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Original Research Article

Assessing the Clinical Presentation and Histo-Pathological Distribution of Ovarian Neoplas/ms: An Observational Study

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Abstract

Aim: The aim of the present study was to find the prevalence and determine the clinical presentation and histo-pathological distribution of ovarian neoplasms.

Methods: The observational study was carried out in the Department of Pathology, Narayan medical college and hospital, Sasaram, Bihar, India for the period of one year. 100 cases of ovarian tumours received in the Department of Pathology. The specimen was obtained from the Department of Obstetrics and Gynaecology. Study subjects consisted of admitted patients in gynecology ward; diagnosed as case of ovarian tumor on basis of clinical and imaging findings and confirmed by laparotomy/laparoscopy findings and histopathology.

Results: Out of 100 cases of ovarian tumours, 72 were benign, 4 were borderline tumours of low malignant potential and 24 were malignant. In the present study, the youngest patient was 16 months and the oldest was 76 years forming a ranging from 16 months to 76 years. Highest incidence of ovarian tumour was noted in the fourth decade i.e. 34 cases out of 100 cases accounting for 34%. Highest incidence of benign ovarian tumour was noted in third decade i.e. 28 cases out of 72. Highest incidence of malignant tumour was noted in the fourth decade i.e. 11 out of 24 cases. 36% of the patients complained of dull aching lower abdominal pain, 28% complained of abdominal mass and 7% of the patients gave history of menstrual disturbance like menorrhagia. The cases had no specific relation to parity.

Conclusion: The correct histopathological diagnosis of ovarian tumor is of prime importance in view of their behavioural predictability, clinical correlation and the proper management of patient.

Keywords: Benign, Germ cell, Histopathological type, Malignant, Ovarian neoplasm, Surface epithelial

Introduction

Ovary, the Female gonad is very complex in its embryology and histology. Due to complex histology, the ovarian tumors have different cell origins, complex nature and varied clinical presentation. [1] They present at any age but 90% of benign tumors are seen in childbearing age. [2] Benign tumors are cystic in nature and presence of solid components increases suspicion of malignancy. The potential malignant behaviour of some ovarian tumors causes dilemma with respect to conservative/definitive surgery. Malignant ovarian tumors comprise of 3.6% of all cancers in women. It is the seventh most common cancer among women (age standardised incidence rate being 6.1/100,000) and fifth leading cause of cancer deaths (4.3%) globally with age standardised mortality rate being 3.8/100,00. [3] In developed countries, more than 90% of malignant ovarian tumors are epithelial in origin, 5%-6% of tumors constitute sex cord-stromal tumors, and 2%-3% are germ cell tumors. [4] The common epithelial ovarian cancers (EOCs) include high-grade serous (70%), endometrioid (10%), clear cell (10%), mucinous (3%), and low-grade serous carcinomas (<5%).4 Ovarian tumors are not detected early as they occupy available space in pelvis and abdomen for expansion. They seek attention after achieving big size. [5] In malignant

tumors, the symptoms are vague, and therefore patients unfortunately present in late stages. [6]

Ovarian cancer is the sixth most common cancer among women and is also the seventh leading cause of cancer deaths among women worldwide. [7,8] Ovaries are the third leading site of cancer among women trailing behind cervical and breast cancer according to the Indian cancer registries. [7,9] 90% of all ovarian carcinomas and two thirds of all ovarian neoplasms are surface epithelial tumours. These tumours assume a wide array of histological pattern making it an interesting topic for study. Knowledge of the type of tumour and differentiation helps in judicious management of the patient in terms of appropriate treatment and follow-up. [10-12]

About 80% of ovarian neoplasms are benign and these occur mostly in young women between the ages of 20. and 45 years. The malignant tumours are more common in older women between the ages of 40 and 65 years. [13] Tumors of the ovary are a common neoplasm in women. [14] The most common lesions encountered in the ovary are functional or benign cysts and tumors. [15] Ovarian cancer is the sixth most common female cancer and is seen predominantly after the third decade of life. [16] Ovarian neoplasms are usually detected at a late stage and are large in size, because of their presentation with mild symptoms. [17] There is no reliable means for early detection except for accurate histopathological diagnosis that facilitates the effective treatment of ovarian tumours. [18]

The aim of the present study was to find the prevalence and determine the clinical presentation and histo-pathological distribution of ovarian neoplasms.

Materials and Methods

The observational study was carried out in the Department of Pathology, Narayan medical college and hospital, Sasaram, Bihar, India for the period of one year. 100 cases of ovarian tumours received in the Department of Pathology. The specimen was obtained from the Department of Obstetrics and Gynaecology. Study subjects consisted of admitted patients in gynecology ward; diagnosed as case of ovarian tumor on basis of clinical and imaging findings and confirmed by laparotomy/laparoscopy findings and histopathology.

Inclusion and exclusion criteria

Inclusion criteria included all the ovarian biopsies and ovarian lesions that were radiologically assayed as either neoplastic or non-neoplastic and received either as a single lesion or as a total hysterectomy. Normal ovaries were excluded from the study. Pelvic masses other than ovarian tumor on histopathology were excluded from the study.

The clinical data specially included was physical symptoms, examination findings. Approval of Institutional Ethics committee was taken. Study data included age at diagnosis, obstetric history, menstrual history, personal and family history, and presenting complaints. Imaging studies included USG in all cases and CECT/MRI wherever indicated. Laparotomy/laparoscopy findings and treatment was noted. Histopathology details were noted down and classification was done according to International Classification of diseases (WHO classification 2020). Data was tabulated using Microsoft excel and expressed in terms of percentage and means with standard deviation.

Results

Table 1: Distribution of ovarian tumours

Type of tumours	No. ofcases	%
Benign tumour	72	72
Borderline tumour	4	4
Malignant tumour	24	24
Total	100	100

Out of 100 cases of ovarian tumours, 72 were benign, 4 were tumours of low malignant potential and 24 were malignant.

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

Age in years	Benign	Borderline	Malignant	Total	%
0-10	2	-	2	4	4
11-20	2	-	-	2	2
21-30	13	-	2	15	15
31-40	28	-	4	32	32
41-50	19	4	11	34	34
51-60	3	-	3	6	6
61-70	5	-	-	5	5
71-80	-	-	2	2	2
Total	72	4	24	100	100

In the present study, the youngest patient was 16 months and the oldest was 76 years forming a ranging from 16 months to 76 years. Highest incidence of ovarian tumour was noted in the fourth decade i.e. 34 cases out of 100 cases accounting for 34%. Highest incidence of benign ovarian tumour was noted in third decade i.e. 28 cases out of 72. Highest incidence of malignant tumour was noted in the fourth decade i.e. 11 out of 24 cases.

Table 3: Clinical features

Clinical presentation	No. of casesin Benign tumours	No. of cases in Borderline tumours	No. of cases in Malignant tumours	%
Pain abdomen	28	3	5	36
Mass per abdomen	22	1	5	28
Pain abdomen with mass	8	-	4	12
Menstrual disturbance	4	-	3	7
Urinary disturbances	2	-	4	6
Constitutional symptoms	4	-	2	6
White discharge per vagina	4	-	1	5
Total	72	4	24	100

36% of the patients complained of dull aching lower abdominal pain, 28% complained of abdominal mass and 7% of the patients gave history of menstrual disturbance like menorrhagia.

Table 4: Para wise distribution of ovarian tumors

Parity	Benign	Borderline	Malignant	Total
0	17	-	3	20 (20%)
1	12	-	6	18 (18%)
2	22	1	4	27 (27%)
3	13	2	5	20 (20%)
4	5	1	4	10 (10%)
>4	3	-	2	5 (5%)
Total	72	4	24	100

The cases had no specific relation to parity.

Table 5: Incidence of various histological types of the ovarian tumours

Types of Tumour	No. of cases	%
I. Common Epithelial tumours		
A. Serous tumours	45	45
a) Benign	37	37
b) Borderline	2	2
c) Malignant	6	6
B. Mucinous tumours		
a) Benign	8	8
b) Borderline	1	1
c) Malignant	5	5
C) Mixed epithelial tumours Benign	-	-
Benign	-	-
Malignant	1	1
D) Endometrioid carcinoma	5	5
E) Transitional cell carcinoma	-	-
F) Undifferentiated Carcinoma		
II) Sexcord stromal tumours	10	10
A) Granulosa cell tumour	4	4
B) Fibroma / thecoma	6	6
III) Germ cell tumours	23	23
A) Dysgerminoma	1	1
B) Endodermal Sinus tumour	1	1
C) Embryonal carcinoma	-	-
D) Teratoma, mature cystic	20	20
E) Immature teratoma	1	1
IV) Metastatic tumours		
Krukenberg tumour	2	2

The tumours were classified according to the WHO histological classification of the ovarian tumours and the incidence of different histological types noted.

Discussion

An adnexal mass (mass of the ovary, fallopian tube, or surrounding connective tissues) is a common gynaecologic problem. In the United States, it is estimated that there is a 5 to 10 percent lifetime risk for women undergoing surgery for a suspected ovarian neoplasm. [19] Ovarian cancer is one of the leading cancer in women (affecting about 1/70) and one of the leading cause of death from gynaecological cancer. It is the fifth leading cause of cancer fatalities in women [20] after lung cancer, breast cancer, colon cancers and cervical cancer. Ovarian neoplasms remain asymptomatic until massive ovarian enlargement cause compression of pelvic structures, ascites, abdominal distension and distant metastasis. The ovary not only gives rise to a wide variety of malignancies but is also a common site for metastases from many other organs.

Out of 100 cases of ovarian tumours, 72 were benign, 4 were tumours of low malignant potentialor borderline tumors and 24 were malignant. The proportion of ovarian tumors among gynaecological admissions in our study was 10.85 % while Yogambal et al [21], reported 5.4% (402/7492) cases to be of ovarian tumors among hospital admissions. In the present study, the youngest patient was 16 months and the oldest was 76 years forming a range of 16 months to 76 years. Similarly Pilli et al [22] reported the youngest patient of 8 months. Highest incidence of ovarian tumour was noted in the fourth decade i.e. 34 cases out of 100 cases accounting for 34%. Highest incidence of benign ovarian tumour was noted in third decade i.e. 28 cases out of 72. Highest incidence of malignant tumour was noted in the fourth decade i.e. 11 out of 24 cases accounting. The present findings concurred with those of Ashley DJB(1990) and Herbst A (1994). [23] The cases had no specific relation to parity. 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. [24] 36% of the patients complained of dull aching lower abdominal pain, 28% complained of abdominal mass and 7% of the patients gave history of menstrual disturbance like menorrhagia. Present study concorded with Pilli et al [22] 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.

Pectaides D et al [25] studied 34 patients with adult GCT with median age of 51 years and median size of tumor 10 cm. Nocito AL et al [26] studied 50 cases of the coma and age ranged from 21 to 77 years with median age of 57.5 years. In our study, one case of the coma was seen of age 60 years presented with bleeding per vagina. Zekioglu et al [27] and Mathur SR et al [28] studied sclerosing stromal tumors of the ovary with the age of patients ranged from 16 to 54 years and the tumor size ranged from 6-21 cm. Akman L et al [29] studied 27 cases of Sertoli leydig cell tumors, median age was 45 years and maximum patients had stage I disease.

Knowledge of morphology and age-specific characteristics can help refine the diagnosis. Typically, ovarian masses consist of functional and pathological lesions. [30] Given the location of these paired organs and the mildness of symptoms associated with lesions arising in them, these lesions usually attain a fairly large size before they are detected and removed. [31,32] Diagnosis of ovarian tumors is challenged by diverse pathologic conditions that can affect the ovaries and present with similar clinical and radiologic manifestations. The diagnosis can be refined by the knowledge of morphology and age-specific characteristics. [33]

Conclusion

The correct histopathological diagnosis of ovarian tumor is of prime importance in view of their behavioural predictability, clinical correlation and the proper management of patient. The ovarian tumors manifest a wide range of clinical, morphological and histological features. Benign ovarian tumors form a very important clinical entity for a gynaecologist. Differentiation between a benign and malignant tumor is many a times difficult and Histopathological study remains the gold standard for the proper classification and management of ovarian neoplasm and there is a vast scope for reaching specific and reliable diagnosis of difficult dilemmatic cases of ovarian tumours, by which the therapeutic and prognostic implications could be modified.

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