

Laparoscopic Surgery in Gynaecology

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Abstract

Background: With the advent of technological advancements, the indications for gynecological laparoscopy are increasing. We evaluated the results of our experiences with gynaecological laparoscopies and assessed rate, indications, complications and benefits in a teaching hospital.

Methods: In this retrospective observational study, a total of 137 patients had laparoscopic procedure done during the period January 2011 to December 2014 and were included in the study. Laparoscopic surgeries were performed under general anesthesia. Successful creation of the pneumoperitoneum was created with the help of Veress needle, mostly by closed access technique and occasionally with the open method. Secondary ports were introduced under direct vision. After completing the surgery laparoscope and secondary ports were removed under direct vision to minimize any iatrogenic insult.

Results: During the study period, 874 major gynaecological operations and 137 laparoscopies were performed. This gave the rate of 15.6% laparoscopies per 100 operations. Diagnostic laparoscopies were 48 (35%), operative were 89 (65%) and 8 (5.8%) laparoscopies were converted into open surgery due to technical difficulties. Complications were 8 (5.8%), majority being of minor nature except one major complication being a bladder injury.

Conclusion: Laparoscopic surgery offers unique benefits. These are establishing definite diagnosis, mobilization and speedy recovery, minimal complications, less cost and shorter hospital stay. In young patients, laparoscopy helps in preserving their fertility with better prognosis in contrast to open surgery.

Key Words: Gynaecology, laparoscopy, diagnostic, operative rate

Introduction

Laparoscopic surgery is the most modern surgical technique in the clinical practice all over the world¹. Minimal Access Surgery (MAS) is a contract between modern technology and surgical innovation to get high therapeutic results with fewer complications.

Gynaecological laparoscopy has broadened its scope in medical diagnostics as well as in the field of operative intervention. In the last two decades there have been significant advancements in this field and presently these are being improved at a rapid pace. Laparoscopy is one of the most common surgical procedures performed by gynecologists and it is considered as a revolution because of being safe and minimally invasive².

Laparoscopic surgery has evolved over the years from being a simple diagnostic aid to evaluate acute and chronic pelvic pain³, assessment of amenorrhea and for fertility work-up, to being a major surgical tool used to treat a multitude of gynecological problems ranging from treatment of ectopic pregnancy, dealing with lower abdominal masses, performing hysterectomies for menstrual disorders, staging and treatment of gynecological cancers^{4,5}. The reported overall complication rates range from 0.2 % to 10.3%⁶. Major complications of laparoscopy include trauma to bowel, bladder, major blood vessels and anaesthesia related risks due to increased intra-abdominal pressure, such as aspiration and difficulty in ventilating the patient. Minor risks include surgical site infection and port site hernia. Due to these rapid advancements in the pace of surgical skills in MAS we revisited all cases of gynecological laparoscopic procedures performed in the past four years (2011-2014).

Patients and Methods

This retrospective observational study analyzed all cases that underwent diagnostic and operative intervention laparoscopically from 1st January 2011 to 31st December 2014 in the department of Obstetrics and Gynaecology, Holy Family Hospital in a tertiary care setting. Case records of patients were reviewed critically by retrieving information from ward registers, clinical notes and theater records. The total number of major gynecological operations performed during the study period was also obtained from theater record register. All data was assessed and analyzed using simple percentages. A preoperative assessment including thorough clinical and laboratory workup was done in all cases. Patients with ovarian

masses were evaluated by abdominal and vaginal ultrasounds, tumor markers along with radiological workup to exclude the possibility of malignancy. Those with malignant ovarian tumors were dealt with conventional laparotomy. Patients who underwent Laparoscopic assisted vaginal hysterectomy (LAVH) were assessed in terms of size and mobility of uterus to exclude any adhesions and need for removal of ovaries.

All diagnostic and operative laparoscopies were performed under general anesthesia. Some patients were put in modified Trendelenburg position according to the need and pneumoperitoneum was created with carbon dioxide insufflator 12-14 mmHg via Veress needle followed by sub-umbilical or intra-umbilical incision for 10mm primary port. After inserting camera through primary port, quick evaluation of whole abdominal cavity was undertaken by rotating camera through 360 degrees to rule out any adherence of bowel and decision made for inserting secondary ports through small incisions under direct vision and trans-illumination, lateral to deep inferior epigastric vessels. Peritoneal cavity was lavaged and intra peritoneal drain was placed if indicated. Instruments and laparoscope were removed under direct vision. Patients who underwent diagnostic laparoscopic procedures were discharged within 24 hours and patients with operative procedures were discharged after 24 hours.

Results

There were 874 gynaecological surgeries performed during the study period. Diagnostic laparoscopies were 48 (35%) and operative were 89 (65%) as seen in Table 1, while 8 cases (5.8%) were converted into open surgery.

Table 1: Types of Laparoscopic Surgery

| 0 | Number | Percentage |
|---------------------------------|--------|------------|
| Diagnostic Laparoscopic Surgery | 48 | 35% |
| Operative Laparoscopic Surgery | 89 | 65% |
| Total | 137 | 100% |

The age of 48 patients undergoing diagnostic laparoscopy ranged from 20 - 29 years in 27 cases (56%). While 21 (43.75%) were in the 30-39 years age group. In operative laparoscopy group, the ages of patients ranged between 20-29 years in 56 patients (62.92%), 30-39 years in 28 patients (31.46%) while 5(5.6 %) were in the range of 40 to 49 years(Table 2).

Table 2: Age Distribution of Patients

| Types of Laparoscopies | 20-29 Yrs | 30-39 Yrs | 40-49 Yrs |
|------------------------|-----------|-----------|-----------|
| Diagnostic | 27 | 21 | - |
| Operative | 56 | 28 | 5 |

The most common cause for diagnostic laparoscopy in our study was fertility deprivation. Primary fertility deprivation in 29 (60.4%) patients was more than double of secondary fertility deprivation, seen in 13 (27.1%). Cases investigated for primary amenorrhoea were 3 (6.25%) and same number of patients, 3 (6.25%) underwent diagnostic intervention for pelvic pain as shown in Table 3.

Table 3: Indications for Diagnostic Laparoscopy

| Indications | Number | Percentages |
|---------------------------------|--------|-------------|
| Primary Fertility Deprivation | 29 | 60.4 % |
| Secondary Fertility Deprivation | 13 | 27.1 % |
| Primary Amenorrhoea | 3 | 6.25 % |
| Pelvic Pain | 3 | 6.25 % |

In Operative laparoscopies, ovarian masses formed a major group i.e. 43(48.3%) of total laparoscopic surgeries, which included 20 cases of simple ovarian cysts, 15 endometriotic cysts, 5 dermoid and 3 par-ovarian cysts. Out of 31 patients of ectopic pregnancies, 12 were ruptured and 19 intact. All were successfully dealt with in our study group (Table 4).

Table 4: Indications of Operative Laparoscopy

| Indications | No |
|--------------------------------------|--------------|
| Ectopic | 34.8% |
| Ruptured | 12 |
| Intact | 19 |
| Ovarian Masses | 48.3% |
| Simple Ovarian cyst | 20 |
| Endometriotic cyst | 15 |
| Dermoid cyst | 5 |
| Par-ovarian cyst | 3 |
| LAVH | 4.5% |
| DUB | 3 |
| PMB | 1 |
| Others | 12.4% |
| Retrieval of IUCD | 5 |
| Sterilization of Fallopian Tube | 2 |
| PID | 1 |
| Adhesiolysis | 1 |
| Cauterisation of Endometriotic spots | 2 |
| Total | 100% |
| | 89 |

Aim was conservative surgery with tubal preservation in the management of intact ectopic pregnancies. In our study 4 cases of LAVH were performed and one converted into open surgery due to malfunctioning of instruments. Out of 11 operative laparoscopies, 5 IUCD were retrieved, 2 BTL and 2 cauterization of endometriotic spots were performed and one case of PID and one case of adhesiolysis done successfully as given in Table 4.

Table 5: Complications of Laparoscopic Surgery (LS)

| Complications | Number |
|---------------------------|------------|
| No Complication | 129 |
| Persistent Abdominal Pain | 5 |
| Wound Sepsis | 2 |
| Bladder Injury | 1 |
| Total number of LS | 137 |

Major complications were not encountered except in one case where there was bladder injury during exploration of lost IUCD which was diagnosed and repaired timely after converting into open surgery. Five cases of persistent abdominal pain were due to residual pneumoperitoneum and 2 cases of wound sepsis were encountered (Table 5).

Discussion

Among the diagnostic laparoscopies, fertility deprivation (87.5 %) was seen to be the leading indication^{2,7,8}. This is possibly due to increase in awareness among the population and also because it is cost effective in public sector hospitals. Diagnostic laparoscopy plays a vital role in the assessment of amenorrhoea and pelvic pain and is gold standard in the diagnosis of clinically suspicious cases of ectopic pregnancy, and operative laparoscopy is feasible and safe in the surgical management of all types of ectopic pregnancies as was in our study^{9,10}. In operative group, a large number of laparoscopies were performed for ovarian masses as reported in other studies.^{11,12} Ovarian masses were dealt after thorough preoperative assessment to exclude malignancy because of non-availability of laparoscopic oncologist. Four cases of LAVH were performed and one was converted to open surgery due to malfunctioning of instruments. This number is less as compared to many international studies³. Possible reason for this lag could be due to logistic issues with the endoscopic equipment in a public sector institution resulting in cancellation of surgeries. This can affect the learning curve of operating team adversely off and on, resulting in the lack of expertise among doctors as well as dearth of trained assisting staff. An interesting observation of our study also indicates increased rate of operative than diagnostic laparoscopy as also cited

by another study². Undoubtedly this changing trend shows the keenness of doctors and supporting staff to learn the advanced techniques for more indications for laparoscopy. It should be the first choice because it has a great role in the diagnosis of clinically problematic cases. It is safe with the absence of major perioperative and post-operative morbidity as depicted by our study and is comparable to other studies^{13,14}. Our experience supports the safety and diagnostic efficacy of MAS at a tertiary care teaching hospital and gives us insight into its use in different gynaecological problems in our population.

Conclusion

Laparoscopic surgery offers unique advantages for variety of gynaecological conditions in establishing definite diagnosis, speedy recovery, minimal complications, less cost and shorter hospital stay.

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