e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2022; 14(12); 489-494

Original Research Article

A Hospital Based Prospective Clinic Pathological Assessment of Ovarian Tumor

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Received: 23-09-2022 / Revised: 11-10-2022 / Accepted: 13-11-2022
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Conflict of interest: Nil

Abstract

Aim: The objective of the study was to study the correlation ovarian masses regarding their clinical presentation investigation and histopathological report.

Methods: Prospective hospital based study was done on all the women who presented with lump and/or pain or menstrual problem attending Obstetrics and Gynaecology OPD of Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India for one year and 100 patients were included in the study.

Results: The mean age of presentation was 40.5 years (range, 21–60 years).40 patients belong to the age group of 40 years or older and 60 patients were less than 40 years of age. Table 1 showing distribution to tumours according to consistency (by USG) and relation with Malignancy.73% were cystic, 14% were solid and 13% were mixed type of tumours. Among there 86% were benign, 2% were borderline and 12% were malignant. There is significant association between USG finding and consistency of tumour. Maximum number (45%) patients had TAH with BSO, 20% had unilateral cystectomy, 14% had TAH with BSO and chemotherapy, 0.97% had debulking and 1% had BSO after in past hysterectomy. There is significant association between USG finding and surgery.

Conclusion: Benign tumors are common than malignant ovarian tumors in all age groups. Early diagnosis and management help in better prognosis.

Keywords: Benign, Malignant tumors, Ovary, Ultrasonography

Introduction

Ovarian cancer constitutes sixth most common cancer among women worldwide and the seventh leading cause of cancer deaths. Ovary is the most important organ as it is concerned with progeny. [1] It can give rise to complex variety of tumors, varying in structure, function and histogenesis. It is well established that neoplastic conditions of ovaries form a complicating and baffling subject in the history of oncology. The complex anatomy of ovary and its peculiar physiology with constant cyclical changes from puberty to menopause gives rise to a number of cells with various differentiations.

Ovary being a complex and unique organ has been described to be involved by wide varieties of neoplasms. This has been due to the presence of many cell types in this organ under normal conditions, including

some cells which are multipotent to totipotent. No organ of the body except ovary gives rise to such a galaxy of neoplasms. Ovarian tumours have been rightly termed as complex wide spectrum of diseases rather than a single entity. [2] In general, benign ovarian tumours are more common than malignant and account for almost 80% of all ovarian neoplasm. Ovary is a common site of primary malignancy, yet metastasis lesions may occur in ovary. [3] Among Indian women, ovary is the third most common site of primary malignancies of female genital tract. Benign neoplasms are more common in age group of 20 to 45 years of age while malignant tumours are more common in women of age group 40 to 65 years. [4] Various risk factors responsible for ovarian cancers are nulliparity, family history, and heritable mutation. Generally, ovarian tumour occurs in perimenopausal and postmenopausal women and are infrequent in children. [5]

Early diagnosis of ovarian cancer is important to decrease morbidity and mortality associated with it. Histopathological examination of the biopsy material is the mainstay of diagnosis which determines the prognosis and behavior of neoplasm. The WHO classification of ovarian tumour is based on their tissue of origin and it reflects the embryogenesis of this complex organ. The complex nature, unpredictable behaviour and prognosis make ovarian tumour a difficult problem for the gynaecologist. The histogenesis of many tumours is interrelated and accurate histopathological diagnosis is needed for affective treatment. [6]

However, the clinical spectrum varies widely, from an excellent prognosis and high likelihood of cure to rapid progression and poor prognosis, most probably reflecting variation in the tumor, biological properties. The survival rate of patients with early stage disease approaches 90%, but most cases are diagnosed late with an overall 5-year survival rate 45%. [7]

The objective of the study was to study the correlation ovarian masses regarding their clinical presentation investigation and histo-pathological report.

Methods

Prospective hospital based study was done on all the women who presented with lump and/or pain or menstrual problem attending Obstetrics and Gynaecology OPD of Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India and 100 patients were included in the study.

Inclusion criteria

All the patient of ovarian tumor attending Obstetrics and Gynaecology Department ANMMCH having age >18, patients who have signed written consent and patients who will undergo USG, tumour marker, HPE and other investigations like MRI, CT etc. were included in the study.

Exclusion criteria

Any pelvic masse other than ovarian tumour, and pregnant women were excluded from the study.

Method

Examination was performed including general physical examination, detailed systemic examination and detailed gynecological examination including per abdomen, per speculum and bimanual per vaginum examination was performed and provisional diagnosis was made. Routine investigation including CBC, BT, CT, PT/INR, blood group, TSH, blood sugar level, serum creatinine, urine complete was done. Tumour markers including CA-125, CEA was done and LDH, AFP, LFT was performed according to case. Ultrasound examination by transabdominal or transvaginal method was done. In sonography site, size, laterality of tumour noted, consistency of mass (cytic, solid, mixed echogenic) locularity, hemorrhage,

presence of ascites and evidence of metastasis were noted. In all cases we have decided the surgery first as all tumour cases were not in advance stage. Final diagnosis was confirmed by histopathological report. In the last diagnosis by clinical examination by investigations, surgery and histopathological report were correlated.

Statistical analysis

The statistical analysis was performed using IBM statistical for social sciences (SPSS).

Results

Table 1: Age distribution and distribution of tumours according to consistency (by USG) and relation with malignancy

Age in years	Benign	Borderline	Malignant	Total	P value
	N%	N%	N%	N%	
21-30	30 (42.86%)	-	4 (16%)	34 (34%)	0.0001
31-40	20 (28.58%)	-	4 (16%)	26 (26%)	
41-50	12 (17.14%)	2 (40%)	5 (20%)	17 (17%)	
51-60	8 (11.42%)	3 (60%)	12 (48%)	23 (23%)	
Total	70	5	25	100 (100%)	
Consistency of tumors					
Cystic	72	0	1	73 (73%)	<0.001
Mixed	6	2	6	14 (14%)	
Solid	8	0	5	13 (13%)	
Total	86	2	12	100 (100%)	

The mean age of presentation was 40.5 years (range, 21–60 years).40 patients belong to the age group of 40 years or older and 60 patients were less than 40 years of age. Table 1 showing distribution to tumours according to consistency (by USG) and relation with Malignancy.73% were cystic, 14% were solid and 13% were mixed type of tumours. Among there 86% were benign, 2% were borderline and 12% were malignant. There is significant association between USG finding and consistency of tumour.

Table 2: Distribution according to surgery

Surgery	Benign	Borderline	Malignant	Total	P value
BSO (past hysterectomy)	1 (1.17)	0	1 (8.33)	2 (2%)	<0.001
Unilateral slpingoophorectomy	13 (15.12)	1 (50)	0	14 (14%)	
Unilateral Cystectomy	20 (23.25)	0	0	20 (20%)	
Debulking	0	0	1 (8.33)	1 (1%)	
TAH+USO	4 (4.66)	0	0	4 (4%)	
TAH+BSO+ICO	6 (6.97)	1 (50)	7 (58.34)	14 (14%)	
TAH+BSO	42 (48.83)	0	3 (25)	45 (45%)	
Total	86	2	12	100	

Maximum number (45%) patients had TAH with BSO, 20% had unilateral cystectomy, 14% had TAH with BSO and chemotherapy, 0.97% had debulking and 1% had BSO after in past hysterectomy. There is significant association between USG finding and surgery.

Table 3: Distribution according to various histological types of tumour and distribution of malignancy in them

History	Benign	Borderline	Malignant	Total	P value
Epithelial Tumour Endometriotic	2 (2.32)	0	0	2 (2)	<0.013
Mucinous	18 (20.93)	1 (50)	3 (25)	22 (22)	
Serous	55 (63.95)	1 (50)	6 (50)	62 (62)	
Combined	3 (3.48)	0	0	3 (3)	
Germ cell tumour	6 (6.97)	0	0	6 (6)	
Pseudomyxoma Peritonei	0	0	1 (8.34)	1 (1)	
Sex cord Stroma Tumour	2 (2.32)	0	0	2 (2)	
Clear cell carcinoma	0	0	1 (8.33)	1 (1)	
Metastatic carcinoma	0	0	1 (8.33)	1 (1)	
Total	86	2	12	100	

Table 3 showing distribution according to various histological types of tumour and distribution of malignancy in them. Maximum number of patients 86% were benign epithelial tumour mainly serous cystic 62%, 22% were mucinous tumour. Maximum number of malignancy 8.73% were in the epithelial tumour. The rest 3% were in clear cell carcinoma, pseudomyxoma peritoni and metastatic carcinoma. There is significant association between USG findings and history of tumour.

Table 4: Correlation of diagnosis of malignancy by ultrasonography and histopathology report

USG as a screening	True	False
Positive	86	4
Negative	10	0

Table 4 showing correlation of diagnosis of malignancy by ultrasonography and histopathology. Sensitivity (100%), specificity (73.3 %) positive predictive value (95.56%) and negative predictive value (100%).

Discussion

Ovarian cancer is the leading cause of death among gynecologic malignancies. It is a well-established fact that neoplastic conditions of ovary form a complicating and baffling subject in the history of oncology. The neoplasm arising from it inherits a wide spectrum of histogenetic background much more varied from any other organ. Surface epithelial tumors of the ovary are the most frequently encountered tumors. Epithelial origin of ovarian tumors is found in more than 90% of ovarian tumors.1 The terminology of borderline ovarian tumors (BOT) was first described by Taylor in 1929 which was then classified as 'low malignant potential tumors'. They were then subsequently separated from carcinomas and classified as 'borderline tumors' by WHO in 2003. [8]

Ovarian cancer may occur at any age. In our study the age range of our subjects was between 20 years and 60 years. The mean age observed in the present study of 40.5 years in comparable with various other studies conducted in India. In our study, the peak incidence of benign tumor and malignant ovarian tumors were between 41- 50 years and 51-60 years respectively. This differs from other western data [9,10] but correlates with most other studies conducted in India. [11-13] This difference in age predominance is mainly due the racial difference, dietary and life style factors. [14]

In the present study consistency was checked using USG. In benign tumour most of the patients 73% patients had cystic consistency of tumour. Similarly, in malignant tumours cases, most of the tumor was cystic inconsistency. Rest of the tumours were solid (8 in benign and 5 in the malignant tumour) or mixed type (6.82% in benign and 53.84 % in malignant tumours) consistency. In the study by Kanthikar et al in the benign tumour 66.7% was cystic 13.3% was solid while 28.8% were mixed variety. Whereas in malignant tumours there was no cystic tumor, 42.8% was solid and 55% were mixed variety whereas in the study by Phukan et al, in benign tumor 82.2% was cystic and 17.8% were mixed variety while in malignant tumour 63.6% was solid 27.3% were mixed and 9.1% work cystic. [5,15] According the above finding commonest consistency was in cystic in benign tumour while in malignant tumours 6 were mix and 5 was solid which is little variable to others.

In benign tumour (86 %) most common variety was serous (63.95%) followed by the mucinous tumour (20.93%) which are epithelial tumour. In malignant tumour, most common variety in serous (50%) followed by mucinous (25%) similarly in the study by Prakash et al serous cystadenomas were the most common lesion diagnosed (80 out of 124:64.5% of benign neoplasia, 62.5% of all neoplastic lesions). Mucinous cyst adenomas were the second most common benign neoplastic lesion diagnosed (30 out 0f 124:24.2%). [5] Similarly in the study Deeba et al in malignant tumour most common type was serous cyst Aden carcinoma (57.1%) followed by mucinous cyst adenocarcinoma (21.4 %). [5,16] In the study by Yogambal et al benign ovarian tumours showed that the commonest tumor was serous cystadenoma (21.4%) followed by mature cystic teratoma (19.9%) common malignant ovarian tumors were serous cyst adenocarcinoma (9.5%) and mucinous cyst adenocarcinoma (3.2%). [17]

There was a strong correlation between diagnosis of the ovarian tumors and the ultrasonography. By ultrasonography, sensitivity was 100%, specificity was 73.3% positive predictive value was 95.56% and negative predictive value was 100%. [18]

Conclusion

Benign tumors are common than malignant ovarian tumors in all age groups. Early diagnosis and management help in better prognosis. 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.

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