



A PROSPECTIVE RANDOMIZED STUDY OF LAPAROSCOPY VERSUS LAPAROTOMY IN THE SURGICAL MANAGEMENT OF BENIGN OVARIAN CYST.

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ABSTRACT

Aim: The aim of this study is to evaluate the operative and peri operative outcomes laparoscopy and laparotomy for benign ovarian cysts in a prospective and randomized manner.

Methods : Between June 2017 and February 2018 60 consecutive women with a diagnosis of benign ovarian cysts and requiring surgical management were randomly assigned to laparoscopy and laparotomy and the outcomes evaluated.

Results : The mean operating time was longer in laparoscopy when compared to laparotomy as we are in the learning curve of doing laparoscopic surgeries. However the mean blood loss was very less in laparoscopic group. We found no difference in the post-op requirement of analgesic in both groups. In terms of faster recovery and hospital stay laparoscopic group was better compared to laparotomy group.

Conclusion: Laparoscopy should be considered as first choice in benign ovarian cysts as it is proved beyond doubt that it has less blood loss, less hospital stay, faster recovery and ease in releasing adhesions. However in our study operating time was a little longer as we are in the learning curve.

KEYWORDS : Benign ovarian cysts, Laparoscopy, Laparotomy, oophorectomy, cystectomy.

Introduction:

Ovarian cyst is common among women of all age groups but more common among women of reproductive age group. It can be either benign or malignant. 95% of ovarian cyst are benign. Many benign ovarian cysts are functional, asymptomatic and resolve spontaneously. But some may require conservative medical or surgical management. Persistent cyst more than 7cm, cyst that are causing symptoms in spite of medical management and persistent complex ovarian cyst are some of the benign cyst requiring surgical management. Before the advent of laparoscopy, laparotomy was done to remove the cyst. Now days surgical treatment for benign ovarian cysts has become more conservative and less invasive. Operative laparoscopy is now considered the gold standard in treating benign ovarian cysts. The advantages of laparoscopy included a very small incision, less post operative pain, shorter hospital stay, early ambulation, early return to normal routine activities which in turn gives better patient satisfaction and improved quality of life (Canis et al 1997, Hidlebaugh et al 1997). Laparoscopy has been used in increasing frequency in the management of benign adnexal masses over last twenty years. (Canis et al 2002). Few prospective studies show that laparoscopy should replace laparotomy in the treatment of benign ovarian masses (Yuen et al 1997). In our institution we started doing laparoscopy from January 2017 and hence we performed this prospective study to compare the advantages of laparoscopy over laparotomy.

Materials and methods:

This study is a prospective randomized controlled study. The study was carried out at the department of Obstetrics and gynecology, Govt. Medical college and ESIC Hospital, Coimbatore, Tamilnadu, India for period of nine months from June 2017 to February 2018. All women with a probable diagnosis of benign ovarian cyst and requiring surgical treatment were included in the study. Preop evaluation included detail history taking, clinical examination, ultrasound examination, Ca-125 and if required CT abdomen and pelvis.

Exclusion criteria:

Ca-125 > 35 IU/ml, postmenopausal women, women on ovulation

induction drugs and women who require hysterectomy were excluded from the study.

A written informed consent was obtained from all patients after thorough counselling and the need for possible laparotomy if difficulty was encountered during laparoscopy was explained. Randomisation was done on the day of surgery. The characteristics like age, BMI, socio-economic status, co-morbid conditions, history of previous surgeries, chief complaints unilateral or bilateral, torsion, operating time, blood loss during surgery, post-op morbidity, hospital stay were noted. Standard pre-op assessment was made with serum markers, usg scan and color doppler evaluation to evaluate the size and character of cysts. Surgical procedure was performed by one senior surgeon and one junior resident in all cases. Preop antibiotic - 3rd generation cephalosporin was administered to all patients half an hour before surgery and continued for two days. In laparotomy cases a suprapubic incision of 4-8 cm was made, the cyst was drained through the incision and salpingo oophorectomy or cystectomy was performed accordingly.

In laparoscopy, the procedure was carried out through three ports [one 10mm port was placed supraumbilical, one 10mm port placed in left iliac fossa and one 5mm ancillary port placed in right iliac fossa]. The cyst was aspirated initially followed by cystectomy or oophorectomy accordingly. In cystectomy the capsule was stripped from the remaining ovarian tissue and bleeding surfaces coagulated. If cystectomy not feasible then oophorectomy was done.

Specimen was removed through the 10mm side port. The blood loss during surgery was estimated. Excluding the day of surgery, if patient had temperature >38°C in two consecutive measurements it was recorded as fever. Patient were discharged when they were ambulant, afebrile, bladder habits were normal and asked to come for suture removal on 7th post operative day.

Results:

A total of 60 cases were included in our study and were randomly assigned to laparoscopy and laparotomy. The two groups were

similar in terms of age, BMI, and history of previous surgeries (Table 1).

Table 1: Characteristics of patients undergoing laparoscopy and laparotomy of ovarian cyst.

S.No	Characteristics	Laparoscopy (n=30)	Laparotomy (n=30)
1	Age yrs (mean)	31.2	30.2
2	BMI (mean)	24.8	23.6
3	Previous surgery/LSCS	4	4
	other surgery	2	3

Age ranged of between 13 yrs and 52 yrs and the mean age was 30.7 . The mean BMI was 24.8 in laparoscopy group and 23.6 in laparotomy group. 8 cases had history of previous LSCS and another 5 cases had abdominal surgeries like diagnostic lap (2), appendicectomy (2) and R dermoid cyst operated (1). Socioeconomic status doesn't have much significance as our hospital is nominated only for employees earning < Rs.21,000/- per month. Hence most of them 58 patients (96%) belonged to class 3 and 4.

5 women out of 60 were unmarried . Out of the 55 married women 3were nulligravida , 11 were para -1, 32 were para -2, and 8 were >para-2 and 1 woman was pregnant.

Most of the women (26 patients)who required surgical treatment came with complaints of chronic abdominal pain (43.3%) , 15 of them had abnormal uterine bleeding (25%) , 14 of them presented with acute pain abdomen (23.3%). 2 had come with abdominal distension (3.3%) and 3 were asymptomatic(5%). Out of the 14 women who presented with acute abdominal pain 7(50%) had torsion of ovarian cyst (Table-2).

Table 2: Frequency distributions of mode of presentation of ovarian cyst.

S.No		Number	Percentage
1	Chronic abdominal pain	26	43.3
2	Abnormal Uterine bleeding	15	25
3	Acute abdominal pain	14	23.3
4	Abdominal distension	2	3.3
5	Asymptomatic	3	5

54 women (90%) had unilateral ovarian cyst and 6(10%) bilateral cyst. All the patients were equally distributed in both the groups (laparoscopy and laparotomy). Out of 30 cases in laparoscopy group 1 patient had dense adhesions and hence converted to laparotomy. This cases was excluded from the study and 1 more case added to the laparoscopy group. Adhesions were flimsy in 4 patients and dense in 1 patient in laparoscopy group. Adhesions were flimsy in 3 patients and dense in 1 patient in laparotomy group.

The mean operating time for laparoscopy cases was 80+ 22 minutes and 35+ 18 minutes for the laparotomy group.The mean estimated blood loss was 50ml +17 for laparoscopy group and 80ml +23 for the laparotomy group (Table 3).

Table 3: Clinical characteristics of patients undergoing laparoscopy and laparotomy

	Laparoscopy (Laparotomy	P value
Mean operating time	80±22	35±18	<0.0001 significant
Mean blood loss	50±17	80±23	<0.0001 significant

P-values was calculated using the T-test

No fever encountered in any of the cases in both groups. In the post of period there was no statistically significant difference in the analgesics required. Patients were started on clear fluids 6 hours after surgery in laparoscopy group and 12 hours in laparotomy

group. Patients were discharged once they were ambulant and were able to do routine activities. The mean hospital stay was 2 days in laparoscopy group and 4 days in laparotomy group.

Discussion:

Minimally invasive surgery has to be considered as the gold standard in surgical management of benign ovarian cysts (Canis et al 1997). When comparing the peri operative outcomes it is well accepted that laparoscopy is better to laparotomy in benign ovarian cyst (Yuen et al 1997⁴, Carley et al 2003⁵). As per the post out comes our study found great significance in terms of return to normal activities and hospital stay which is in contrast to the study done by Fafani et al 2004⁶ . In laparotomy we had a shorter operating time compared to laparoscopy (80vs 35min) as we were in the learning phase of doing laparoscopic surgeries which is comparable to the study done by Fafani et al 2004⁶. Longer time in laparoscopy was mainly due to more time taken for specimen retrieval. However adhesions were easily removed in laparoscopy compared to laparotomy due to wider vision (Pelosi et al 1996⁷).

There was rupture of cyst in 1 case out of 30 laparoscopy cases (3.3%) and nil in laparotomy cases which is very less when compared to the study by Fafani et al where it was reported as 6% rupture in laparoscopy and 2% in laparotomy group. Rupture of cysts and spillage were common if the cysts were huge (Flynn & Niloff et al 1999⁸, Pejroic et al 2001⁹). The blood loss in our study was comparable with the study done by Victor et al 2005¹⁰ which shows 71ml loss in laparoscopy group and 119ml in laparotomy group. We had 1 patient who was pregnant (second trimester) and had ovarian cyst for whom laparotomy was done . However the study by Limei et al 2014¹¹ shows that laparoscopy is better choice in pregnancy with ovarian cyst. Conversion to laparotomy is 3.3% compared to 3.9% in the study done by Beeresh et al 2017¹².

Conclusion:

Large ovarian cyst that cause problems occur in 8% of women before menopause. Laparoscopy should be considered as first choice in the surgical management of benign ovarian cyst as it is proved beyond doubt that it has less blood loss, less hospital stay, faster recovery and ease in releasing adhesions. However in our study as we are in the learning curve so the operating time was a little longer.

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