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A Prospective hospital based observational assessment of patient with ovarian malignancies

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Abstract

Aim: To analyze the clinical presentation and histopathological types of ovarian malignancies.
Material and methods: A Prospective hospital based observational study was conducted in the Department of Obstetrics and Gynaecology at VIMS, Dahanu for the period of 1.5 years. Total 100 cases of ovarian tumours were included in this study. The tumours were cut and allowed to fix in 10% formalin for 24-48 hours. After formalin fixation, multiple bits were taken for histopathological examination. The blocks were cut at 3-5 microns thickness and stained with Haematoxylin and Eosin. Detailed microscopic examination of the tumour was done.
Results: Out of 100 cases of ovarian tumours, 71 were benign, 6 were tumours of low malignant potential and 23 were malignant. The youngest patient was 12 months and the oldest was 67 years forming a range of 18 months to 67 years. Highest incidence of ovarian tumour was noted in the 40-50years 38cases out of 100 cases accounting for 38%. Highest incidence of benign ovarian tumour was noted in 30-40 years 26 cases out of 71 accounting for 36.62%. Highest incidence of malignant tumour was noted in the 40-50years 12 out of 23 cases accounting for 52.17%. 37% of the patients complained of dull aching lower abdominal pain, 24% complained of abdominal mass and 6% of the patients gave history of menstrual disturbance like menorrhagia. Urinary disturbances were found in 5% patients with tumours. Out of 100 patients 9 patients were not married and all were below twenty years of age. Among married, 83were parous and remaining were 8 nulliparous. Out of 100 cases of ovarian tumors, 29 were associated with appendicitis and 14 were associated with uterovaginal prolapse.
Conclusion: The ovarian tumors manifest a complex and varied spectrum of clinical, morphological and pathological features. Correlating the clinical parameters and categorizing the tumors according to the WHO classification help us in coming to an early diagnosis, management and hence in the prognosis of ovarian tumors.

Keywords: Ovarian tumor, benign, borderline, malignant, who classification, clinico-pathological correlation

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Introduction

Ovarian cancer is the sixth most prevalent form of the disease that affects women throughout the globe, and it is the second most common reason why women get cancer in their reproductive organs [1-4]. Indian trend study showed a consistent rise in the age-standardized incidence rate of ovarian cancer, which ranges from 0.26 percent to 2.44 percent per year in various region registries. This rise may be attributed to a number of factors, including increased awareness and earlier detection. Ovaries, being an organ concerned with offspring, give birth to a complex array of cancers that vary in appearance, structure, and histology. These differences may be seen in the tumours themselves. Ovaries have a distinctive structure and physiology, which undergo ongoing cyclical changes from adolescence all the way to menopause. These modifications give birth to a number of cells that may differentiate into a variety of different types. Each of these factors may contribute to the development of tumours. Ovarian tumours have been appropriately classified as a spectrum of disorders rather than a single entity due to this reason. In terms of gynecologic cancers, ovarian cancer is the condition that results in the most deaths. After carcinoma of the cervix and endometrial cancer, the incidence of ovarian cancer is the third most common kind of cancer that affects women's reproductive organs.

The ovarian neoplasm presents a challenging dilemma for both the pathologist and the gynaecologist because of its complicated nature, unexpected activity, and uncertain prognosis. It is also quite difficult for the patient to notice the issue due to the stealthy manner in which the sickness begins to manifest itself [5].

Therefore, by the time the patient presents themselves to the physician with symptoms, the illness has already spread to several locations and metastasized in the majority of the cases.

Because symptoms don't appear until the disease has progressed to an advanced stage, when the likelihood of a cure is low, ovarian carcinoma is sometimes referred to as the "silent killer." The clinical spectrum, on the other hand, is rather variable, ranging from a great prognosis and a high possibility of cure to fast advancement and a dismal prognosis. This variety is most likely due to differences in the tumor's biological features.

Patients detected with the illness at an early stage have a survival rate that exceeds 90 percent, but the majority of cases are diagnosed late, leading to an overall survival rate of just 45 percent after five years [5, 6].

The aims and objectives of this study are to analyse the demographic pattern and the clinical presentation of the patient with ovarian tumours, to study the various histopathological types of ovarian tumours, and to study the frequency of benign and malignant tumours in our population.

Material and methods

A Prospective study was conducted in the Department of obstetrics and gynaecology at VIMS Dahanu for the period 1.5 years, after taking the approval of the protocol review committee and institutional ethics committee. Total 100 cases of ovarian tumours were included in this study.

Methodology

Clinical details like age, obstetric history, menstrual irregularities and other constitutional symptoms were collected in the proforma. The specimen, gross features such as size, shape, colour, external appearance, findings on cut section and contents were recorded. Then the tumours were cut at various levels depending on the individual cases and they were allowed to fix in 10% formalin for 24-48 hours. After formalin fixation, multiple bits were taken from

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representative areas of tumours and the accompanying tissues. They were processed for histopathological examination and paraffin blocks were made. The blocks were cut at 3-5 microns thickness and stained with Haematoxylin and Eosin.
Detailed microscopic examination of the tumour was done to arrive at a histopathological diagnosis following the WHO classification of the ovarian tumours.

Results

Out of 100 cases of ovarian tumours, 71 were benign, 6 were tumours of low malignant potential and 23 were malignant. (Table 1)
In the present study, the youngest patient was 12 months and the oldest was 67 years forming a range of 18 months to 67 years. Highest incidence of ovarian tumour was noted in the 40-50years 38cases out of 100 cases accounting for 38%. Highest incidence of benign ovarian tumour was noted in 30-40years 26 cases out of 71 accounting for 36.62%. Highest incidence of malignant tumour was noted in the 40-50years. 12 out of 23 cases accounting for 52.17% (Table 2).The distribution of symptoms is varied. 37% of the patients complained of dull aching lower abdominal pain, 24% complained of abdominal mass and 6% of the patients gave history of menstrual disturbance like menorrhagia. Urinary disturbances was y 5% patients with tumours. (Table 3). Out of 100 patients 9 patients were not married and all were below twenty years of age. Among married, 83were parous and remaining were 8 nulliparous. (Table 4). Out of 100 cases of ovarian tumors, 29 were associated with appendicitis and 14 were associated with uterovaginal prolapse. (Table 5). The surface epithelial tumours were the commonest tumours accounting for 64%, germ cell tumours were 28% of cases and sex cord stromal tumours formed 6% and metastatic tumour 2%. The tumours were classified according to the WHO histological classification of the ovarian tumours and the incidence of different histological types noted. (Table 6) Left sided tumours of ovary (52%) were more common than right sided tumours (44%). 4 cases were bilateral out of which 2 were borderline and 2 malignant.
The largest tumour (mucinous cystadenoma) in the present study measure 35x25x29cm in size and weighed 11.7 kg while the smallest tumour (serous cystadenoma) was 3x2.5x1cm in size and weighed 65gms.

Table 1: Distribution of ovarian tumours

Type of tumour	No. of cases	%
Benign tumour	71	71%
Borderline tumour	6	6%
Malignant tumour	23	23%
Total	100	100%

Table 2: Age group distribution of benign, borderline and malignant ovarian tumours

Age	Benign	Borderline	Malignant	Total	Percentage
Below 20years	4	-	-	4	5%
20-30	11	-	2	13	13%
30-40	26	-	5	31	31%
40-50	20	6	12	38	38%
50-60	5	-	4	9	9%
Above 60	5	-	-	5	10%
Total	71	6	23	100	100%

ISSN 2515-8260 Volume 09, Issue 02, 2022

Table 3: Symptoms of ovarian tumours

Clinical presentation	No. of cases in Benign tumours	No. of cases in Borderline tumours	No. of cases in Malignant tumours	Percentage
Pain abdomen	30	3	4	37%
Mass per abdomen	18	1	5	24%
Pain abdomen with mass	5	-	4	9%
Menstrual disturbance	4	-	2	6%
Urinary disturbances	2	-	3	5%
Constitutional symptoms	4	-	1	5%
White discharge per vagina	2	-	2	4%

Table 4: Distribution of ovarian tumours in parous women

Type of tumours	Unmarried	Married	
		Nulliparous	Parous
Benign	5	8	60
LMP	0	0	6
Malignant	4	0	17
Total	9	8	83

Table 5: Conditions associated with ovarian tumors

Associated conditions	No. of cases=54
Utero Vaginal prolapse	14
Leiomyoma	7
Appendicitis	29
Calculus cholecystitis	2
Pregnancy	2

Table 6: Incidence of various histological types of the ovarian tumours

Types of Tumour	No. of cases	Percentage
I. Common Epithelial tumours		
A. Serous tumours	64	64%
a) Benign	36	36%
b) Low Borderline malignancy	2	2%
c) Malignant	6	6%
B. Mucinous tumours		
a) Benign	8	8%
b) LBM	2	2%
c) Malignant	4	4%
C) Mixed epithelial tumours Benign	-	
Malignant	2	2%
D) Endometrioid carcinoma	4	4%
E) Transitional cell carcinoma	-	-
F) Undifferentiated Carcinoma		
II) Sexcord stromal tumours	6	6%
A) Granulosa cell tumour	2	2%
B) Fibroma/thecoma	4	4%
III) Germ cell tumours	28	28%

A) Dysgerminoma	2	2%
B) Endodermal Sinus tumour	2	2%
C) Embryonal carcinoma	-	-
D) Teratoma, mature cystic	23	23%
E) Immature teratoma	1	1%
IV) Metastatic tumours	2	2
Krukenbergtumour	2	2

Discussion

It is possible for ovarian or tubal neoplasms to originate in stem cells, which normally give birth to the surface epithelium, the epithelium of the fallopian tubes, germ cells or the stromal cells of the sex cord. There is a huge amount of variation across the many forms of ovarian tumours in terms of their frequency, clinical presentation and course of progression.

It has been reported that the results of a physical examination, imaging procedures such as pelvic ultrasound, and laboratory testing such as serum biomarkers and immunological tests may be of some use in determining the type of the condition. Before surgery, it is almost never feasible to make an accurate diagnosis of the kind of ovarian tumour that is present. Surgical assessment gives a definite histologic diagnosis. It is necessary to do a microscopic examination and diagnosis before continuing with the care of the tumour [7].

In the current research, there were a total of 100 ovarian tumours. Seventy-one percent of them were benign, six percent were borderline, and twenty-three percent were malignant. Among the different histopathological patterns the surface epithelial tumours formed the largest group of tumour (64 cases, 64%) followed by the germ cell tumour (28cases, 28%), sex cord stromal tumours of (6cases, 6%) and metastatic tumours (2%). Nalini *et al*. [8] and Mondal *et al*. [9] observed that the epithelial tumours were the most frequent tumour followed by germ cell tumours and sex cord tumours. The commonest epithelial tumours were serous cystadenoma (44 cases) and the commonest germ cell tumour was benign cystic teratoma (23cases) in the present series. Similar observations were made by Mondal SK *et al*. [9] and Nalini *et al*. [8] Among the benign lesions, serous cystadenoma was the commonest (36 cases, 36%) followed by mature cystic teratoma (23 cases, 23%) in the present study. This was similar to the observations of Di Bonito *et al*. [10], Nalini *et al*. and Mondak SK *et al*. But Ahmed *et al*., [11] in his paper, stated that mature cystic teratoma (35.17%) was the commonest benign tumours followed by surface epithelial tumours. The commonest malignant tumours in the present study is serous cystadenocarcinoma (6%) and the next commonest being Mucinous cystadenocarcinoma and endometrioid carcinoma each constituting 4%, this is followed by Granulosa cell tumour 2% and Metastatic tumour 2%. In a study from eastern India, the same was found to be 5% of all malignant tumors [12]. 4 cases were bilateral out of which 2 were borderline and 2 malignantin the present study. Similar findings have been reported by Couta F *et al*. [13] whereas Ramachandran G *et al*. [14] Gupta SC *et al*. [15] and Kapas MM *et al*. [16] reported more number of bilateral tumours compared to the present study. Bilaterality in malignancies implies spread to the opposite ovary as part of extension throughout the pelvis and abdomen as seen in advanced cases. In the present study, there were Left sided tumours of ovary (52%) were more common than right sided tumours (44%) the remaining 4% were bilateral. Ramachandran G *et al*. [14] found 46.04% of all ovarian tumours on the right side and 38.5% on the left side. The rest were bilateral.

The youngest age is a 12 months old child with mature cystic teratoma. Similarly Pilli *et al*. [17] reported the youngest patient of 8 months. In the present study highest incidence of ovarian tumour was noted in the 40-50 years 38 cases out of 100 cases accounting for 38%. Highest incidence of benign ovarian tumour was noted in 30-40 years 26 cases out of 71 accounting for 36.62%. Highest incidence of malignant tumour was noted in the 40-50years. 12 out of 23 cases accounting for 52.17%. The present findings concurred with those of

Ashley DJB (1990) and Herbst A (1994). [18] Similar observations were also made by Ramachandran G *et al*. and Mondal SK *et al*. In 2006 Gunnar *et al*. did a prospective study on reproductive factors and risk of ovarian cancer in 6565 females in Norway and found that highest risk of ovarian tumours was observed among nulliparous women. The risk decreased significantly with increasing parity [19]. In 2006 Marine *et al*. did a study on the incidence of ovarian cancer on 87,929 grand multiparous women and concluded that the risk of ovarian cancer was low in all grand multiparous women, no matter how many children and at which age they delivered or contracted cancer. Out of 100 cases in the present study, 83 were multiparous, 8 were nulliparous of whom 9 were unmarried.

The commonest clinical features in the present study were 37% of the patients complained of dull aching lower abdominal pain, 24% complained of abdominal mass and 6% of the patients gave history of menstrual disturbance like menorrhagia. Urinary disturbances were 5% patients with tumours. Present study concorded with Pilli *et al*. [17] where abdominal pain was the commonest symptoms. But cases presenting as mass per abdomen were less in the present study when compared to other studies. The largest tumours encountered in the present study were mucinous cystadenoma measuring 35x25x29cm in size. Similar observations were made in Tyagi *et al*. [20] and Gupta *et al*. who reported a mucinous cystadenoma with maximum diameter of 44.5cms. Majority of the cases were uni/multilocular with a cystic appearance. The tumours with mixed solid and cystic areas and completely solid tumours were mostly malignancies. Similar observations were made by Gupta SC *et al*. [11] and Maheshwari *et al*. [21]

Conclusion

Ovarian tumours may exhibit a wide variety of clinical, morphological, and pathological characteristics, making them a complicated disease.

As a result of correlating the clinical characteristics and classifying the tumours in accordance with the WHO classification, we are able to arrive at an early diagnosis, which helps in the treatment of the disease and improves the prognosis of ovarian tumours.

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