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ORIGINAL ARTICLE

CLINICAL EXAMINATION AND ULTRASONOGRAPHY FOR DECIDING LAPAROSCOPIC MANAGEMENT OF OVARIAN MASSES INLOW RESOURCE SETTINGS

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Abstract

Aim - To evaluate the efficacy of gynaecological examination with ultrasonography (USG) for deciding the mode of surgery in ovarian masses.

Methodology: This prospective cohort study was conducted in the department of Obstetrics and Gynaecology at King George Medical University. 65 women with ovarian masses underwent laparoscopic surgery based on gynaecological examination and ultrasonography.

Results: 65 women enrolled for the study were managed by laparoscopic cystectomy, oophorectomy or salpingo oophorectomy. Only 4 cases were converted to laparotomy due to technical difficulties. Cytology and histopathology of all cases confirmed benign ovarian diseases including follicular cysts, hemorrhagic cysts, endometriomas, benign ovarian tumors and borderline ovarian tumors.

Conclusion - A thorough gynaecological examination with abdominal or trans vaginal ultrasonography is the cornerstone to decide about mode of surgery in ovarian masses.

Keywords: Gynaecological examination, benign ovarian diseases, endometrioma, follicular cysts, borderline ovarian tumors.

1 | INTRODUCTION

Ovarian masses include ovarian cysts and tumors, which may be either benign or malignant. The prevalence of ovarian cysts presumed to be benign in asymptomatic women of childbearing age is approximately 7 % (1). All the ovarian masses need evaluation to distinguish malignant tumors from the benign ones, as the management protocols for these two entities are entirely different. It has been estimated that up to 10% of women will undergo surgery for an ovarian mass in their lifetime (2). The overall incidence of a symptomatic ovarian cyst being malignant in a premenopausal woman is approximately 1:1000 (2).

Though various tumor markers, imaging modalities and scoring systems are currently available, it is neither practical nor cost effective to subject the patient

to all of them especially in low resource settings. But, the treatment modality needs to be decided upon on the basis of preoperative diagnosis. It is well known that laparoscopy has several advantages over laparotomy for management of functional ovarian cysts, endometriotic cysts and benign ovarian tumours.

Thus, the correct diagnostic approach to an adnexal mass in low resource settings becomes a great challenge. We hereby present a study conducted on ovarian masses that were diagnosed and managed on the basis of clinical examination and ultrasonography. These two criteria were used to decide minimal invasive mode of surgery.

Experiment Work

2 | AIMS AND OBJECTIVES

To evaluate the efficacy of clinical examination and ultrasonography for deciding mode of surgery in ovarian masses.

3 | MATERIAL AND METHODS

This prospective cohort study was conducted in the department of Obstetrics & Gynaecology at King George Medical University over a period of 2 years. All women presenting to the gynaecology OPD with an abdominal or pelvic mass were evaluated for the study. Detailed history was taken followed by complete general physical, systemic and gynaecological examination. Women with clinical features suggestive of malignant ovarian tumour i.e. ascites; ovarian mass with solid cystic consistency, irregular surface or margins, immobility; nodularity in pouch of Douglas or recto vaginal septum or pleural effusion were excluded. All recruited women were then subjected to abdominal and pelvic ultrasonography. Women with USG features suggestive of malignancy i.e. solid areas, multiple septations, thick septae (>4mm) and intra- cavitary papillary projections were excluded. Women with sonographic evidence of ascites, peritoneal nodules, hepatic metastasis and retroperitoneal lymphadenopathy were also excluded.

Thus, all women with clinical and sonographic features suggestive of benign ovarian mass were recruited in the study. Estimation of Serum CA-125 levels was done in all recruited women but high CA 125 alone was not taken as an exclusion criteria. CA-125 may be raised in a number of benign conditions like endometriosis and genital tuberculosis that can be best managed by laparoscopy.

A total of 65 cases were found to be eligible for laparoscopic management as per clinical and sonographic findings. They underwent laparoscopy and intra-operative findings were recorded. Surgical procedure was decided as per the laparoscopic findings and Histopathological (HPE) reports of the specimen were obtained. The recorded data was analyzed to find co-relation of clinical and sonographic findings with HPE report and CA-125 levels.

4 | RESULTS

Table 1 shows the demographic profile of women enrolled in the study. Maximum (81.53%) cases were found to be in the age group of 20-40 years while 13.84% were adolescents. 21.53% of all the women were unmarried and among married women, 47.69% were nulliparous.

Table 2 shows the sonographic features of recruited cases. Majority of the masses were unilateral (83.3%) and predominantly cystic (92.3%).

Table 3 shows CA 125 levels in recruited cases. Majority of the women (52.30%) had CA-125 in the range of 35-100mIU/ml.

Table 4 shows the co relation between CA-125 levels and Histopathological report. Majority of the cases with normal CA-125 (<35) had simple ovarian cysts

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(66.67%). Most (46.34%) women with raised CA125 (>35) were diagnosed to have ovarian endometrioma.

Table 5 shows the surgical procedure performed in all cases.

It is evident that all the cases recruited were either physiological cysts or benign ovarian tumours or endometrioma.

None of the cases showed malignant ovarian tumour. Majority (44.61%) of cases had simple ovarian cysts. Out of 65 women, 61 were managed laparoscopically and 4 were converted to laparotomy. This included one unmarried woman with a large peri tubular cyst that was excised. Two cases had already received anti-tubercular therapy and presented with huge tubo ovarian masses with extensive pelvic adhesions. The fourth case was opened for large dermoid cyst. All cases were followed up in postoperative period. Eight women had spontaneous conceptions followed by normal vaginal delivery.

Table 1: Demographic Profile of the study cohort

Parameters		*N*	*%*
Age	<20 years	9	13.84
	20-40 years	53	81.53
	>40 years	3	4.61
Unmarried		14	21.53
Parity	P0	31	47.69
	P1-5	18	27.69
	>5	2	3.07

Table 2: Ultrasonography characteristics of the Ovarian masses

Parameters	*Numbers*	*Percentage (%)*
Laterality		
Unilateral	55	83.3
Bilateral	11	16.6
Echogenicity		
Anechoic (cystic)	60	92.30
Heterogeneous (complex mass with solid areas)	6	9.09
Size		
<5 cm	9	1.12
5-10 cm	53	75.7
>10 cm	8	11.4

Table 3: Distribution of cases according to CA-125 Levels

Range (mIU /ml)	*Number of cases*	*Percentage*
<35	24	36.92
35-100	34	52.30
100-200	7	10.76

Table 4: Co-relation between CA-125 levels and Histopathological type of ovarian disease

S.CA-125 (U/ml)	*HPE*				
	Simple cyst	Endometrioma	Serous Cystadenoma/ cystadenofibroma	Hemorrhagic cyst	Dermoid Cyst
<35	16	2	2	1	3
35-100	12	14	3	4	1
>100	-	5	2	-	-

Table 5: Distribution of cases on the basis of surgical procedure performed

	Total cases		*Surgical Procedure*		
HPE diagnosis Ovarian disease	*Number*	*Percentage*	*Cyst aspiration*	*Cystectomy*	*Salpingo-Oopherectomy*
Simple cyst	29	44.61	14	14	1
Endometrioma	19	29.23	12	7	0
Fimbrial cyst	01	1.53	0	1	0
Serous Cystadenoma	06	9.23	0	3	3
Haemorrhagic cyst	05	7.69	2	2	1
Dermoid cyst	05	7.69	0	3	2

5 | DISCUSSION

Ovarian neoplasms are one of the most common findings among women of all age groups. The prevalence of an adnexal mass is 0.17% to 5.9% in asymptomatic and 7.1% to 12 % in symptomatic women (3). Earlier, laparotomy was considered to be the standard mode of surgery in women presenting with adnexal masses. Operative laparoscopy is presently the preferred and more acceptable alternative. Laparoscopic surgery offers several advantages like reduced intraoperative blood loss, minimal tissue handling, lower incidence of peri-operative infections and shorter hospital stay that eventually reduces financial burden and human resources. The present study aimed to evaluate the usefulness of clinical examination as the key marker along with ultrasonography as an adjunct to decide between laparoscopy and laparotomy as the mode of surgery for ovarian masses.

Majority of our cases were in the age group of 20-40 years. Jha R and Karki S (4) also reported that majority of benign ovarian masses were seen in the third and fourth decade of life. These observations further reinforce the fact that most masses presenting in women of reproductive age group are benign in

nature. 47.69% of the women recruited in this study were nulliparous. Parazzini F et al (5) reviewed the risk factors for benign ovarian cysts. They found that the risk of ovarian cysts among parous women decreased with increasing number of births supporting our finding.

83.3% of the cases recruited were unilateral and 92.3% were anechoic on sonography. This is because; our objective was to identify benign ovarian masses suitable for laparoscopic management. Hence, most of the cases recruited had unilateral cystic masses.

75.7% of all the masses removed laparoscopically measured between 5-10 cm and 11.4% measured more than 10 cm in diameter. Yuen PM (6) et al conducted a study in which they included ovarian masses that were clinically not malignant and measured up to 10 cm. These cases were successfully managed with laparoscopic surgery. Ashwini Sidhamalswamy G et al (7) conducted a study to assess the feasibility and outcome of laparoscopic surgery for the management of ovarian cysts above 10 cm in diameter. They observed that cystic masses not associated with ascites or lymphadenopathy and with normal S. CA-125 levels could be managed laparoscopically. Ghezzi et al (8) evaluated the feasibility of laparoscopy in the management of ovarian masses >10 cm in diameter. Evidence of metastasis or gross ascites were taken as exclusion criteria for laparoscopic management. Neither sonographic feature of the mass nor raised S. CA125 levels were included in the exclusion criteria. In their study, 174 out of 186 women presenting with benign ovarian masses were managed laparoscopically with success. Their rate of conversion to laparotomy (6.4%) was similar as ours (6.15%). In both the studies masses that were clinically benign were taken up for laparoscopic management.

A study done by Sagiv R et al (9) assessed the feasibility of laparoscopic surgery in the management of extremely large ovarian masses. They included 21 patients with masses that were solid or complex, reached the umbilicus or higher and were not associated with ascites or lymphadenopathy on computed tomography scan. All the patients were managed laparoscopically except for two cases that were converted to laparotomy.

In the present study, it was observed that majority (63.07%) of the women had raised S.CA-125. All of these cases were found to have benign ovarian conditions like simple cysts, hemorrhagic cysts, endometriomas and dermoid cyst. Rahul Ranjan et al (10) also observed that S.CA-125 levels were raised in benign conditions like genital tuberculosis, endometriomas and dermoid cyst. Hence, it may be inferred that raised S.CA-125 level is not always an indicator of a malignant ovarian mass.

Laparoscopic management included Cyst aspiration in 43.08% cases, cystectomy in 46.15% cases and unilateral salpingo-oopherectomy in 10.76% of the cases. Four cases were converted to laparotomy. Shindholimath Vishwanath V et al (11) recruited 15 patients of benign ovarian masses with an average diameter of 16.75 cm.

Laparoscopic cystectomy was done in 33.33% cases, oopherctomy in 20% cases and salpingo-oopherectomy in 40% cases. One case was converted to laparotomy In their study. Our rate of conversion to laparotomy was comparable to this study. But none of our conversions were due to peroperative finding of malignant ovarian disease.

The results obtained in the present study clearly reveal that all the cases presumed to be benign preoperatively were finally confirmed to be benign on histopathology. None of the cases showed malignant ovarian disease. These cases also included patients with raised S. CA-125 levels, cases with bilateral ovarian masses and those with heterogeneous appearance on ultrasonography.

6 | CONCLUSION

It is quite possible to decide the mode of surgery in cases of ovarian masses on the basis of clinical examination and ultrasonography. Size of the mass, bilaterality and raised CA125 should not be limiting factors for laparoscopic management. However, one should not hesitate to convert to laparotomy on presence of any peroperative findings suggestive of ovarian malignancy.

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