian tumors increases 12-fold from the ages 12-29 years to 60-69 years Kooning et al.[20]. In Pakistan it is the 2nd most common cause of death in female malignancies after breast tumors Saler et al. [21]. High incidence is found in North America and Europe (UK, Nordic countries) as compared to Japanese La Vacchia [22]. In the present study the most common age group of the present study was 45 to 65 years. The mean age for malignancy was 49.07±18.5 y years in a study by Wasim et al. [3]. In their study 6 patients with malignancy were less than 35 years age but 80% of patients with malignancy were in the older age group (> 50 years). Similar results have been shown by other studies conducted by Lataifeh et al. [23], Boyle and Ferlay [24], Rafiq et al.[25] and Webb et al. [26]. Younger age group is reported in studies conducted by Olsen et al. [27], Yawn et al. [28], Shaikh et al.[19] and Gupta et al. [29]. Wasim et al. [3] in a study showed that the mean age of the patients with malignant tumours was 49.07±18.5 years. The present study showed that 82% patients were married women and 18% unmarried women developed ovarian tumours. 10% grand multiparous patient had malignant ovarian tumour and 8% were married nulliparous women was suffering from ovarian tumours. The ovarian cancer is common in low parity and in infertile women probable due to incessant ovulation theory. In national survey of ovarian cancer in USA (1982) 8.2% of infertile women had malignancy. In socioeconomic condition, 60% patients with malignant ovarian tumours are from middle class family. Only a few come from affluent family. This result is consistent with previous studies in our country done by Farzana et al. [30]. Neither malignant nor benign tumours usually affect the menstrual functions. In the present study out of 50 cases, 7 (14%) had regular cycle, 15 (30%) had irregular cycle, 28 (56%) menopausal lady were suffering from malignant ovarian tumours. This result is not so consistent with previous studies in our country done by Farzana et al. [30]. Smallar number of patients and participation of menopausal women may be the causes behind it. Present study showed that 2 (4%) cases had positive family history of ovarian neoplasm and 48 (96%) has no such history. Family history of ovarian and breast cancer is a strong risk factor for ovarian cancer Rufford et al.[31] as it may indicate presence of inherited germ line mutation in either BRCA-1 or BRCA- 2. In our study family history was found only in 4.0% cases to be a risk factor, and it may be due to small study size. About 86% patients presented within six months of onset of symptoms. Clinical presentation of 98% patients of malignant ovarian tumour was loss of appetite with flatulent dyspepsia and 90% patient spresented with loss of weight. The women who ignored their symptoms present in advance disease Rafiq et al. [25] in their study reported symptoms are, pain in abdomen 58%, 46%, 57.1%, mass lower abdomen as 77%, 66%, 50.7 % respectively. Yasmin et al. [7] in their study showed that the commonest presenting symptom was pain abdomen 48 (70.59%) followed by mass abdomen 10 (14.71%). The results comply well with a study carried out at Sir Ganga Ram and Myo Hospital Lahore by Rashid et al. [32] showed that abdominal pain was the commonest presenting complaint (59%) followed by abdominal mass/distension (37%). In contrast to another

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retrospective analysis by Jamal et al. [33] at Combined Military Hospital, Kharian the commonest mode of presentation was bleeding per vaginum, followed by pain abdomen, pelvic mass and gastric intestinal symptoms. Their study results comparable with the present study. In the present study showed that 54% patients had involvement in the omentum, 26% patients in liver and 22.82% patients had involvement of lymph node. About 58% malignant tumour were with in 7-12 cm in size, 18% malignant tumour were hard in consistency and 42% malignant tumour were multilocular. Serous tumours were found to be more common than mucinous Yasmin et al. [7]. Present study showed that 68% malignant tumours were epithelial tumour and 20% were dysgeroninoma. In their study the common malignant ovarian tumours were granulosa cell tumours and Endometriod carcinoma (each 28.5%). Similar results were reported by Prabhakar[34] in which serous tumours were the commonest followed by mucinous tumours. Pilli et al. [35] in Belgium recorded epithelial tumours to be the commonest variety constituting 70.9% of all the ovarian tumours followed by germ cell tumours (21.2%), sex cord stromal tumours (6.7%) and metastatic tumours (0.7%). Wasim et al. [3] in a study showed that in histopathology of malignant tumours, serous cyst carcinoma in 46.7% and mucinous cyst carcinoma in 26% cases. Shaikh et al. [19] in a study of 694 ovarian tumor specimens showed that the majority of these tumors were benign (68.28%). Tumors of low malignant potential (borderline) were <01%. Those with frank malignant features were 31%. In their study on cytological basis, tumors taking origin from surface epithelium were most frequent, constituting 81% of the total. Germ cell tumors were second in the row with percentage of 10.95.

Conclusion

From the above discussion we see that most of the patient of this study population are illiterate, from poor socio-economic condition. Flatulence and dyspepsia in postmenopausal women should be concern with and her per abdominal, pelvic examination, together with transvaginal USG and CA-125 must be done to exclude malignant ovarian tumour.

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