

Comparison of clinical presentation of Benign and Malignant Ovarian Tumours

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Abstract

Objective: To compare clinical presentation of benign and malignant ovarian tumours and to enlist and identify symptoms that could lead to early diagnosis of ovarian carcinoma

Methods: It was a consecutive case series study. All patients who on abdominal or bimanual examination and abdominal U/S were found to have ovarian cyst or tumour, and later underwent laparotomy were included.

Results: The study included 110 patients, of whom 80 (72%) had benign and the rest malignant disease. Mean age of patients with malignancy was 49.07 ± 18.5 years and for benign 36.95 ± 8.2 years ($p = 0.0001$). Eleven patients with benign tumours were asymptomatic, while 66% had abdominal pain. On the other hand 70% patients with ovarian malignancy had abdominal symptoms with abdominal pain in (76%). Abdominal enlargement and abdominal mass were significantly more in malignant tumours ($p = 0.003$, $p = 0.005$). Gastrointestinal symptoms were present in both groups but more significant in malignant group ($p = 0.004$). Constitutional symptoms like loss of appetite and weight loss were only present in malignant group ($p = 0.001$). Seventy percent of the malignant tumours presented at late stage (III & IV). Histopathology of benign tumours revealed follicular/luteal cyst in 32% cases while serous cyst adenoma in 23%. Histopathology of malignant tumours showed serous cyst carcinoma in 46.7% and mucinous cyst carcinoma in 26% cases.

Conclusions: Ovarian malignancy is a silent killer, especially affecting women above 50 years. Although presentation is often vague and non specific, symptoms are definitely present. Therefore a proper bimanual examination and appropriate investigations should be done at the outset in post menopausal women (JPMA 59:18; 2009).

Introduction

Ovarian epithelial carcinoma is one of the most common gynaecological malignancies and 5th most frequent cause of cancer death in females.¹ It is often called the "silent killer" because the disease is usually not detected until an advanced stage. Late diagnosis is thought to be at least in part due to vague non specific symptoms which can often go unrecognized for a period of time. Recent studies have reported that 95% of women with ovarian carcinoma have symptoms although not of gynecological nature.²⁻⁵ These symptoms are reported early in the disease and their pattern and duration differ in women with ovarian cancer as compared to normal women.⁶

Structural changes in ovary are responsible for formation of benign and malignant tumours. These tumours can arise from the epithelial wall of the ovary (serous, mucinous tumours), germinal epithelium (teratomas) or connective tissue of the ovary (fibroma, sarcoma). They can also originate from ovarian endometriosis (endometriomas). These tumours may be cystic or solid. Solid ovarian tumours are malignant in 80% of cases and should be dealt seriously.

Proper diagnosis of ovarian lesions is extremely important to differentiate between benign and malignant disease as 20 - 30% of all ovarian tumours are malignant.⁷ The suspected diagnosis of benign or malignant lesions should take the history and bimanual examination into account. Ultrasound is the standard investigation for identifying ovarian pathology as it gives information regarding the origin, consistency, vascularity, or complexity of a tumour, but definitive diagnosis can only be made by a tissue biopsy. The rationale of our study was to compare clinical presentation of benign and malignant ovarian tumours. It also aimed to enlist and identify symptoms that could lead to early diagnosis of ovarian carcinoma.

Patients and Methods

All patients coming to OPD or emergency department of Obstetrics and Gynaecology SIMS / Services Hospital Lahore. January 2005 to December 2007, who on abdominal or bimanual examination and abdominal Ultrasound were found to have ovarian cyst or tumour, and later underwent laparotomy, were included in the study. Ovarian tumours managed conservatively were excluded. After inclusion, their symptoms were recorded on a Performa. The symptoms were grouped into abdominal symptoms which included abdominal pain, abdominal mass, and abdominal enlargement. Gastrointestinal symptoms recorded were nausea, vomiting and constipation. Constitutional symptoms included loss of appetite and weight loss. Urinary symptoms were increase in urinary frequency and chest symptoms being dyspnoea. Family

history of ovarian / breast malignancy was also recorded.

Detailed ultrasonography was done by an experienced operator. If an ovarian tumour was detected then documentation was made regarding tumours dimensions and consistency i.e. solid or cystic. If cystic, then characteristics like cyst wall thickness and regularity, presence of septae, papillations, uni locular or multi locular were noted.

All patients were subjected to laparotomy. Patients presenting in emergency with complications of ovarian cyst like torsion or haemorrhage were also included. At laparotomy staging of tumour was done according to FIGO classification,⁸ as well as biopsy was sent for histopathological examination.

Main outcome measures were age, symptoms of the patient, stage and histopathology of tumour.

All the data was analyzed on SPSS version 10. Percentages and 95% CI was calculated. Chi-square test was applied to compare the symptoms of benign and malignant ovarian tumours.

Results

A total of 110 laparotomies were done for ovarian tumours during the study period. There were 80 (72%) benign tumours and 30 (28%) were malignant according to histopathology. Mean age of the patients with malignant tumours was 49.07±18.5 years and was statistically significant (p= 0.0001) from the benign counter part who had mean age of 36.9±8.2 years (Table 1). As regards the

Table 1: Comparison of mean age of patient with benign and malignant tumours.

Malignancy Status	N	Mean age of the patients	Std. Deviation	Std. Error Mean
Benign	80	36.95	8.2	.920
Malignant	30	49.07	18.5	3.384

Statistical analysis
 Mean difference age = -12.1 year (95% CI for difference = -17.1 to -7.1)
 t value =4.7
 p value = .0001 (<0.05)
 df = 108

symptoms, only 11 patients with benign tumours were asymptomatic, with abdominal pain being the commonest, seen in 66% patients (Table 2). On the other hand 70% patients with ovarian malignancy had abdominal symptoms of which abdominal pain was the commonest complaint (76%). Abdominal enlargement and abdominal mass was significantly more pronounced in malignant tumours as compared to their benign counterpart (p=0.003, p= 0.005). Gastrointestinal symptoms were present in both groups but more significant in malignant group (p=0.004). Constitutional symptoms like loss of appetite and weight loss

Table 2: Comparison of symptoms among patients with benign and malignant tumours.

Symptoms	Malignancy Status of ovarian tumour						P value for Chi-square/ Fisher's Exact Test
	Benign (n=80)		Malignant (n=30)		Total (n=110)		
	No	%	No	%	No	%	
Asymptomatic	11	13.8	0	0.0	11	10.0	0.032(< 0.05)
Abdominal enlargement	23	28.8	18	60.0	41	37.3	0.003 (< 0.05)
Abdominal pain	53	66.3	23	76.7	76	69.1	0.292(> 0.05)
Abdominal mass	12	15.0	12	40.0	24	21.8	0.005(< 0.05)
Nausea and Vomiting	24	30.0	18	60.0	42	38.2	0.004(< 0.05)
Constipation	21	26.3	17	56.7	38	34.5	0.003(< 0.05)
Loss of appetite	0	0.0	20	66.7	20	18.2	0.001(< 0.05)
Weight loss	0	0.0	21	70.0	21	19.1	0.001(< 0.05)
Dyspnea	12	15.0	13	43.3	25	22.7	0.002(< 0.05)
Increased urinary frequency	17	21.3	6	20.0	23	20.9	0.886(> 0.05)

were only present in malignant group (p=0.001). Dyspnoea was also seen more in malignant group. Increase urinary frequency had no statistical difference between the two groups. Family history of malignancy was present in only 3 patients of malignant group and also in 1 patient of the benign group. Seventy percent of the malignant tumours presented at a late stage (III & IV). Histopathology of benign tumours revealed follicular / luteal cyst in 32% cases followed by serous cyst adenoma in 23% cases. Histopathology of malignant tumours showed serous cyst carcinoma in 46.7% and mucinous cyst carcinoma in 26% cases.

Discussion

Early diagnosis of ovarian cancer is a challenge to the gynaecologists, mainly due to the fact that symptoms in early disease are vague and non specific. Diagnosis at earlier stage is of paramount importance, as early stage disease is limited to pelvis and ovary (stage I & II) and carries 80 - 95% survival, while that for stage III and IV (involving upper abdomen and beyond) is only 10 - 30%.⁸ Therefore, due to the importance of early stage detection, large randomized ovarian screening trials with mortality as end point are underway in UK (UK collaborative trial of ovarian cancer screening).⁹

Increasing amount of data reports that most women with ovarian cancer suffer from non specific constitutional, abdominal, pelvic, urinary or other symptoms prior to diagnosis. Therefore the women suffering from these non specific symptoms are an important population to target for ovarian tumour screening.

Several studies have shown that women with ovarian cancer experience abdominal, gastrointestinal and constitutional symptoms, more as compared to those with benign tumours.^{7,10-13} Our study has similar results, showing abdominal, gastrointestinal and constitutional symptoms to be significantly more marked in patients with malignant disease. Studies have compared these symptoms

in normal women as well as in patients with early and late stage ovarian cancer. One study showed that 95% of women with ovarian cancer visiting primary care physicians, reported at least one of the above mentioned symptoms.⁶ A study including 1752 ovarian cancer patients concluded that 95% of patients reported symptoms, 77% had abdominal symptoms, 70% gastrointestinal, 50% constitutional, 58% pelvic pain and 38% had urinary symptoms.¹⁴

Abdominal pain was the most common presentation in both groups in our study, but was not statistically different, whereas other studies have reported more association with malignant disease.^{10,12} In benign group this could have been due to the increased tumour size, ascites, endometriomas and complications of ovarian cyst, as most patients presented late. On the other hand abdominal enlargement was significant in malignant patients, both due to increased tumour size and presence of ascites. The latter has been studied independently as a predictor of malignancy with a 95% positive predictive value to detect an ovarian malignancy, but carries a 64% negative predictive value as well (because 80% of early stage malignant tumours do not produce ascites).¹⁵ Eleven percent of our patients were asymptomatic, all belonged to benign group and were diagnosed during routine evaluation for another problem. None of our cancer patients was asymptomatic while few other studies have reported 7-15% of ovarian cancer patients to be asymptomatic.^{14,16}

Targeting women with specific symptoms and possibility of development of a symptom index has been recommended by a study from USA.¹⁷ RD Rumford has strongly suggested that screening of woman for ovarian cancer can be done using symptoms as selection criteria.¹⁸

Family history of ovarian and breast cancer is a strong risk factor for ovarian cancer^{15,18} as it may indicate presence of inherited germ line mutation in either BRCA - 1 or BRCA - 2. In our study family history was not found to

be a risk factor, and it may be due to small study size.

Ultrasound has been used to identify type, site, and size of a tumour. Majority of studies have concluded that ultrasound carries a sensitivity of 92% and specificity of 97%, while few studies have reported a limited role for ultrasound as an independent investigation for detecting ovarian carcinoma.¹⁹⁻²¹

In our study 72% patients had benign ovarian tumours. Similar percentage has been shown in other studies.^{11,16,22} Follicular cyst and corpus luteal cyst were commonest (32%) in benign groups. This is similar to a study from India.²³ Histologically, surface epithelial tumours were commonest (46%) in malignant group. This is similar to almost all studies.^{10-15,24} Teratomas were seen both as benign (dermoid cyst) and malignant form (immature teratomas). Similar proportion is reported in other studies.^{13,14,25}

The mean age for benign group was 36.95±8.2 years in our study. Younger age group is reported in other studies as well.^{10-13,22,23} Six 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.^{5,7,10,16} So, women aged 50 and above with non specific symptoms related to GI system or abdominal involvement should be assessed carefully. They should be subjected to bimanual examination and pelvic ultrasound, so that ovarian cancer diagnosis may be achieved earlier. Late presentation was encountered in 70% of our malignant patients (Stage III-IV). Delay in presentation is one of the big dilemmas with ovarian cancer and is responsible for high mortality associated with the disease. Similar delays have been reported in other studies.^{6-11,24-25} Reasons for delay were non-specific symptoms, inadequate health care system, omission of pelvic examination at presentation, illiteracy and poverty. The symptoms were not taken seriously as they were considered normal for age and menopause.

Conclusion

Ovarian malignancy is a serious disease, affecting women of all ages, more so above 50 years. 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.

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