

Role of Laparoscopy in Reproductive Age Group Women with Gynecological Problems in a Tertiary Medical College

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ABSTRACT

Background

Laparoscopy has been a revolution in gynecological surgery as it is safe and minimally invasive. It can be used as a diagnostic as well as treatment modality for different gynecological problems like Chronic pelvic pain, adnexal cyst, ectopic pregnancy, Pelvic inflammatory disease and infertility.

Methods

This study was carried out at College of Medical Sciences-Teaching Hospital from April 2022 to March 2023 in 105 women. All the women undergoing laparoscopic surgeries were analyzed for indications, intraoperative findings and interventions.

Results

The mean±SD of age of women was 30.34±7.73 years, most were in age group 26-35 years. The most common indications for Laparoscopy were for Adnexal cyst (74.28%), Chronic Pelvic Pain (14.28%) and Infertility (11.42%). The most common findings according to site were Ovarian pathology (48.60%) followed by peritoneal pathology (22.9%), Tubal pathology (17.14%) and normal findings (10.50%). In ovarian - Dermoid cyst (31.37%), in tubal - ectopic pregnancy (55.56%), in peritoneal-Adhesions (45.83%) were the most common finding. In laparoscopic interventions, 26.70% had cystectomy, 14.3% had salpingectomy and 13.3% had Sterilization.

Conclusions

Laparoscopy as a modality for diagnosis and treatment of gynecological problems has been well established in recent times. It's been a choice of surgery because of its reduce postoperative pain, shorter hospital stay, faster recovery and minimal scar. However, adequate advanced training and equipment are needed to perform skillful laparoscopic surgeries.

Keywords: cystectomy; gynecological problems; laparoscopic surgeries.

INTRODUCTION

Laparoscopy has been the beautiful innovation in the modern world. It is an important tool for diagnosis and treatment of conditions associated with pelvic pathologies. Initially, the use of laparoscopy was restricted to diagnostic purposes only but nowadays, it is used for different gynecological conditions such as ovarian cysts, uterine fibroids, ectopic pregnancies, endometriosis and gynecological malignancies.¹ It consists of endoscopic viewing of the abdominal cavity by means of distension provided by artificial pneumoperitoneum. It was first performed by Hans

Christian Jacobeus in Sweden in 1910.² In Nepal, first laparoscopic gynecological operation done was tubal sterilization in 1971 in Maternity Hospital.³ Laparoscopy has been popular among women due to its smaller wound, it is cosmetically better and has less pain, patient recovery is fast and return to normal activities is relatively shortened and it facilitates return to work quickly regardless the complexity of the procedure.⁴⁻⁷ Our study aimed to know the common indications of performing laparoscopy, intraoperative findings, and various interventions done during the surgery in reproductive age group women.

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METHODS

This prospective longitudinal study was conducted in the Department of Obstetrics and Gynecology, College of Medical Sciences – Teaching Hospital from April 2022 to March 2023. Ethical approval was obtained from the Institutional Review Committee (IRC) of COMS-TH. Convenient sampling method was used for data collection.

The sample size was calculated using the following formula (Cochran formula)

$$\begin{aligned} \text{Sample size (N)} &= (Z)^2 * P(1-P) / e^2 \\ &= (1.96)^2 * 0.156(1-0.156) / (0.05)^2 \\ &= 103.22 \end{aligned}$$

Where, Z= degree of confidence level at 95%= 1.96
P = Prevalence of the disease (15.6%), e = Margin of error i.e. 5%

The patients were explained about the type of procedure, duration of procedure, intra and post-operative complication, post-operative stay and need of laparotomy. Informed consent was obtained from the patient for laparotomy. A pre-operative assessment was done in all the patients which included detailed history and thorough general physical examination including per speculum and per vaginal examination, complete blood count, Ultrasound –Abdomen and pelvis and measurement of tumor markers whenever indicated. All the elective patients were admitted a day prior, bowel preparation and pre anesthetic checkup done. General anesthesia with endotracheal intubation was done in all cases. During the procedure, the patient was placed in Trendelenburg position. Abdomen was opened with open technique using Hasson Cannula. A one cm supra umbilical incision was given and pneumoperitoneum was created. Ovarian cystectomy was performed by either enucleating the cyst, deroofting or aspirating it followed by removal of the cyst wall or oophorectomy where needed. When complete cystectomy was not possible due the presence of adhesion, the cyst was then examined carefully and coagulated. All the patients received parenteral antibiotics for first 24 hours followed by oral antibiotics for 5 days. The patients of tubal sterilization, chromopertubation and ovarian drilling were discharged after 24 hours whereas patient of cystectomy, adhesiolysis, ectopic pregnancy were

discharged on third day. Patient were followed from the time of admission to the time of discharge and at one week. The collected information was entered in Microsoft Excel 2016. The data were analyzed using Statistical Package for Social Sciences (SPSS), version 16.

RESULTS

The mean±SD of age of women was 30.34±7.73 years, most were in age group 26-35 years (Table 1).

Characteristics	Frequency (%)
Age group	
15-25	36 (34.30%)
26-35	42 (40%)
36-45	27 (25.70%)
Age (Mean ± SD) = 30.34± 7.73 years	
Min (Max) age 26(35) years	
Occupation	
Homemaker	47 (45)
Literate	
Literate	73 (69.5)
Nulliparity	22 (21)
Multiparity	46 (43.80)
Pregnant	9 (8.60)

The most common indications for Laparoscopy were for Adnexal cyst in 74.28%, Chronic Pelvic Pain in 14.28% and Infertility in 11.42% (Table 2).

Findings	Chronic pelvic pain	Adnexal cyst	Infertility
	Frequency (%)	Frequency (%)	Frequency (%)
Ovary	1 (6.67%)	47 (60.25%)	3 (25%)
Uterine	-	1 (1.28%)	-
Fallopian tube	-	17 (21.79%)	1 (8.33%)
Peritoneal	14 (93.33%)	3 (3.84%)	7 (58.33%)
Normal	-	10 (12.84%)	1 (8.33%)

The findings of laparoscopy according to site were 48.60 % with Ovarian pathology, 22.9 % with peritoneal pathology, 17.14 % with Tubal pathology and 10.50 % with normal findings. Among the Ovarian pathology, Dermoid cyst (31.37 %) was the most common finding followed by Endometrioma (21.56 %) and Serous cystadenoma (19.60%). In tubal pathology, tubal ectopic pregnancy (55.56%) was the most common finding and Adhesions (45.83%) was the most common peritoneal finding (Table 3).

Table 3. Laparoscopic Findings according to the site.	
Findings	Frequency (%)
Ovarian	
Serous cystadenoma	10 (19.60%)
Dermoid cyst	16 (31.37%)
Hemorrhagic cyst	8 (15.68%)
Endometrioma	11 (21.56%)
Polycystic ovaries	3 (5.88%)
Ruptured ovarian cyst	2 (3.92%)
Twisted ovarian cyst	1 (1.96%)
Tubal	
Hydrosalpinx	3 (16.67%)
Tubal cyst	4 (22.22%)
Tubal ectopic pregnancy	8 (44.44%)
Twisted tubal cyst	1 (5.55%)
Ruptured ectopic pregnancy	2 (11.11%)
Peritoneal	
Endometriosis	7 (29.17%)
PID	5 (20.83%)
Adhesions	11 (45.83%)
Pelvic abscess	1 (4.16%)
Uterine	
Fibroid	1 (0.95%)
Normal	11 (10.47%)

Table 4. Association of occupation and indications of laparoscopy.

Occupation	Chronic pelvic pain	Adnexal cyst	Infertility
	Frequency (%)	Frequency (%)	Frequency (%)
Homemaker	8 (53.33%)	32 (40.50%)	7 (63.63%)
Job holder	4 (26.67%)	10 (12.65%)	1 (9.09%)
Teacher	-	8 (10.12%)	2 (18.18%)
Medical	-	8 (10.12%)	-
Student	-	6 (7.59%)	-
Farmer	3 (20%)	8 (10.12%)	1 (9.09%)
Others	-	7 (8.86%)	-

Table 5. Laparoscopic Interventions according to findings.

Interventions	Frequency (%)
Cystectomy	28 (26.7)
Sterilization	14 (13.3)
Salpingectomy	15 (14.3)
Salpingo-Oophorectomy	20 (19)
Ovarian drilling	3 (2.85)
Adhesiolysis	13 (12.38)
Chromopertubation	9 (8.57)
Others	3 (2.85)

In our study, 44.8% were housemaker by occupation followed by Job holder (14.3%). Surprisingly, 53.33% of Chronic pelvic pain, 40.50% of Adnexal cyst and 63.63% of Infertility were homemaker by occupation as compared to working women (Table 4).

In laparoscopic interventions, in ovarian pathology, 26.70% had cystectomy followed by 19.0 % women had Salpingo-oophorectomy. 14.3 % women had salpingectomy followed by 13.3 % had Sterilization in tubal pathology. Adhesiolysis was performed in 12.4% women in peritoneal pathology (Table 5).

DISCUSSION

In our study, the mean age of women was 30.34 years and majority of women were in age group 26-35 years. A study by Akhtar R et al. had similar age range of 26-33 years of women undergoing laparoscopy.⁸ In a study by Bhutani N et al., the mean age of women was 28.44 years and most were in age group 21- 30 years.⁹ In our study, the main indications for laparoscopy were Adnexal cyst in 74.28%, Chronic pelvic pain in 14.28% and Infertility in 11.42% whereas in most of the other studies shows different results. In a study by Togni R et al., the indications for laparoscopy were infertility in 57% and chronic pelvic pain in 27%.¹⁰ We have Infertility Centre nearby our hospital so this might be the reason for less number of women with infertility. In a study by Sharma et al., the commonest findings on laparoscopy was adhesions in 40%, endometriosis in 18%, pelvic congestion syndrome in 20%, and 10% had normal findings.¹¹ Our laparoscopic findings are similar to this study with adhesions in 45.83%, endometriosis in 29.17%, PID in 20.83% and normal findings in 10.47%. Our study showed Dermoid cyst (31.37%) as the most common ovarian finding followed by Endometrioma (21.56%) and Serous cystadenoma (19.60%). This contrast with the studies done by Saha R et al.,¹² in which endometriosis (38.96%)was the most common ovarian tumor followed by Dermoid cyst (32.46%) and serous cystadenoma (6.49%) and Bajracharya et al.,¹³ showed Serous cystadenoma (54.6%) as the most common ovarian tumor followed by Dermoid (25.7%) and endometriosis (19.5%). In a studies by Beyler et al.¹⁴ and Meyer et al.¹⁵ concluded that Hydro

salpinges adversely affect reproductive outcomes and several factors have been implicated, including a mechanical interference with implantation and toxic effects on endometrium and embryo. Our study showed 17.64% of Hydrosalpinx in tubal pathology which is similar to the study done by Subedi et al.¹⁶ In our study, 63.63% of Infertility were homemaker by occupation as compared to working women. Similar results were seen in study by Subedi et al.,¹⁶ where 54% of infertile women were housewives. Of the interventions, the most common procedure performed during laparoscopy in our study was for Ovarian surgery (46.7%) followed by Salpingectomy (14.3%) and sterilization (13.3%). Similar results were seen in a study done in 89 women by Begam A et al., where ovarian surgery was performed in 48.3%.¹⁷ In a study by Eltabbakh et al.,¹⁸ reported laparoscopic management of benign ovarian cyst (mucinous/serous cystadenoma, dermoid cyst, endometriosis, etc.) with cystectomy or oophorectomy is a feasible and safe option for women with a short hospital stay. In our study also, we had performed laparoscopic cystectomy in 28 women (26.66%) and oophorectomy in 20 women (19.04%) with benign ovarian cyst. All the ectopic pregnancies which were hemodynamically stable and those presented at day time underwent laparoscopic salpingectomy (9.52%) in our study and this was similar to the study by Bajracharya et al. (13%)¹³. This was the main limitation in providing the laparoscopic services to ectopic pregnancy patients during emergency hours. Olagendoye et al.,¹⁹ found laparoscopic management feasible and safe in a study in 62% of patients while 31% of the patient requires laparotomy following preliminary

laparoscopy. Mohamed et al.,²⁰ had compared laparoscopic and laparotomy management of ectopic pregnancy and concluded that laparoscopic surgeries for ectopic pregnancies are the most beneficial procedure with maximum safety and efficiency. One case of pregnancy at 10 weeks of gestation underwent successful laparoscopic Salpingo-oophorectomy for three times twisted ovarian cyst. She had vaginal delivery at term. In a study by Akhtar R et al., laparoscopic sterilization was performed in 21.21% women however in our study, only 13.33% women had laparoscopic sterilization. This might be due to the government policy of providing free program with an incentive.⁸

CONCLUSIONS

Laparoscopy has provided unique advantages for various gynecological problems at our hospital by establishing definitive diagnosis, speedy recovery, minimal complications, shorter hospital stay and cosmetically better scar. With the careful application of advanced laparoscopic techniques and sufficient surgical expertise, laparoscopic surgeries can be implemented in wide range of gynecological problems.

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