Clinicopathological study of Ovarian tumours

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ABSTRACT

Introduction : The ovary consists of sex cells, which are totipotential and of mesenchymal cells which are multipotential.So when it becomes neoplastic almost any type of tumour can result. The ovarian tumours manifest as a wide spectrum of clinical, morphological and histological features. Ovarian tumours can occur in women of all ages, but there are differences in the histological types during various decades of life. During infancy and childhood the predominant type is germ cell tumours, where as in adults the epithelial tumours are the most common type. The incidence rate increases with age, peaks at 5th decade.

Aims and Objectives: To study the incidence, clinical features, age and parity distribution and complications of ovarian tumours and to evaluate clinicopathological features of ovarian malignancy.

Materials and Methods: The present study is a prospective study done on 74 patients of all age groups presenting with ovarian tumours to the Department. of Obstetrics and Gynaecology for the period of 2 years. A detailed clinical history was taken with structured questionnaires. General, systemic and pelvic examinations were done. Complete haemogram, blood sugar level, HIV, HbSAg, urine examination, Pap smear, ultrasonography was done routinely. ECG and chest X ray were done for fitness for anaesthesia or when indicated.Tumour marker CA 125 level estimation was done in clinically suspected cases of malignancy. CT was done in suspected inoperable malignant tumours.

Results: The total number of ovarian tumours was 74 and the number of gynaecological admissions was 1251 giving an incidence of 5.91%. Of these 43 were benign, 8 were borderline and 23 were malignant giving a percentage of 58.1%, 10.8% and 31.08% respectively.

Conclusion: Ovarian tumours have varying modes of presentation. Benign ovarian tumours present at an early age (3rd decade) compared to malignant tumours which present in 5th decade. Majority of the patients have symptoms not necessarily gynecological in nature. Malignant ovarian tumours are still diagnosed at a very late stage. Ovarian cancer still a silent killer. A good history, detailed physical examination and investigations like USG, do help to come to an accurate diagnosis, but final diagnosis depends on histopathology.

Key words : Ovarian malignancy, clinicopathological, borderline malignant

INTRODUCTION

Ovary is an important organ as is concerned with the reproduction of progeny. The ovary is complex in its embryology, histology, steroidogenesis and potential for malignancy[1]. The ovary consists of sex cells, which are totipotential and of mesenchymal cells which are multipotential[2] .So when it becomes neoplastic almost any type of tumour can result. The ovarian tumours manifest as a wide spectrum of clinical, morphological and histological features[3].

Ovarian tumours can occur in women of all ages, but there are differences in the histological types during various decades of life[4]. During infancy and childhood the predominant type is germ cell tumours where as in adults the epithelial tumours are the most common type. The incidence rate increases with age, peaks at 5th decade. Ovarian cancer has often been called the “silent killer” because symptoms are not thought to develop until advanced stages when chance of cure is poor. However several studies showed that majority of patients does have symptoms, although not necessarily gynaecologic in nature. Frequent symptoms reported are pain, abdominal swelling, dyspepsia, vomiting altered bowel habits and urinary symptoms of frequency or retention[5,6,7].

MATERIALS AND METHODS

The present study was done for a period of two years and consists of 74 patients of all age groups presenting with ovarian tumours to the Department of Obstetrics and Gynaecology. Patients who are diagnosed to have ovarian tumours by clinical and sonological examination were included and women with non neoplastic cysts of the ovary like functional cysts were excluded from the study. Informed consent was obtained from the patients included in the study.

CT was done in suspected inoperable malignant tumours. Ultrasound guided fine needle aspiration was done when preoperative chemotherapy was decided to know the cell type. Surgery was the primary method of management. For benign tumour either a cystectomy or ovariotomy was done as conservative surgery in young and total abdominal hysterectomy with bilateral salphingo-oophorectomy was done in older women. In malignant ovarian tumours standarad surgical procedure involved staging laparotomy via a vertical midline incision. Specimen was sent to pathology department for histopathological examination. A gross examination of each tumour was carefully done and sections from representative areas studied microscopically. Consistency of the tumour was confirmed by cut section of the gross specimen.

Statistical analysis- student t test was used for statistical analysis. P value of <0.05 was considered as significant.

RESULTS

The total number of ovarian tumours was 74 and the number of gynaecological admissions was 1251 giving an incidence of 5.91%. Of these 43 were benign, 8 were borderline and 23 were malignant giving a percentage of 58.1%, 10.8% and 31.08% respectively. Benign tumours were common in the reproductive age group between 21-50 years with peak incidence of 13 cases (30.2%) in the age group of 31-40 years. Malignant tumours were common in age group of 51-60 years and above with peak incidence of 10 cases (43.4%) in 51-60years age. Borderline tumours were common in 41-50years [Table 1]. 60 cases (80.9%) of ovarian tumours occured in parous women and 14 cases (18.9%) occurred in nulliparous women. Benign tumours were seen in 10 (23.2%) of nulliparous women and malignant tumours were seen in 3 (13.04%) of nulliparous women [Table 2].

Table 1: Age disribution of Ovarian tumours

Age in Years	Benign		Malignant		Borderline		Total	
	No	%	No	%	No	%	No	%
11-20	2	4.6	-	-	-	-	2	2.7
21-30	7	16.2	1	4.3	-	-	8	10.8
31-40	13	30.2	1	4.3	1	12.5	15	20.2
41-50	8	18.6	5	21.7	5	62.5	18	24.3
51-60	7	16.2	10	43.4	2	25	19	25.6
>61	6	13.9	6	26	-	-	12	16.2
Total	43	58.1	23	31.08	8	10.8	74	

Table 2: Parity distribution

Parity	Benign		Malignant		Borderline		Total	
	No	%	No	%	No	%	No	%
Nullipara	10	23.2	3	13.04	1	12.5	14	18.9
1	2	4.6	2	8.6	1	12.5	5	6.7
2	13	30.2	3	13	2	25	18	24.3
3	5	11.6	5	21.7	1	12.5	11	14.8
4	4	9.3	2	8.6	-	-	6	8.1
5 &>	9	20.9	8	34.7	3	37.5	20	27

Table 3: Mode of presentation

	Benign		Malignant		Borderline		Total	
	No	%	No	%	No	%	No	%
Mass abdomen	15	34.88	15	65.2*	4	50	34	45.97
Pain abdomen	25	58.1	13	56.5	5	62.5	43	58.1
Menstrual disturbance	9	20.9	5	21.7	2	25	16	21.62
GI distur-bance	12	27.9	3	13	1	12.5	16	21.62
Urinary Symptoms	12	27.9	4	17.4	2	25	18	24.32
Loss of appetite/ weight	3	7	12	52.2**	-	-	15	20.27
Others-Fever White discharge PV	1 2	2.3 4.6	2 1	8.8 4.4	- -	- -	3 3	4.05 4.05
Mass per vagina	1	2.3	2	8.8	-	-	3	4.05
Ascites	1	2.3	8	8	-	-	9	12.16

*P<0.05 **P<0.001

All the 74 cases had varying symptoms. The most frequent presenting symptoms of both benign and malignant tumours was pain abdomen in 43 cases (58.1%) and mass abdomen in 34 cases (45.97%) followed by urinary symptoms 18(24.32%), gastrointestinal symptoms 16(21.62%) and menstrual disturbance 16(21.62%) cases. Loss of appetite and weight was the major symptom with malignancy in 12 cases (52.2%) . Acute pain abdomen and vomiting was always associated with torsion in benign tumours. Chronic pain was more common in malignant tumours. Ascites was present in 34.8% of malignant tumours.

Mass per abdomen, loss of weight, loss of appetite and ascites were more common in malignant tumours as compared to benign tumours and was statistically significant [Table 3]. Among benign tumours 39 were unilateral and 4 bilateral. Malignant tumours were bilateral in 12 (52.17%) and 8 in unilateral cases [Table 4]. Benign tumours were predominately cystic (88.7%), where as malignant tumours were partly cystic and partly solid (56.52%) on gross examination. In 7 cases consistency could not be made out, 4 cases were inoperable only biopsy was taken and 3 cases were not operated [Table5].

Table 4: Occurrence of unilateral and bilateral tumours

Types	Unilateral		Bilateral	
	No	%	No	%
Benign	39	90.69	4	9.3
Borderline	8	100	-	
Malignant	8	34.78	12	52.17
Total	55	74.32	16	21.62

Table 5: Consistency of Ovarian tumours

Types	Cystic		Solid		Party Cystic & Partly Solid	
	No	%	No	%	No	%
Benign	38	88.7	5	11.62	-	-
Borderline	5	62.5	-	-	3	37.5
Malignant	-	-	5	21.73	13	56.52
Total	43	58.1	10	13.5	16	21.62

Table 6: Histological type of Ovarian tumours

Group	Benign		Malignant		Total	
	No	%	No	%	No	%
Surface epithelial Stromal tumours	34	79.06	23	74.19	57	77.02
Sex cord stromal tumors	2	4.65	2	8.69	4	5.4
Germ cell tumors	7	16.27	1	4.34	8	10.8
Metastatic	-	-	2	8.69	2	2.7
Not operated	-	-	3	13.04	3	4.05
Total	43		31		74	

Commonest histological type we found was surface epithelial tumour with 57 cases (72.02%) followed by germ cells 8(10.8%). Benign surface epithelial tumours constituted 34 cases(79.06%) of all benign tumours. Its malignant counterpart formed 74.91% with 23 cases of all malignant tumours. 3 malignant cases were not operated, ultrasound guided fine needle aspiration was done, cytology showed serous cystadenocarcinoma [Table 6]. Torsion was the common complication in benign tumours seen in 8 cases where as haemorrhage was seen in 7 cases which was common in malignant tumours and was statistically significant [Table 7].

Table 7: Complications

Complications	Benign		Malignant	
	No	%	No	%
Torsion	8	18.6*	1	3.2
Infection	1	2.32	-	-
Rupture	-	-	2	6.45*
Haemorrhage	4	9.3	7	22.5*

x^2 =8.76 *p<0.05@ df=3

DISCUSSION

The present study comprising of 74 ovarian tumours, was undertaken to evaluate the incidence, age distribution, parity distribution, clinical features, complications and histopathological features.

74 cases of ovarian tumours were seen among 1251 gynaecological patients treated with an incidence of 5.91%.(Bhargava and Vora reported an incidence of 4.11%.[8]). Out of 74 cases of ovarian tumours, 43(58.6%) were benign, 8(10.8%) were borderline and 23(31.08%) were malignant. This is consistent with other studies like Gupta.[9]

In our study age range was 14years and 80 years. In our study, benign tumours were common in 31-40 years where as malignancy in 51-60years. In the present study, the maximum number,52 (70.27%) of cases were observed between the age group of 31-60years. Epithelial tumours were the commonest constituting 57(77.02%) of all the tumours, followed by germ cell tumours 8(10.8%), sex cord stromal tumours 4(5.4%). Similar observation was made by Bhuvanesh and Logambal[10]. Among the individual tumours, serous tumours were the commonest constituting 22(43.24%) followed by mucinous tumours 17(22.97%), teratoma 7(9.45%), thecoma 2(2.7%), granulosa cell tumours 2(2.7%), metastatic tumours 2(2.7%).

Age distribution in the benign tumours was common between 31-40years and malignant tumours 51-60years and borderline tumours between 41-50years.

Benign tumours were present in 13(30.2%) nulliparous women and malignant tumours in 8(34.7%) of nulliparous women. Sikdar[11] also observed 81% of malignant tumours in parous women and 18.6% in nulliparous women. The common presenting features were pain abdomen 43(58.1%) which has correlated well to the study by Randhava and Lata and Shah & Vaidya[12]. Torsion was the most common complication in 8(18.6%) cases of benign tumours where as rupture and haemorrhage were common in malignant tumours. These observations correlated well to the previous studies by Randhava & Lata and Verma & Bhatiya.

There were 55(74.32%) case of unilateral involvement of ovary and 16(21.62%) cases of bilateral involvement. 39 (90.69%) of benign tumours were unilateral, 12(52.17%) of malignant tumours were bilateral. All 8 borderline tumours were unilateral. Similar findings were reported by Bhuvanesh and Logamabal[10].

Majority of benign tumours 38(88.37%) were cyctic, 5 (11.62%) were solid. 13(56.53%) cases of malignant tumours were partly cystic and partly solid and 5 (21.73%) were solid. Chhand also observed 86.7% of cystic and 13.3% of solid benign tumours[13].

7 (9.45%) cases of dermoid cysts and 1 (1.35%) case of yolk sac cell tumour with embryonal cell carcinoma were seen. Out of 4 sex cord stromal tumours 2(2.7%) were malignant granulosa cell tumour and 2 (2.7%) were thecoma. Most malignant ovarian tumour 12 cases (52.17%) were diagnosed at stage III. All borderline tumours were diagnosed at stage I.

CONCLUSION

Ovarian tumours have varying modes of presentation. Benign ovarian tumours present at an early age (3rd decade) compared to malignant tumours which present in 5th decade. Majority of the patients have symptoms not necessarily gynecological in nature. Malignant ovarian tumours are still diagnosed at a very late stage. Ovarian cancer still a silent killer. A good history, detailed physical examination and investigations like USG, do help to come to an accurate diagnosis, but final diagnosis depends on histopathology.

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