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Original Research Article

Clinico-pathological study of ovarian tumors at tertiary care hospital, Udaipur

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ABSTRACT

Background: Diagnosis of malignancy in ovarian tumour is always questionable clinically as well as by investigation. Ovarian tumour arise in any age group and any type of body tissue present in tumour like epithelial tissues, germ cells, embryonic cells due to varied histology of ovary and metastatic non ovarian tumours. Aim and objective of the study was to study the correlation ovarian masses regarding their clinical presentation investigation and histo-pathological report.

Methods: All the women who presented with lump and/or pain or menstrual problem attending Gynecology, Surgery and oncology OPD of GMCH, Udaipur. Our study design is prospective hospital based study. The statistical analysis was performed using IBM statistical for social sciences (SPSS).

Results: In our study, 85.43% were benign tumour and 12.67% were malignant tumour. Among this, 70.87% were cystic, 14.56% were solid and 14.56% were mixed tumours. Mostly they were epithelial tumours (85.43%). Main surgery was total hysterectomy with bilateral salpingoopherectomy. In malignant tumours 61.53% also had Chemotherapy and 0.97 % had debulking.

Conclusions: There is strong correlation of ultrasonography finding with histopathology report. Though clinically it was 55 % only. Specificity of the Ultrasonography was 73.33% but sensitivity was 100%. Positive predictive value was 95.65% and negative predictive value was 100%.

Keywords: Benign, Malignant tumors, Ovary, Ultrasonography

INTRODUCTION

Ovary is a main organ of reproduction but its tumour is always notorious. Ovarian tumours are complex tumours which are diagnosed very late due to asymptomatic initially. Diagnosis of malignancy in ovarian tumour is always questionable clinically as well as by investigation. Ovarian tumour arise in any age group and any type of body tissue present in tumour like epithelial tissues, germ cells, embryonic cells due to varied histology of ovary and metastatic non ovarian tumours. Ovarian malignancies are diagnosed late, because of non-specific symptoms initially like discomfort, bloating back pain or

urinary symptoms or mainly asymptomatic.¹ Symptoms appear in later stage of malignancy. Most ovarian tumors cannot be distinguished confidently on the basis of their clinical or gross characteristics alone.² Dilemma of differentiating a benign from a malignant tumour always exists by clinical examination. Imaging by USG though helps to locate origin size, consistency of tumour but diagnosis of malignancy in ovarian tumour by USG, CA125, MRI and other method is difficult. Our tertiary center has all facilities for diagnosing and treating ovarian tumours. Hence, this study has been to diagnosis to know incidence of ovarian tumours, mode of presentation and exact diagnosis by correlating various

diagnostic tools. In this study we correlated ovarian masses regarding their clinical presentation investigation and histo-pathological report.

Fonseca et al studied 30 patients with ovarian masses and observed that 50% were functional cysts, 46.6% were benign ovarian masses and 3.3% were borderline malignant. Thus, concluded that preparative diagnostic approach to a patient with ovarian mass includes careful history taking thorough clinical examination, ultrasound and tumour marker assays in selected cases. Conservative surgery should be the goal to preserve fertility in young patients with ovarian tumours.¹ Mohapatro et al conducted a study on clinipathological spectrum of ovarian tumours in a tertiary care center. In the study 96 patients had been studied. Out of them 59 (61.45%) cases were benign and 32 (33.33%) cases. Thus, they concluded that early diagnosis and prompt treatment can definitely reduce the mortality from ovarian tumour.²

METHODS

Prospective hospital based study was done on all the women who presented with lump and/or pain or menstrual problem attending Gynecology, Surgery and oncology OPD of Geetanjali Hospital, GMCH, Udaipur.

Inclusion criteria

All the patient of ovarian tumor attending gynecology, oncology and surgery Department at GMCH having age >18, patients who have signed written consent and patients who will undergo USG, tumour marker, HPR 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

In our study P/A examination 59 patients' mass was palpable, 98 cases mass was mobile, 09 also had ascites. IN P/V examination 44.66% complete mass was palpable while 55.33% only lower pole of mass palpable. 43.68% mass was mobile. Uterus was 85.43% normal in size and 14.56% atrophic size. Table 1 showing distribution to tumours according to consistency (by USG) and relation with Malignancy. 70.87% were cystic, 14.56% were solid and 14.56% were mixed type of tumours. Among there 85.43% were benign, 1.94% were borderline and 12.62% were malignant. There is significant association between USG finding and consistency of tumour.

Table 2 showing distribution according to surgery. Maximum number (43.68%) patients had TAH with BSO, 20.38% had unilateral cystectomy, 14.56% had TAH with BSO and chemotherapy, 0.97% had debulking and 1.94% had BSO after in past hysterectomy. There is significant association between USG finding and surgery. Table 3 showing distribution according to various histological types of tumour and distribution of malignancy in them. Maximum number of patients 85.43% were benign epithelial tumour mainly serous cystic 61.16%, 22.33% were mucinous tumour, 8.73% were epithelial tumour have malignant 5.82% were germ cell tumour 85.43% were have benign and 12.62% were malignant. Maximum number of malignancy 8.73% were in the epithelial tumour. Rest 3.88% were in clear cell carcinoma, pseudomyxoma peritoni and metastatic carcinoma. There is significant association between USG findings and history of tumour.

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

Consistency of Tumors	Benign	Borderline	Malignant	Total	Chi-square value	P value
Cystic	72 (81.8)	0	1 (7.69)	73 (70.87)	43.66	<0.001
Mix	6 (6.82)	2 (100)	7 (53.84)	15 (14.56)		
Solid	10 (11.36)	0	5 (38.46)	15 (14.56)		
Total	88	2	13	103		

Table 2: Distribution according to surgery.

Surgery	Benign	Borderline	Malignant	Total	Chi-square value	P value
BSO (past hysterectomy)	1 (1.13)	0	1 (7.69)	2 (1.94%)	45.47	<0.001
Unilateral salpingoophorectomy	14 (15.90)	1 (50)	0	15 (14.56%)		
Unilateral Cystectomy	21 (23.86)	0	0	21 (20.38%)		
Debulking	0	0	1 (7.69)	1 (0.97%)		
TAH+USO	4 (4.54)	0	0	4 (3.88)		
TAH+BSO+ICO	6 (6.81)	1 (50)	8 (61.53)	15 (14.56)		
TAH+BSO	42 (47.72)	0	3 (23.07)	45 (43.68)		
Total	88	2	13	103		

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

History	Benign	Borderline	Malignant	Total	Chi-square value	P value	
Epithelial Tumour	Endometriotic	2 (2.27)	0	2 (1.94%)	31.23	<0.013	
	Mucinous	19 (21.59)	1 (50)	3 (23.07)			23 (22.33)
	Serous	56 (63.63)	1 (50)	6 (46.15)			63 (61.16)
Combined	3 (3.40)	0	0	3 (2.91)			
Germ cell tumour	6 (6.81)	0	0	6 (5.82)			
Pseudomyxoma Peritonei	0	0	1 (7.69)	1 (0.97)			
Sex cord Stroma Tumour	2 (2.27)	0	0	2 (1.94)			
Clear cell carcinoma	0	0	1 (7.69)	1 (0.97)			
Metastatic carcinoma	0	0	2 (15.38)	2 (1.94)			
Total	88	2	13	103			

Table 4: Correlation of diagnosis of malignancy by ultrasonography and histopathology report (N=103).

USG as a screening	True	False
Positive	88	4
Negative	11	0

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

DISCUSSION

Distribution according to the consistency of tumour and USG finding

In the present study consistency was checked using USG. In benign tumour most of the patients 70.87% patients had cystic consistency of tumour. Similarly, in malignant tumours cases, most of the tumor was cystic inconsistency. Rest of the tumours were solid (11.36% in benign and 38.46% 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% were cystic.^{3,4} According to the above finding commonest consistency was in cystic in benign tumour while in malignant tumours 53.84% were mixed and 38.46% was solid which is little variable to others.

Distribution to various histological types of tumor and distribution of malignancy in them

In benign tumour (85.43 %) most common variety was serous (63.6%) followed by the mucinous tumour (21.6%) which are epithelial tumour similar in malignant tumour (12.62%) most common variety in serous (46.2%) followed by mucinous (23.1%) 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 of 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 %).^{5,6} 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 cystadenocarcinoma (9.5%)

and mucinous cystadenocarcinoma (3.2%).⁷ From above observations suggest the most common variety of in benign and malignant tumor of the ovary is epithelial tumor and commonest serous cystadenoma followed by mucinous cystadenoma.

Correlation of diagnosis of malignancy by ultrasonography and histopathology report

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%.

CONCLUSION

Finally, the conclusion of our study is that 85.43% were benign tumor and 12.67% were malignant tumor. Among this, 70.87% were cystic, 14.56% were solid and 14.56% were mixed tumors. Mostly they were epithelial tumors (85.43%). Main surgery was total hysterectomy with bilateral salpingoopherectomy. In malignant tumours 61.53% also had chemotherapy and 0.97% had debulking.

Diagnosis of ovarian tumor and malignancy in ovarian tumor was diagnosed clinically and finally by Ultrasonography except 3.88% malignancy was diagnosed by frozen section or by histopathology report. There is strong correlation of ultrasonography finding and histopathology report. Specificity of the Ultrasonography was 73.33% but sensitivity was 100%. Positive predictive value was 95.65% and negative predictive value was 100%.

Limitation

MRI and CT scan was not done in all patients due to low socioeconomic status.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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