Original Article

Clinicopathological findings and sociodemographic variables of malignant ovarian tumors: A hospital based study

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Abstract

Objectives: To study the various clinical presentations, sociodemographic variables and prevalence of malignant neoplasms of ovary in our hospital. **Materials and Methods:** The present study was conducted in the Department of Obstetrics and Gynaecology SMGS Hospital, Government Medical College, Jammu for a period of one year from October 2014 to September 2015. This was a prospective observational study of the malignant ovarian tumors admitted to Gynaecology ward. **Results:** Out of 140 cases of ovarian tumors enrolled, 107 were benign and 33 turned out to be malignant. Mean age of the patients with Malignant tumors was 39.93±15.44 (10-70) years. Among malignant cases, 7 (21.21%) subjects had history of fertility drug and 5 (15.16%) subjects had family history of ovarian cancer. Pain abdomen in 15 (34.88%) cases was the most common mode of presentation. CA-125 was raised in 26 (78.79%) subjects. Among malignant cases, size of mass was 5.1 to 10 cm in 20 (60%) subjects. Mass was firm in 24 (72.72%) subjects. On histopathology most common malignant ovarian cases were those of Papillary Serous Cystadenocarcinoma in 18 (54.55%) cases. **Conclusion:** Clinical suspicion along with positive family history may help in early detection of malignant ovarian tumor.

Keywords: Malignant, ovarian tumor, histopatholgy, sociodemographic variables, clinical, Epithelial ovarian cancer, Germ cell Tumors.

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INTRODUCTION

Ovarian cancer is one of the leading cause of death among gynaecologic malignancies**.** This cancer is associated with the poor prognosis in contrast to other malignancies[1]. It remained poor despite the new chemotherapeutic treatment modalities. This poor prognosis has usually been attributed to the fact that at the time of diagnosis 70.0% of the ovarian cancers have a widespread intraperitoneal metastasis[2]. Due to the fatal outcome of this disease, early and accurate diagnosis of ovarian tumour is needed. Most typical symptoms include bloating, abdominal or pelvic pain, difficulty in eating and possibly urinary symptoms. If these symptoms are repeated more than 12 times per month the diagnosis should be considered[3]. The risk of ovarian cancer rates increases exponentially with age. Nulliparity, early menarche and late menopause increases the risk of, and may be seen as a cause of ovarian cancer**.** Oral contraceptives, tubal ligation, hysterectomy and removal of both tubes and ovaries (bilateral salpingo-oophorectomy) have shown to reduce the risk of ovarian cancer[4]. It is important to determine the clinicopathological pattern of malignant ovarian tumors from a diagnostic as well as prognostic point of view.

MATERIAL AND METHODS

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The study was conducted in the Department of Obstetrics and Gynaecology, SMGS Hospital, Government Medical College, Jammu for a period of one year from October 2014 to September 2015.This was a prospective observational study of the malignant ovarian tumors admitted to Gynaecology ward in SMGS.

Inclusion Criteria

- Patients whose specimen turned out to be malignant on histopathological examination

Exclusion Criteria

1. Patients diagnosed on ultrasound as tubo- ovarian masses, PID and ectopic pregnancies.
2. Patients whose specimen turned out to be benign on histopathological examination.

The present study was approved by the ethics committee. All the patients with ovarian masses admitted in Gynaecology ward at any age were enrolled for the study and evaluated. After proper counselling and informed consent, their sociodemographic histories were taken. Different biochemical values including serum CA-125 were measured. The patients were then taken up for laparotomy and the specimen collected were sent for histopathology to confirm malignancy. All data were recorded systematically in preformed data collection form (questionnaire). Quantitative data were expressed as mean and standard deviation and qualitative data were expressed as frequency distribution and percentage. Statistical analysis was performed by using Statistical Packages for Social Sciences (SPSS-19) (SPSS Inc, Chicago, IL, USA).

RESULTS

Table 1: Prevalence of malignant ovarian tumors among gynaecological admissions during 2014-2015

Year	Total number of gynaecological admissions	Number of malignant ovarian cases	Rate of prevalence per 1000 population
2014 – 2015	2390	33	13.8

Table 2: Age distribution

Age group (in years)	Malignant (n=33)	
	Frequency	%
10 – 20	4	12.12
21 – 30	6	18.19
31 – 40	7	21.21
41 – 50	8	24.24
51 – 60	7	21.21
61 – 70	1	0.03
≥71	0	0
Total	**33**	**100.00**

Table 3: Fertility drugs, family history and OCP intake

Associated history	Malignant (n=33)	
	Frequency	%
Fertility drugs	7	21.21
Family history	5	15.16
OCP intake	11	33.33
Others	10	30.30
Total	**33**	**100.00**

Table 4: Mode of presentation

Chief Complaints (n=43)	Malignant	
	Frequency	%
Abdomen distension	9	20.94
Amenorrhea	0	0
Bleeding per vaginum	0	0
Irregular menstrual cycle	2	4.65
Mass abdomen	11	25.58
Pain abdomen	15	34.88
Post menopausal bleeding	2	4.65
Vague GI Complaints	4	9.30
Total	**43**	**100.00**

Table 5: Distribution according to CA-125

CA-125 (U/mL)	Malignant (n=33)	
	Frequency	%
<35 (normal)	7	21.21
≥35 (abnormal)	26	78.79
Total	**33**	**100.00**

Table 6: Laparotomy findings

Laparotomy findings		Malignant (n=33)	
		Frequency	%
Size of mass (cm)	1 – 3	3	9.09
	3.1 – 5	5	15.16
	5.1 – 10	20	60.60
	>10	5	15.15
Total		**33**	**100.00**
Consistency of mass	Cystic	9	27.27
	Firm	24	72.72
Total		**33**	**100.00**

Table7: Histopathological variables

Histological classes of malignant ovarian tumors	Malignant tumors	Total (n=33)	
		Frequency	%
Surface epithelial tumor	Mucinous cystadenocarcinoma	3	9.09
	Papillary serous cystadenocarcinoma	18	54.55
Germ cell tumor	Dysgerminoma	5	15.15
	Malignant teratoma	2	6.06
Sex cord stromal tumor	Granulosa cell tumor	3	9.09
	Sertolileydig cell tumor (androblastoma)	1	3.03
	Endodermal sinus tumor	1	3.03
Total		**33**	**100.00**

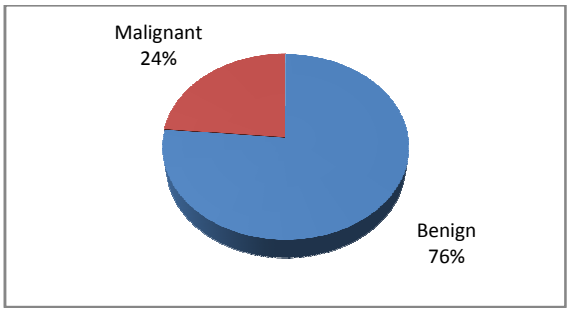

Figure 1: Pie chart showing distribution of benign and malignant cases

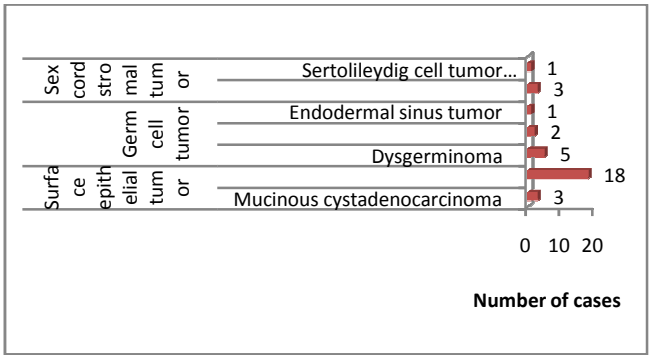

Figure 2: Bar chart showing histopathological variables

DISCUSSION

Out of 2390 gynaecological admissions in the Hospital, a total of 140 ovarian neoplasms were detected, out of which 107 (76.43%) were benign and 33 (23.57%) were malignant cases (Figure 1). Benign ovarian tumor were encountered far more frequently than malignant ovarian neoplasm. This is consistent with the studies carried out in India by Gupta *et al*[5] which showed similar result of malignant ovarian tumors i.e. 22.9%. The prevalence of malignant tumor was 13.8 per 1000 population (Table 1). These prevalence rates could be regarded as minimum incidence of ovarian cancer since a prospective study directly generating incidence is difficult to conduct due to the absence of any population based registers (making it almost impossible to capture missed cases); the insidious nature of these tumors (resulting in non reporting bias) ; and failure of these cases to report to the hospital who succumb to the disease or seek treatment elsewhere. This was consistent with the study of Jha *et al* [6] who reported the incidence of malignant ovarian tumor to be 16.1%. The ages of the patients with malignant tumors ranged from 10 to 70 years with the mean age being 39.93+-15.44 which was similar to the age range as published by Deeba F *et al*[7] i.e 40.6+-12.5. However Wasim *et al*[8] and Mondal *et al*[9] reported the mean age as 48 and 49.5 years which was much higher than our study. The highest number of cases amongst malignant neoplasms was seen in the age group of 41 to 50 years i.e 8 cases (24.24%), (Table 2). This is comparable to the study of Vora and Bhargav[10] who reported malignant tumors to be more common after the age of 40 and also to the study by Deeba F *et al* [7] who reported 35.7% incidence of malignant ovarian tumor over 40 years of age. Family history of ovarian cancer was found in 5 cases (15.16%), which is consistent with the study by Deeba F *et al* [7] who found the family history of ovarian cancer in 14.3% cases. Epidemiological study have indicated that after controlling age the strongest risk factor for ovarian cancer is family history[13]. In our study 7 cases (21.21%) had history of fertility drug (clomiphene citrate). Study by Rossing *et al*[11] has shown that use of fertility drugs and family history of ovarian cancer have significantly higher risks of developing ovarian cancer. Although, oral contraceptive pills have been associated with the decrease in the risk of ovarian cancer but no such correlation was found in the present study. Ten (30.30%) subjects had no family history of ovarian cancer, fertility drug and OCP intake (Table 3). The patients with malignant ovarian masses presented to the hospital with more than one chief complaints. Pain abdomen in 15 (34.88%) cases was the most common chief complaint, followed by mass abdomen in 11 (2.58%) cases (Table 4). This is in compliance with the study carried out by Sharadha *et al*[12] in which pain abdomen (35.7%) was the commonest presenting complaint followed by abdominal mass. Among the malignant cases CA-125 was normal in 7 (21.21%) subjects and raised in 26 (78.79%) subjects (Table 5). These results were in compliance with Kudoh *et al*[13] who observed that 77.6% of malignant ovarian cancer showed raised serum levels of CA-125 levels. Similarly Deeba F *et al*[7] observed raised serum levels of CA-125 in 78.6% patients. On Laparotomy, out of 33 malignant cases 20 (60%) subjects had the mass size of 5.1 to 10 cm, followed by 3.1 to 5 cm and >10 cm in 5 (15.15%) subjects each (Table 6). This is consistent with the studies of Hamper *et al* [14] and Deeba F *et al* [7]. Twenty four cases (72.72 %) of malignant tumors were firm and 9 cases (27.27%) were cystic in consistency (Table 6) This is consistent with the studies by Misra *et al*[15] and Couto *et al*[16] which showed high incidence of tumor with firm consistency to be malignant. Most malignant ovarian cases were those of Papillary serous cystadenocarcinoma, 18 cases (54.55%), followed by Dysgerminoma in 5 (15.15%) subjects. Granulosa cell tumor, Mucinous cystadenocarcinoma in 3 (9.09% each) subjects, Malignant teratoma in 2 (6.06%) subjects, Endodermal sinus tumor and Sertoli leydig cell tumor in 1 (3.03% each) subject constituted other histopathological variants (Table 7). The predominance of the serous tumors is consistent with the study by Pilli *et al* [17] who reported the greatest incidence of serous tumors in his work. Surface epithelial tumors (Mucinous and Serous

Cystadenocarcinoma) in 21 (63.64%) subjects were the commonest of all the malignant ovarian tumors. This is consistence with studies conducted by Ameena Ashraff *et al*[18] and Mankar and Jain et al19 who reported similar histological types in 52.76% and 68.48% cases respectively. (Figure 2) Germ cell tumors (GCT) comprised the second largest group constituting 8 (24.24%) cases, which is consistent with the study conducted by Ahmad Z *et al*[20] who documented almost similar results in 27.13% cases. Among the germ cell tumors Dysgerminoma, accounted for commonest GCT, 5 out of 8 cases (62.5%), whereas the study of Thanikasalam *et al*[21] showed Teratomas to be the predominant GCT. (Figure 2) Sex Cord Stromal tumors (SCST's) were the least common, 4 cases (12.12%) next to GCT. The incidence of these tumors is variable in other studies. Zahra22 found only 1% SCST's while Tanwani23 documented 10.1% cases of SCST's. Granulosa cell. Tumors were the commonest SCST's in the present study 3 out of 4 cases (75%), while studies carried out by Yasmeen *et al*[24] and Ahmad et al25 mentioned the variable incidence of 28.5% and 5.62% respectively. (Figure 2)

CONCLUSION

Malignant ovarian tumors are not uncommon in our setup and clinical suspicion along with positive family history and fertility drug intake may help in early detection of malignant ovarian tumor.

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