

Total Laparoscopic Hysterectomy at Tertiary Care Hospital: Minimal Risk of Complications; Cross Sectional Study

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Abstract

Objective: As laparoscopic hysterectomy is gaining popularity, requires an evaluation of the risk of complications.

Study Design: Cross Sectional Study, non-Probability Consecutive Sampling.

Setting: The study was carried out in Department of Gynecology & Obstetrics Allied Hospital, Faisalabad Medical University, Faisalabad for one and half year from 1st November 2015 to 30th April 2017.

Methodology: The ethical committee of Faisalabad Medical University, Faisalabad approved the study protocol. 86 patients were enrolled for laparoscopic hysterectomy. Parameters studied included obesity, previous history of surgeries, abdominopelvic surgeries, patients with fibroids, pelvic organ prolapse and Ovarian Cyst meeting the inclusion criteria.

Result: Out of 86 patients presented for TLH. Complications were seen in only 2 patients, those were vulvovaginal fistula and ureter ligation. The factor responsible in these patients was history of previous surgery and multiple adhesion.

Conclusion: As laparoscopic hysterectomy is getting popular day by day. The overall complication rate in our study was 2.4%. These encouraging results show that it's a safe surgical technique, provided surgeons are experienced.

Key Words: Total Laparoscopic Hysterectomy (TLH), complications and cesarean sections (C-section).

Cite this article as: Zafar Sardar MF, Iqbal J, Javed N, Noor S, Niaz A Total Laparoscopic Hysterectomy at Tertiary Care Hospital: Minimal Risk of Complications; Cross Sectional Study. J. Soc. Obstet. Gynaecol. Pak. 2017; Vol 7(2):61-64.

Introduction

In the past, uterus has been removed either by the abdominal or vaginal route. Since it was first reported by Reich et al in 1989¹ laparoscopically assisted vaginal hysterectomy (LAVH) has gained widespread acceptance. Farquhar and Steiner² found that between 1990 and 1997, in the USA, there was a growth in number of hysterectomies performed with laparoscopic assistance (0.3 – 7.9%) with an associated decline in the proportion of

hysterectomies pertained abdominally. However laparoscopic hysterectomy with a specific increased risk of urologic complication with a several studies have demonstrated the advantages of operative laparoscopy over laparotomy. The risk of complications remaining acceptable: less estimated blood loss and analgesic administration, significant decrease in the length of hospital stay and recovery period.³⁻⁹

Authorship Contribution: ¹Concept and idea, ²Randomization of study, writing the article, ³Data Analysis, ^{1,3}Reviewed the study, ^{4,5}Literature search and help in References

Funding Source: none

Conflict of Interest: none

Received: May 12, 2017

Accepted: June 7, 2017

As the C. section rates are increasing more patients are presenting with history of prior surgeries in gynecological OPDs. Hysterectomy in previous surgeries always remains a challenging task for surgeons especially in laparoscopic surgeries. Most of our patients in our study were without history of previous surgeries but we included patients up to previous 2 cesarean sections.

The aim of this study was to determine the risk of intra and / or postoperative complications for patients who require TLH.

Methodology

The ethical committee of Faisalabad Medical University Faisalabad approved the study of protocol.

Settings: Period one and half years 1st November 2015 to 30th April 2017.

Sample Size: 86 Patients undergoing total Laparoscopic Hysterectomy.

Age of Patients: 45-60 years.

Sampling Technique: Non-Probability Consecutive Sampling

Inclusive Criteria:

- Uterine Size Uptil 16 weeks of pregnancy.
- BM1 less than 35.
- Patients with previous history of having one and two C-sections.
- Patients with the history of Utero Vaginal prolapse.
- Patients with the history of heavy menstrual bleeding.
- Laparotomy for ectopic pregnancy and myomectomy ovarian cyst and pelvic pain.

Exclusion Criteria:

- History of abdominal T.B.
- Prior History of Laparotomy due to endometriosis.
- Morbid obesity.
- Uterine size more than 18 weeks of Pregnancy.
- Gynecological malignancies
- Previous 3 or above C. sections.

Surgical Technique: Three port laparoscopic technique was carried out with a 12mm Supra umbilical port (Storz), one 10mm part on the

operator side and a 5mm part on the opposite side slightly lower than the supraumbilical port. Uterus was manipulated by the specially designed vaginal manipulator which is a version of KStorz. Pedicles were cauterized with liga-sure. Bipolar diathermy used for homeostasis.

Results

Over a period of one and half year 86 laparoscopic hysterectomies were performed for benign conditions only and including 42 patients with varying sizes of fibroids, largest one upto 16cm. 16 patients with 1st or 2nd degree UV prolapse. 18 patients presented with cyclical uterine bleeding. Twenty patients were with previous one C-section. 5 with previous two C-sections. 8 patients with prior laparotomy for ectopic pregnancy and 6 with previous laparotomy for abdominal myomectomy. Among this group of patients with previous surgeries, two urinary tract complications were observed as shown in table I.

Table 1: Complication in previous surgeries

History	Complication		Total	P-Value
	Yes	No		
Previous 1 C-Section	1	19	20	0.062
Previous 2 C-Section	1	4	5	
Previous history of ectopic pregnancy	0	8	8	
Previous history of myomectomy	0	6	6	
No previous Surgery	0	47	47	
Total	2	84	86	

Another group these patients undergo endometrial biopsy and on confirmation of benign pathology underwent laparoscopic hysterectomy. 8 patients were with adenomyosis and 2 with ovarian cyst. As shown in Table II no complication was observed in this group.

Out of these two complications, one of the patient was with previous two C-section with 12-week size

fibroid. Ureter was accidentally injured which was diagnosed on follow up visit. Ureteral injury was successfully corrected by urologist abdominally. Another patient was with previous one C-section and history of chronic pelvic pain. Uterus was firmly adherent with bladder wall. She presented with formation of VVF on her follow up visit. She was referred to Urology department and her fistula was successfully repaired.

Table II: Complications in various indications of TLH

Indications	Complications		Total	P-Value
	Yes	No		
Varying size of fibroid	2	39	41	0.856
V-prolapse	0	16	16	
AUB	0	18	18	
Ovarian Cyst	0	2	2	
Adenomyosis	0	8	8	
Ch. Pelvic pain	0	1	1	
Total	2	84	86	

Table III: Complication in obese patients

BMI	Complication		Total	P-Value
	Yes	No		
BMI < 25	0	26	26	0.021
BMI 25-30	0	42	42	
BMI 31-35	2	16	18	
Total	20	84	86	

As shown in Table III, no complications were observed in obese group. Which explain that obesity is minimum risk factor in laparoscopic hysterectomies.

Discussion

Since 1989, when first LAVH was performed and later people start doing TLH quite frequently. Still only few units are doing TLH all over in Pakistan. There are many factors responsible for the uptake of laparoscopic hysterectomy, in tertiary care hospital. Initial cost of the instrumentation long learning curve, initial longer operative periods. Studies have shown that time for surgery significantly reduced over 12-24

months of its practice.¹⁰ Our overall complication rate was 2.4 %. This compares favorably with the complication rates with laparoscopic hysterectomies in various studies¹¹ while some authors report specific increased risk of urologic complication.^{9,12,13} Some others demonstrate a lack of such an increase in their series.^{14, 15}

Similar results are shown in our study, only 2 patients suffered from urinary tract injury. Literature suggests that the commonest complication of hysterectomy is hemorrhage i.e. 4.7% regarding of the route of surgery.¹⁶⁻¹⁷ Our rate of intraoperatives blood loss was only 100-300 ml which opposes this study.

The majority of patients with ureteral injuries have no identifiable predisposing risk factors. Estimated incidence of ureteral injury during laparoscopic hysterectomy is 2.6 to 35 times more common (0.2% to 6.0%) than in abdominal hysterectomy.¹⁸ Ureteral injury accounted for 4.3% to 7% of the total laparoscopy complications.^{19, 20} In our study ureteral injury was only 1.63% which shows good learning curve of our surgeons. Diagnosis was confirmed by IVU. Electrocautery (unipolar or bipolar) is identified as the leading cause of laparoscopic ureteral injury in the literature. Injuries with loop suturing, trocars, laser devices, staples, and sharp dissection are also described. 3 locations carry increase risk for ureteral injury during laparoscopic surgeries: at the pelvic brim, where the ureters lie beneath the insertions of the infundibulopelvic ligaments; deep ovarian fossa where the ureter passes; and the ureteral canal.²¹

The most common type of urinary tract injury during laparoscopy is bladder perforation with an incidence of 0.02% to 8.3%.²² Pillet et al²³ reported the incidence of bladder injury during laparoscopic hysterectomy to range between 1%. Of these injuries, 33% were sharp electrocautery dissections, 21% were blunt, 30% were via laser, and 15% by scissors.²² Five percent of thermal injuries may lead to fistula formation.²⁴ Our study also shows similar results as one of our patient suffered from bladder fistula due to thermal injury.

Conclusion

The presented study showed that total laparoscopic hysterectomy is minimally invasive and is related to low post-operative complications. Patients who were

overweight or obese or with previous surgeries can undergo this surgery with minimal risk.

References

1. Reich H, De Caprio J, McGlynn F. Laparoscopic hysterectomy. *J Gynaecol Surg.* 1989;5:213–6.
2. Farquhar CM, Steiner CA. Hysterectomy rates in the United States 1990–1997. *Obstet Gynecol.* 2002;99(2):229–34.
3. Falcone T, Paraiso MF, Mascha E. Prospective randomized clinical trial of laparoscopically assisted vaginal hysterectomy versus total abdominal hysterectomy. *Am J Obstet Gynecol* 1999;180:955 – 962.
4. Perino A, Cucinella G, Venezia R, Castelli A, Cittadini E. Total laparoscopic hysterectomy versus total abdominal hysterectomy: an assessment of the learning curve in a prospective randomized study. *Hum Reprod* 1999;14:2996 – 2999.
5. Ferrari MM, Berlanda N, Mezzopane R, Ragusa G, Cavallo M, Pardi G. Identifying the indications for laparoscopically assisted vaginal hysterectomy: a prospective, randomised comparison with abdominal hysterectomy in patients with symptomatic uterine fibroids. *BJOG* 2000;107:620 – 625.
6. Kovac SR. Hysterectomy outcomes in patients with similar indications. *Obstet Gynecol* 2000;95:787– 793.
7. Chapron C, Fauconnier A, Goffinet F, Breart G, Dubuisson JB. Laparoscopic surgery is not inherently dangerous for patients presenting with benign gynaecologic pathology. Results of a meta-analysis. *Hum Reprod* 2002;17:1334 – 1342.
8. Garry R, Fountain J, Brown J, Manca A, Mason S, Sculpher M, Napp V, Bridgman S, Gray J, Lilford R. EVALUATE hysterectomy trial: a multicentre randomised trial comparing abdominal, vaginal and laparoscopic methods of hysterectomy. *Health Technol Assess* 2004; 8:1 – 154.
9. Johnson N, Barlow D, Lethaby A, Tavender E, Curr L, Garry R. Methods of hysterectomy: systematic review and meta-analysis of randomised controlled trials. *BMJ* 2005;330:1478
10. Cario G, Carlton M. Total laparoscopic hysterectomy with laparoscopic coagulating shears: a retrospective report of 200 consecutive cases: *Aust N Z J Obstet. Gynaecol.* 2001; 41(3):307
11. Cosson M, Lambaudie E et al. Vaginal laparoscopic or abdominal hysterectomies for benign disorders: immediate and early post-operative complications. *Eur J Obstet Gynaecol Reprod Biol.* 2001; 98:231–236
12. Harkki-Siren P, Sjöberg J, Tiitinen A. Urinary tract injuries after hysterectomy. *Obstet Gynecol* 1998;92:113 – 118
13. Mäkinen J, Johansson J, Tomas C, Tomas E, Heinonen PK, Laatikainen T, Kauko M, Heikkinen AM, Sjöberg J. Morbidity of 10 110 hysterectomies by type of approach. *Hum Reprod* 2001;16:1473 – 1478.
14. Donnez O, Jadoul P, Squifflet J, et al. A series of 3190 laparoscopic hysterectomies for benign disease from 1990 to 2006: evaluation of complications compared with vaginal and abdominal procedures. *BJOG.* 2009;116:492-500.
15. Karaman Y, Bingöl B, Güneş Z. Prevention of complications in laparoscopic hysterectomy: experience with 1120 cases performed by a single surgeon. *J Minim Invasive Gynecol.* 2007;14:78-84.
16. Clarke-Pearson DL, Geller EJ. Complications of hysterectomy. *Obstet Gynecol.* 2013;121(3):654-73. doi: 10.1097/AOG.0b013e3182841594
17. Rempen A. Laparoscopic assistance at vaginal hysterectomy: a literature review. *Arch Gynecol Obstet.* 1996; 258:55–64.
18. Tanaka Y, Asada H, Kuji N, et al. Ureteral catheter placement for prevention of ureteral injury during laparoscopic hysterectomy. *J Obstet Gynaecol Res.* 2008;34:67-72.
19. Saidi MH, Vancaillie TG, White AJ, et al. Complications and cost of multipuncture laparoscopy: a review of 264 cases. *Gynecol. Endosc.* 1994;3:85-90.
20. Härkki-Siren P, Sjöberg J, Kurki T. Major complications of laparoscopy: A follow-up Finnish study. *Obstet Gynecol.* 1999;94:94-98.
21. Ostrzenski A, Radolinski B, Ostrzenska KM. A review of laparoscopic ureteral injury in pelvic surgery. *Obstet Gynecol Surv.* 2003;58:794-799.
22. Gordon AG, Lewis BV. Complications of laparoscopy. In: Gordon AG, Lewis BV, DeCherney AH, eds. *Atlas of Gynecologic Endoscopy.* New York: Mosby-Wolfe; 1995:136-142.
23. Pillet MCL, Leonard F, Chopin N. Incidence and risk factors of bladder injuries during laparoscopic hysterectomy indicated for benign uterine pathologies: a 14.5 years experience in a continuous series of 1501 procedures. *Hum Reprod.* 2009;24:842-849.
24. Thompson JD. Vesicovaginal fistulas. In: Thompson JD, Rock JA, eds. *Te Linde's Operative Gynecology.* 7th ed. Philadelphia: JB Lippincott; 1992:788.