DOI: http://doi.org/10.4038/sljm.v26i2.42 *Sri Lanka Journal of Medicine Vol. 26 No.2, 2017*

CASE SERIES

FROM OPEN HYSTERECTOMY TO TOTAL LAPAROSCOPIC HYSTERECTOMY: A CASE SERIES

Gnanarathne D.M.S.T.[1], Perera W.M.E.[2], Sumanathissa R.P.J[2]

[1] *Base Hospital, Hatton – Dickoya*
[2]*Teaching Hospital Kandy*

Corresponding Author: Dr. D.M.S.T. Gnanarathne E mail: ssampatht@yahoo.com

Abstract

There is a global trend to move towards laparoscopic surgery in hysterectomies. We describe our experience in initiating laparoscopic hysterectomy in this article. We conducted 21 laparoscopic hysterectomies from February 2016 to January 2017 with one case needing conversion to vaginal hysterectomy. The mean time taken for surgery was 85.6 minutes and the range was from 60 minutes to 121 minutes. The mean drop of haemoglobin following surgery was 0.71g/dL. One patient developed acute retention of urine and one suffered a urinary tract infection following surgery. No surgical complications were noted. We conclude that despite initial difficulties, laparoscopic hysterectomies could be carried out in centers with reasonable facilities.

Keywords: *hysterectomy, laparoscopy*

Introduction

All over the world there is a trend to move towards minimally invasive surgical procedures from open surgical procedures. There is convincing evidence that abdominal hysterectomy is associated with a less favourable outcome compared with a vaginal or laparoscopic approach. When an abdominal approach is chosen, women experience reduced quality of life, a longer down time and a longer hospital stay[1].

The five available procedures for hysterectomy are abdominal hysterectomy (AH), vaginal hysterectomy (VH), laparoscopic supra-cervical hysterectomy (LASH), laparoscopically-assisted vaginal hysterectomy (LAVH) and total laparoscopic hysterectomy (TLH) [5,6,7]. With current evidence, VH has been the method of choice for removal of the uterus [8,9,10]. The laparoscopic surgical procedures can be viewed as alternatives and are particularly advantageous in obese patients, in those with adnexal pathology and patients with a narrow pubic arch with limited space in the vaginal canal[5, 10,11,12,13,14]. In recent years the LASH technique has gained popularity among patients and surgeons[7]. In electronic data bases, there are many publications on various laparoscopic hysterectomy procedures as well as newer techniques like single port hysterectomy and robotic surgeries.

In Sri Lanka, the commonest gynecological surgery performed is hysterectomy. The world is moving towards minimally invasive surgeries including robotic procedures. Current evidence suggests that laparoscopic procedures are more beneficial since laparoscopic hysterectomy carries a shorter hospital stay, less blood loss, less post-operative pain, less re-admissions and earlier resumption of day-to-day work [2,3,4].

Once benefits and risks have been considered and hysterectomy is identified

as the best treatment option, the surgeon has to decide the best method to perform the procedure. It should be the most suitable for that particular patient and cost effective. But, most gynaecolgists still prefer the more familiar open surgical procedures. In Sri Lanka, laparoscopic surgeries were limited to major centers like teaching hospitals a decade back due to unavailability of adequate instruments and other facilities. Except in a few centers, the common laparoscopic surgeries performed were laparoscopic sterilization, laparoscopic tubal patency tests with ovarian drilling and diagnostic laparoscopies for various gynecological pathologies. Even though the facilities are available in most hospitals, types of surgeries performed are still similar. Major laparoscopic procedures are still limited to few centers like teaching hospitals and few other places. This can be due to various reasons. In the initial stages, laparoscopic procedures consume more time than open surgeries. These procedures have a steep learning curve and need trained assistants and health care workers. Maintenance difficulties of sophisticated equipment, attitudes of surgeons and reluctance of moving from traditional methods to newer techniques are some other reasons for the non popularity of laparoscopic surgeries. In Teaching Hospital Kandy, we started total laparoscopic hysterectomy (TLH) for the first time, though other laparoscopic procedures like laparoscopic assisted vaginal hysterectomy and cystectomy were being performed regularly.

Here, we present the analysis of cases of TLH, performed from February 2016 to January 2017.

Materials and Methods

Initially we selected patients with normal body mass index (BMI), without any previous surgeries and patients with a mobile uterus. However, when the surgeon gained confidence, obese patients and patients with previous surgeries like appendicectomy, patients with past laparotomies and past caesarean sections were recruited.

In our unit, we had limited facilities to begin major laparoscopic surgeries. There was a zero degree ten-millimeter telescope and one monitor. We used Maryland grasping forceps and laparoscopic myoma screw to manipulate the uterus and bipolar diathermy and ultrasonic scissor for vessel coagulation and dissections of main pedicles. Monopolar electro surgical device with monopolar hook was used for vault dissection. In the first few cases, we used rectal ball to facilitate and to identify vaginal fornices for vault dissection but later we used colpotomiser to manipulate the uterus and to visualize the junction between uterine cervix and upper part of the vaginal wall. We delivered the uterus through the cut-opened vagina but on a few occasions bisection and morcellation of the uterus was performed to get the uterus out. Endoscopic suturing method was used to close the vault with No 1 suture material of polyglycolic acid.

Results

Twenty-one patients underwent total laparoscopic hysterectomies from February 2016 to January 2017.

One case was transformed from TLH to laparoscopic assisted vaginal hysterectomy due to a fault in electro surgical equipment. The median age of patients was 46 years and the range was from 37 to 52 years. Three patients were postmenopausal and all others were menstruating women. The heaviest patient was 72 kilograms with a BMI of 37 and the mean weight of patients was 59.4 kg. Nine women had heavy menstrual bleeding due to adenomyosis, eight patients had symptomatic fibroid uterus (the largest was 5cm into 6cm), three

patients had dysfunctional uterine bleeding and one patient had endometrial hyperplasia with atypia.

The mean time taken for surgery was 85.6 minutes and the range was from 60 minutes to 121 minutes. At the beginning, it took a longer time for a surgery but gradually with training, the time spent for a surgery reduced. The mean drop of hemoglobin after surgery was 0.71g/dL and range was from zero to 1.7 g/dL. The mode of the drop of hemoglobin in our study group was 0.3g/dL.

None of the patients required post-operative parenteral opioids to control their pain, except the routine intravenous pethidine or morphine during induction of general anaesthesia. Their pain was well managed with oral tramadol, paracetamol, and ibuprofen. All patients were mobilized 24 hours after the surgery.

With respect to adverse events, one patient had fever for 6 days and it settled with intravenous antibiotics. But later it was found to be due to lower respiratory tract infection. Another patient developed acute retention of urine but with an indwelling catheter she recovered without any residual effects.

Though patients were mobilized early and fit enough to be sent h ome 24 hours after the surgery, we kept all the patients for 3 days postoperatively as it was the policy of our unit.

Discussion

TLH is a widely practiced method of hysterectomy in the world. In Sri Lanka, we still prefer open hysterectomy to TLH due to various reasons. Only few centers in our country have well-established endoscopic surgical units and only a few gynecologists are competent and confident in laparoscopic procedures, especially laparoscopic hysterectomies. However, a growing number of gynecologists in the country are waiting to start TLH and hence we thought it would be beneficial to share our experience of TLH. Since the beginning of our case series, we used zero degree telescope and it was introduced through the umbilicus with a 10 mm main port. With these instruments and settings, we came across two main problems. When we operate a large uterus in a multiparous woman, the uterus frequently touched the telescope while manipulating because of the large size and laxity of the uterus due to previous childbirths. On the other hand, telescope was close to the pelvis as it was inserted through the umbilicus. But later, insertion of the main port midway between umbilicus and xiphisternum solved this problem was sloved.

The second problem with the telescope was more critical than the first. It was very difficult to get a clear view of the cervical part of the uterus especially when it was enlarged with posterior wall fibroids with the zero-degree telescope. As this was uncorrectable and a 30-degree telescope was not available, we proceeded with the existing one. We had to spend a longer time with a larger uterus especially for vault dissection. Therefore, it is better to have a zero degree as well as a 30 degree 10 mm main telescope for major laparoscopic surgeries.

In the placement of accessory ports, we used three ports. At the beginning of our procedure two of the ports were placed about 3 cm medial to anterior superior iliac spine along the line which connects umbilicus, and anterior superior iliac spine. The third port was at the supra pubic area 3 cm above symphysis pubis along the midline (Figure:1). It was easier to dissect the bladder and get the uterine arteries with this port positioning but it was quite difficult for endoscopic vault suturing.

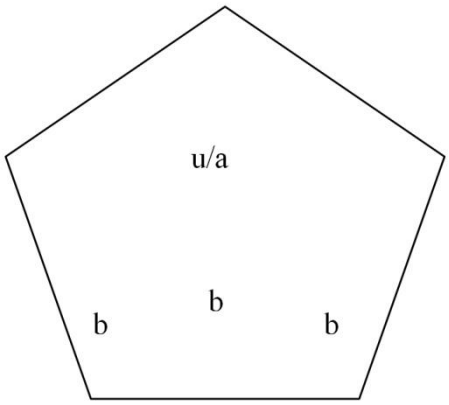

Figure1: Placement of ports at the start of the study

u - Umbilicus
a - Main 10 mm port
b - 5 mm accessory ports.

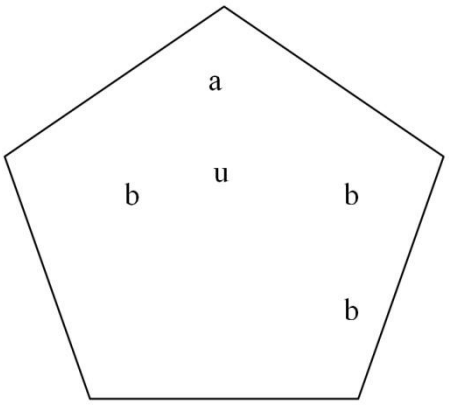

Figure 2: Revised placement of ports

u - Umbilicus
a - Main 10 mm port
b - 5 mm accessory ports

Later we changed our port positioning as in Figure 2. The 10 mm main port in midway between umbilicus and xiphisternum, 5 mm accessory port 3 cm above and medial to left anterior superior iliac spine, second 5 mm port midway between 10 mm port and first 5 mm port 4 cm lateral to umbilicus and third port parallel to the second port in right side. With these port positioning it became much more convenient to perform the procedure. This technique would be much easier if the surgeon is familiar with ipsilateral endoscopic suturing.

To close the vault, we used polyglycolic acid number one suture material and it was very difficult at the beginning with an assistant who was not familiar with endoscopic surgeries. Here we practiced several methods. The fastest method was to suture the vault vaginally. But this may not improve endoscopic stitching skills and at the same time some surgeons believe if it is TLH, vault of the vagina should be closed endoscopically. Furthermore, stitches from vagina to close the vault causes more vault dehiscence later on as well as granuloma formation. The other method is to get a full-length suture material and introduce it to the peritoneal cavity through cut opened vagina with a grasper while keeping a distal end outside the introitus. After which, we sutured the vault endoscopically and retrieved the needle with the thread through the vault from a grasper, which was introduced through suture space of the vault. The knot was applied externally and pushed into the vault. The third method was complete endoscopic suturing and knotting. Though it was time consuming at the beginning as we gained confidence the time spent for a surgery became shorter.

Consistency with instruments is one of the key areas to which we need to pay attention. It is very important to train and teach the nursing staff on how to clean, assemble, dissemble, sterilize and the electrophysiology of electro surgical equipment. The team concept is very important in endoscopic surgery. However competent the surgeon is an endoscopic surgery unit would not function smoothly without a good team. The team includes well-trained assisting doctors, assisting nurses, an efficient running nurse and a well-trained minor staff member. It is very important to have backup facilities as malfunction of one of the instruments can make the whole procedure a failure. It may be frustrating at the beginning and initiation of laparoscopic surgeries may be difficult but it is clearly beneficial to the country. To provide good quality healthcare to our

women, we need to move towards minimal access surgeries, which is the current trend in the world.

References:

1. Nieboer TE, Johnson N, Lethaby A, et al. Surgical approach to hysterectomy for benign gynaecological disease. Cochrane Database of Systematic Reviews. 2009; 8(3) CD003677. DOI: 10.1002/14651858.CD003677.pub4
2. Abenhaim HA, Azziz R, Hu J, Bartolucci A, Tulandi T. Socioeconomic and racial predictors of undergoing laparoscopic hysterectomy for selected benign diseases: analysis of 341487 hysterectomies. Journal of minimally invasive gynecology. 2008 Jan-Feb;15(1):11–15. DOI:10.1016/j.jmig.2007.07.014
3. Esdaile BA, Chalian RA, Del Priore G, Smith JR. Eadaile. A randomized comparison of total or supracervical hysterectomy: surgical compli-cations and clinical outcomes. Obstet Gynecol. 2004 Mar; 103(3):581-583. DOI:10.1097/01.AOG.0000113615. 48210.3d
4. Garry R. The benefits and problems associated with minimal access surgery. Aust N Z J Obstet Gynaecol. 2002 Aug;42(3):239–244. DOI: 10.1111/j.0004-8666.2002. 00239.x
5. Donnez O, Jadoul P, Squifet J, Donnez J. A series of 3190 laparoscopic hysterectomies for benign disease from 1990 to 2006: evaluation of complications compared with vaginal and abdominal procedures. BJOG. 2008. DOI:10.1111/j.1471-0528.2008. 01966.x
6. Müller A, Thiel F, Binder H, et al. Myome - Teil 2. Geburtsh Frauenheilk. 2004;64: R245–R260. DOI: 10.1055/s-2004-830463
7. Müller A, Thiel F, Jud S, Beckmann MW, Renner S. Hysterektomie - was ist zeitgemäß? Geburtsh Frauenheilk. 2007;67: R101–R124. DOI: 10.1055/s-2007-989348
8. Benassi L, Rossi T, Kaihura CT, et al. Abdominal or vaginal hysterectomy for enlarged uteri: a randomized clinical trial. Am J Obstet Gynecol. 2002; 187:1561–1565. DOI: http://dx.doi.org/10.1067/mob.20 02.127596
9. Ayoubi JM, Fanchin R, Monrozies X, Imbert P, Reme LM, Pons JC. Respective consequences of abdominal, vaginal and laparoscopic hysterectomies on women's sexuality. Eur J Obs Gynecol. 2003; 111:179–182. DOI: http://dx.doi.org/10.1016/S0301-2115(03)00213-6
10. Ribeiro SC, Ribeiro RM, Santos NC, Pinotti JA. A randomized study of total abdominal, vaginal and laparoscopic hysterectomy. Int J Gynecol Obstet. 2003; 83:37–43. DOI: 10.1016/S0020-7292(03)00271-6

10 Malur S, Possover M, Michels W, Schneider A. Laparoscopically assisted vaginal hysterectomy versus total abdominal hysterectomy: a prospective randomized trial. Gynecol Oncol. 2001; 80:239–244. DOI:10.1006/gyno.2000.6069

11. O'Hanlan KA, Huang GS, Lopez L, Garnier AC. Selective incorporation of total laparoscopic hysterectomy for adnexal pathology and body mass index. Gynecol Oncol. 2004; 93:137–143. DOI:10.1016/j.ygyno.2003.12.020

12. Johnson N, Barlow D, Lethaby A, Tavender E, Curr E, Garry R. Surgical approach to hysterectomy for benign gynaecological disease. Cochrane Database Syst Rev. 2006;(2) CD003677. DOI:10.1002/14651858.CD003677.pub3

13. Brill AI. Hysterectomy in the 21st century: different approaches, different challenges. Clin Obstet Gynecol. 2006; 49:722–735. DOI:10.1097/01.grf.0000211946.51712.42