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Original Research Article

Initial Experiences of Laparoscopic Surgery at Nobel Medical College Teaching Hospital: A Learning Curve

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ABSTRACT:

Introduction: The field of minimal invasive surgery has flowered explosively in the recent past. Modern endoscopy has changed the approach to diagnosis as well as the operative procedure. This study was done with the aim of sharing the experiences of gynecological laparoscopic procedures done at Nobel Medical College and Teaching Hospital, Nepal. **Methods**: A descriptive study was done in the department of Obstetrics and Gynecology, Nobel Medical College from 1st February 2015 to 30th January 2016. All the patients undergoing laparoscopic procedures were analyzed for the indication, type of procedures and their complications. **Results**: During the study period, 100 patients underwent laparoscopic procedures including 25 cases of diagnostic and 75 cases of therapeutic procedures. Fifty-three patients with an ovarian mass underwent laparoscopic cystectomy. Laparoscopic salpingectomy was done in 11 patients with ectopic pregnancy. Laparoscopy assisted vaginal hysterectomy (LAVH) was done in eight cases and laparoscopic sterilization in two cases. One patient underwent successful myomectomy. One patient undergoing laparoscopic cystectomy and one case of LAVH had conversion to laparotomy because of dense adhesion and vault bleeding respectively. No other major complication noted apart from port side bleeding, infection and vault hematoma. **Conclusion**: Laparoscopy is a safe and feasible alternative to open gynecological surgeries though it has a long learning curve and a lot of expertise is necessary.

Keywords: cystectomy • hysterectomy • laparoscopy • learning • minimally invasive surgical procedures

INTRODUCTION:

Laparoscopy is a revolution in gynecological surgery as it is safe and less invasive. It was first performed by Jacobeus in Sweden in 1910.[1,2] History shows that in gynecological endoscopy surgery, there was massive enthusiasm in the beginning but its growth was not as expected. The major hurdle for this is the learning curve for endoscopy surgeries.[3] In developing countries like Nepal, we are still in a crawling phase, the major reason for this being lack of expertise. Another reason is that the unit is incorporated along with Obstetrics, where workload is high and hence time factor is another barrier.

The field of minimal invasive surgery has gained popularity in the recent past. It has revolutionized all surgical fields all over the world. Initially, its use in gynecology was restricted to diagnostic purpose specially in cases of infertility and few sterilization procedures. Gradually its use expanded from diagnostic to therapeutic modalities in different gynecological problems.[4-6]

There are definite advantages of laparoscopy over laparotomy with the benefit of shorter hospital stay, less postoperative pain, cosmesis, faster return

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to normal activity and less chance of adhesion formation. Despite these advantages, there are potential limitations like limited exposure of the operative field, small instruments which can be used only through fixed ports and thus limited manipulation of pelvic viscera.[7]

This study was done to share the initial experiences of laparoscopic surgeries in Nobel Medical College Teaching Hospital.

METHODS:

This prospective study was done at Nobel Medical College Teaching Hospital, Nepal from 1st February 2015 to 30th January 2016. All patients requiring laparoscopic surgeries like benign adnexal pathology, infertility, uterine pathology with uterus size less than 12 weeks, haemodynamically stable case of ectopic pregnancy and patient selected for laparoscopic tubal sterilization were enrolled in the study. Ethical approval was taken from the ethical review board of the institute. Informed consent was taken from the patients after explaining the type of procedure, its duration, complications and need of conversion to laparotomy if required.

A routine preoperative assessment was done which included detailed history, clinical examination, complete blood examination, pelvic ultrasonography, tumor markers and computed tomogram of abdomen and pelvis whenever required.

All the procedures were done after bowel preparation and under general anesthesia. During the procedure, the patient was placed in lithotomy trendelenburg position. Abdomen was opened with either closed or open technique using a Veress needle or a Hasson Cannula respectively. A one cm infraumbilical incision was given and pneumoperitoneum was created. Diagnostic laparoscopy was done by the standard method. Ovarian cystectomy was done either by enucleation of the cyst or with oophorectomy or by deroofing and aspiration of the cyst followed by removal of the cyst wall. Laparoscopy assisted vaginal hysterectomy (LAVH) was done according to the standard procedure. All the patients were given antibiotics for seven days and the patients of diagnostic laparoscopy were discharged after 24 hours and operative laparoscopy were discharged after 72 hours.

RESULTS:

Total 100 cases were operated during the study period including 25 cases of diagnostic and the rest 75 cases of operative laparoscopy. Major indication of diagnostic laparoscopy was infertility in 20 cases and chronic pelvic pain in five cases. There were a total of 53 cases of adnexal pathology. Type of the surgeries performed and type of adnexal pathology are given in Table 1 and 2 respectively. Dysfunctional uterine bleeding was the most common indication of LAVH. The other indications are given in Table 3. Table 4 shows the complications of various laparoscopic procedures. The conversion to laparotomy was done in two cases that ultimately required abdominal hysterectomy due to hemorrhage in one case and adhesion in one. Vault hematoma occurred in one case that was

Table 1: *Type of surgeries performed.*

Type of procedure	***n (%)***
Diagnostic laparoscopy	25 (25)
Adnexal pathology	53 (53)
Ectopic pregnancy	11 (11)
LAVH	8 (8)
Subserosal myomectomy	1 (1)
Sterilization	2 (2)
Total	**100 (100)**

Table 2: *Type of adnexal pathology operated on*

Adnexal pathology	***n (%)***
Ovarian cyst (Hemorrhagic/Serous)	35 (66.03)
Endometriotic cyst	15 (28.30)
Dermoid cyst	3 (5.67)
Total	**53 (100)**

Table 3: *Indications of LAVH*

Indications	***n (%)***
Dysfunctional uterine bleeding	4 (50)
Fibroid	2 (25)
Chronic pelvic pain	2 (25)
Total	**8**

Table 4: *Complications of laparoscopic surgeries*

Type of complications	***n (%)***
Port site bleeding	1 (20)
Port site infection	1 (20)
Conversion to laparotomy	2 (40)
Vault hematoma	1(20)
Total	**5 (100)**

managed conservatively with injectable antibiotics and tranexamic acid. Port site bleeding was present in one case which was managed with extra sutures and compression bandage.

DISCUSSION:

Laparoscopy in the recent years has gained popularity for diagnostic as well as therapeutic purposes, even for minor to major oncologic procedures. Surgeons all over the world are striving hard to embark on the voyage of laparoscopy surgery but we are still in an early crawling phase.

A total of 100 cases were performed successfully in the study period. We started our journey with diagnostic laparoscopy as all beginners do. The main indications were infertility and chronic pelvic pain. Nasir et al. also reported infertility as the most common indication of diagnostic laparoscopy.[8,9]

A total of 53 patients with adnexal pathology underwent laparoscopic surgery. The most common ovarian pathology in the study was hemorrhagic cyst and serous cystadenoma (*n*=35, 66%) followed by chocolate cyst (*n*=15, 28%). This is in contrast to the study done by Shah R. et al. where endometriosis was the commonest ovarian pathology followed by dermoid cyst.[9] Similar pathology was observed in a study done by Yuen et al.[10] Most of the patients with ovarian cyst underwent oophorectomy (*n*=38, 71.7%) followed by cystectomy in 10 patients. Five of the patients with chocolate cyst underwent deroofing and postoperative hormonal suppressive therapy because of adhesion and in one case we had to do laparotomy followed by total abdominal hysterectomy because of extensive adhesion. Conversion was done in another one patient because of hemorrhage. All three cases of dermoid cyst had spillage, but none of them developed chemical peritonitis. Ideally, they should have been operated without spillage; vigorous washing was done after tissue retrieval in all the cases.[11,12] Similar to our study, in a series by Shwaki et al., they had a spillage rate of 50% with no case of chemical peritonitis.[13]

The operative time depends on the experience of the surgeon, size of the tumor and the adhesions present. In the initial period, we took a long operative time especially in cases with endometriosis. The operative time progressively decreased after first 10 cases, and after 40 cases, there was further decline. This is the same as stated by Yuen et al. who performed surgeries for ovarian mass.[10]

Regarding ectopic pregnancy, laparoscopic management was done in hemodynamically stable patients. In all the 11 cases, we did total salpingectomy. Laparoscopy is the gold standard for surgical management of ectopic pregnancy. Out of 11 cases we had two cases of undiagnosed ectopic pregnancy. Therefore laparoscopy is a rewarding step to exclude ectopic pregnancy as commented by Condos et al. in his case series.[14]

Laparoscopic sterilization is not that popular in our context as government is running a free program with an incentive.

LAVH was done in eight cases mainly for dysfunctional uterine bleeding, fibroid and chronic pelvic pain. One of the patients in this study had to undergo abdominal hysterectomy due to hemorrhage from the vault. Devendra et al., in their series of 42 cases of LAVH, did conversion in two cases and concluded that LAVH is a safe and feasible alternative to abdominal hysterectomy.[15] Major complications were seen in none of the patients. Most complications occurred in first ten cases in a study by Altagassen et al.[16] They pointed out that the learning curve of thirty cases of LAVH was necessary to reach low level of complications. A study conducted in 1994 has shown that the risk of LAVH is same as that of abdominal and vaginal hysterectomy in skilled hands.[17] This is similar to another study by Ribeiro SC. et al. which showed that the safety of laparoscopic hysterectomy equals abdominal hysterectomy after the procedure is mastered.[18]

CONCLUSION:

The trend of gynecological laparoscopic surgery can be further enhanced by improving the learning curve keeping the patients safety as the priority. Our journey has shown that laparoscopy is a safe and useful procedure in gynecological practice.

CONFLICT OF INTEREST: None declared.

REFERENCES:

1. Sharp TH, Francis SI, Murphy AA. Diagnostic and operative laparoscopy. 10th ed. Rock JA, Jones HW. eds. Te Linde's operative gynecology. Philadelphia: Lippincott Williams & Wilkins; 2008. 319-35 p.

2. Vecchio R, Macfayden BV, Palazzo F. History of laparoscopic surgery. Panminerva Med . 2000 Mar;42(1):87-90.
3. Khanum Z, Khanum A, Rehman AU. Gynecological laparoscopic surgery: Learning curve. ANNALS. 2015;21(4):253-6.
4. American College of Obstetricians and Gynecologists. Operative Laparoscopy, ACOG Educational Bulletin no 239, American College of Obstetricians and Gynecologists, Washington, DC, USA, 1997.
5. Darzi A, Mackay S. Recent advances in minimal access surgery. BMJ. 2002;324(7328):31-4.
6. Pittaway DE, Takacs P, Bauguess P. Laparoscopic adnexectomy: a comparison with laparotomy. Am J Obstet Gynecol. 1994;171(2):389-91.
7. Berek JS, Berek DL. Gynecologic endoscopy. 15th ed. Berek JS, Berek DL, Hengst TC, Barile G. (eds). Berek's and Novak's gynecology. New York : Lippincott Williams and Wilkins; 2012. 740-802 p.
8. Nasir S, Hassan M, Tanau K, Abubakar PA, Ahmed Y, Umar AG. Experience with gynecological laparoscopy in a tertiary hospital, North-West Nigeria. Orient J Med. 2014;26:48-52.
9. Saha R, Shrestha NS, Thapa M, Shrestha J, Bajracharya J, Karki SC. Experiences of gynecological laparoscopic surgeries in a teaching hospital. J Nepal Health Res Counc. 2013 Jan;11(23);49-52.
10. Yuen PM, Yu KM, Yip SK, Lau WC, Roger MS, Chang A. A randomized prospective study of laparoscopy and laparotomy in the management of benign ovarian masses. Am J Obstet Gynecol. 1997 Jul;177(1):109-14.
11. Mettler L, Jacobs VR. Review of laparoscopic management of benign ovarian masses. Jain N., ed. State of the Art Atlas of Endoscopic Surgery in Infertility and Gynecology. New Delhi: Jaypee Brothers Medical Publishers (P) LTD; 2004. 132-40 p.
12. Kocak M, Dilbaz B, Ozturk N, Dede S, Altay M, Dilbaz S, et al. Laparoscopic management of ovarian dermoid cysts: a review of 47 cases. Ann Saud Med. 2004 Sep-Oct;24(5):357-60.
13. Shwaki O, Soliman I, Ebrashy A, Sadek ML, Bahnassy A. Laparoscopic management of ovarian dermoid cysts. MEFSJ. 2004:9(1):58-65.
14. Condos P. Experience with gynecological laparoscopy. ANZJOG. 1972 Aug;12(3):188-93.
15. Devendra K, Tang SK. Laparoscopically assisted vaginal hysterectomy- An alternative to abdominal hysterectomy. Singapore Med J. 2002;43(3):138-42.
16. Altagarseen C, Miachels W, Schneider A. Learning Laparoscopic hysterectomy. Obstet and gynecol. 2004 Aug;14(21):308-13.
17. Liu C, Reich H. Complications of total laproscopic hysterectomy in 518 cases. Gynecol Endosc. 1994;3:203-8.
18. Ribeiro SC, Ribeiro RM, Santos NC, Pinotti JA. A randomized study of total abdominal, vaginal and laparoscopic hysterectomy. Int J Gynaecol Obstet. 2003 Oct;83(1):37-43.