

## ORIGINAL ARTICLE

# Outcome of total Laparoscopic Hysterectomy in adult females with Benign Uterine Pathology

KASHAF NADEEM MALIK<sup>1</sup>, HUMA AFRIDI<sup>2</sup>, BEENISH RIAZ<sup>3</sup>, WAJIHA SHADAB<sup>4</sup>, ITAAT ULLAH KHAN AFRIDI<sup>5</sup><sup>1</sup>Senior Registrar Obs & Gynae<sup>2</sup>Associate Prof Obs & Gynae, Sialkot Medical College, Sialkot<sup>3</sup>Associate Prof Obs & Gynae, Islamic International Medical College, Islamabad<sup>4</sup>Associate Professor, Obs & Gynae, Islamic International Medical College, Islamabad<sup>5</sup>Professor of Pediatrics, Nawaz Sharif Medical College, GujratCorrespondence to Dr. Huma Afridi, Email: [humaafri81@yahoo.com](mailto:humaafri81@yahoo.com), Cell: 3214253315,03319324463

## ABSTRACT

**Background:** Laparoscopic hysterectomy literature showed varied results regarding outcome of laparoscopic hysterectomy. Moreover, there is no local evidence which could help us to determine the outcome of laparoscopic hysterectomy in females having uterine pathology.**Methods:** This descriptive case series was conducted in the Department of Obstetrics & Gynecology, Imran Idrees Teaching Hospital Sialkot for a period of 11 months from 1-1-2022 to 30-11-2022. Total 175 patients fulfilling selection criteria were enrolled in the study from emergency. Then all females underwent laparoscopic hysterectomy under general anesthesia. During surgery, operative time was noted. During surgery, bladder injury was noted if occurred (as per operational definition). Patients were shifted in post-surgical wards and were discharged from there after recovery.**Results:** In this study the main outcome variables were operative time, hospital stay and bladder damage. Mean operative time and hospital stay for patients who underwent laparoscopic hysterectomy was 170.93±49.18 minutes and 2.63±0.60 days. None of the patients had bladder damage.**Practical implication:** Laparoscopic hysterectomy is a safe, effective, and reproducible technique that can be adopted after completing a period of training required to standardize the technique. It has been associated with lesser blood loss, shorter stay in hospital, quick return to normal activity, and fewer surgical site infections when compared with abdominal hysterectomy. This approach must be established in our real, day-to-day clinical practice.**Conclusion:** Laparoscopic hysterectomy is an effective procedure for benign uterine pathology in terms of minimal complication rate (bladder injury), shorter hospital stay and an average mean operative time. Hence showing very promising results and a better outcome for the patients**Keywords:** Laparoscopic Hysterectomy, Benign Uterine Pathology, Operative time, Hospital Stay

## INTRODUCTION

The uterus is surgically removed and procedure is known as hysterectomy. The procedure can be subtotal (removal of uterine body while leaving the cervix intact, sometimes known as "supra-cervical") or total (removal of uterine body, along with fundus and cervix; also referred to as "complete"). Removal of the fallopian tubes and bilateral ovaries is frequently related to it (Bilateral salpingo-oophorectomy)<sup>1</sup>. The majority of benign illnesses lead to hysterectomies in >70% of cases, including menstrual irregularities, polyps, fibroids, uterine prolapse and prolonged pelvic pain<sup>2</sup>. Hysterectomies are performed using three different approaches including abdominal, vaginal and laparoscopic, the choice depending on the indications of surgery and preference of surgeon.

Nowadays, laparoscopy is generally well-known as a vital tool in gynecological surgeries<sup>3</sup>. One of the more sophisticated gynaecological minimally invasive treatments was the laparoscopic hysterectomy, first performed by Harry Reich in 1988. Although it has only been available for a little over 20 years, this treatment is still not widely used<sup>1</sup>. Minimally invasive hysterectomies have grown in importance and popularity<sup>4</sup>. Less surgical stress, much less blood loss, less post-operative pain, a shorter hospital stay, early discharge, a minimum surgical scar, and a lower incidence of wound infection are benefits of laparoscopic approach than abdominal approach<sup>1</sup>.

Mallick et al reported that total laparoscopic hysterectomy is a safe, reproducible procedure with low complication rate. From 2009-2014, rate of total laparoscopic hysterectomy increased approximately seven fold from 10% and 75% while the rate of total abdominal hysterectomy fell from 87% to 25%<sup>5</sup>. Laparoscopic surgery allows for lesser blood loss, shorter hospital stay, and overall decreased operation-related morbidity despite a longer operating duration<sup>6</sup>.

The pelvic magnification given by laparoscopy over laparotomy and the avoidance of a painful abdominal incision, which results in a quicker hospital stay and recovery time, are related to the surgical advantages of laparoscopic method over laparotomy<sup>7</sup>. One study found that operative time was 97.5 minutes, hospital stay was short i.e. 3 days and there were no complications<sup>7</sup>. Another study found that median operative time was 120 [range, 50-360] minutes while the complications occurred in 10.8% cases<sup>8</sup>. But another study found that the mean operative time was 227±28.8 min, mean hospital stay was 16.4±6.7 days and intraoperatively bladder injury was 0%<sup>8</sup>.

Rationale of this study is to determine the outcome of laparoscopic hysterectomy in females presenting with benign uterine pathology. Laparoscopic hysterectomy literature showed varied results regarding outcome of laparoscopic hysterectomy. Moreover, there is no local evidence which could help us to determine the outcome of laparoscopic hysterectomy in females having uterine pathology. So that in future, we can apply results of this study in local setting. This will help to improve our practice and knowledge and we will update guidelines to improve outcome of hysterectomy.

The objective of the study was to determine the outcome of laparoscopic hysterectomy in adult females with uterine benign pathology

## MATERIALS-&METHODS

This descriptive case series was conducted in the Department of Obstetrics & Gynecology, Imran Idrees Teaching Hospital Sialkot for a period of 11 months from 01-01-2022 to 30-11-2022. Sample size of 175 cases is calculated with 95% confidence level, d=1 and taking magnitude of mean operative time was 16.4±6.7 days with laparoscopic hysterectomy for females presenting with uterine tumor

**Sampling-technique:** Non-probability, consecutive sampling

Received on 01-12-2022

Accepted on 06-01-2023

**Sample selection:** Females aged 35-75 years, parity <5, planned to undergo laparoscopic hysterectomy were enrolled, which was done in females with excessive uterine bleeding due to uterine fibroids (failed medical treatment or hysteroscopic resection), uterine adenomyosis, dysfunctional uterine bleeding uterine size equivalent to <14 weeks of gestation, endometrial hyperplasia (recurrence of postmenopausal bleeding and endometrial thickness >8mm after endometrial resection), recurrent endometriosis. Females with malignant disease of reproductive organs, metastatic disease confirmed clinically or radiologically were excluded.

**Data collection procedure:** Patients were enrolled from emergency Department. Informed consent was taken. Demographic details like name, age, parity, BMI, history of hypertension, history of diabetes, duration of tumor will be noted. Then all females underwent laparoscopic hysterectomy under general anesthesia. During surgery, operative time was noted in terms of minutes required to conduct the surgery from time of incision until closing of skin. During surgery, bladder injury was noted if penetrating injury caused by something piercing through the bladder intraoperatively. After surgery, patients were in wards and were followed-up till discharge. Total hospital stay was noted in terms of days required to stay in hospital till locomotion of female and able to move on her own, take oral feed. All this information was recorded on proforma.

**Data analysis:** SPSS v. 21 was used to enter and analyze the data. Quantitative variables like age, BMI, duration of tumor, operative time and hospital stay was presented as mean and standard deviation. Qualitative variables like history of hypertension, history of diabetes, bladder injury was presented as frequency and percentage. Parity was also presented as frequency.

## RESULTS

Mean age of women in this study was 52.01±10.28 years. Among women 38(21.7%) were primiparous and remaining 137(78.28%) women were multiparous. As per BMI criteria 60(34.3%) women BMI was normal, 56(32%) were overweight and 59(33.7%) were obese. There were 89(50.9%) women who had history of hypertension. There were 96(54.9%) women who had history of diabetes. The mean duration of symptoms as 10.51±4.61 months. Among women 36(20.6%) presented with uterine fibroid, 34(19.4%) with uterine Adenomyosis, 39(22.3%) with Dysfunctional uterine bleeding, 37(21.1%) with endometrial hyperplasia and 29(16.6%) with recurrent endometriosis. Mean operative time for patients was 170.93±49.18 minutes. Minimum and maximum operative time was 90 and 250 minutes respectively. Mean hospital stay for patients was 2.63±0.60 days. Minimum and maximum hospital stay was 2 and 4 days respectively. Bladder damage was not seen in any of the patients. Mean operative time did not show statistically significant difference, however hospital stay showed statistically significant difference for the age groups 35-50 years and 51-70 years patients i.e., operative time (p-value)=0.739 and hospital stay (p-value)=0.049. Parity of the women had no significant effect on operative time as well as on hospital stay. Operative time (p-value)=0.750 and Hospital stay (p-value)=0.792. Mean operative time and hospital stay for patients having normal BMI was 171.08±47.81 and 2.51±0.59. For overweight patients mean operative time and hospital stay was 175.44±49.30 and 2.83±0.65 and for obese patients mean operative time and hospital stay was 166.49±49 and 2.55±0.53 respectively. Patients with and without history of hypertension and diabetes did not show statistically significant difference for operative time and hospital stay i.e. Operative Time (Hypertension) p-value= 0.383 and Operative Time (Diabetes) p-value= 0.373 & Hospital Stay (Hypertension) p-value= 0.061 and Hospital Stay (Diabetes) p-value= 0.473. Patients who had symptoms from <6months, 7-12 months or >12 months, the statistically insignificant difference for operative time and hospital stay i.e., Operative Time (p-value)= 0.726 & Hospital Stay p-

value= 0.220. The mean operative time for uterine fibroids was 165.16±45.73min, for uterine adenomyosis was 174.14±48.62min, for dysfunctional uterine bleeding as 179.12±49.38min, for endometrial hyperplasia was 163.56±53.66min and for recurrent endometriosis was 172.68±48.92min. The mean hospital stay for uterine fibroids was 2.58±0.55 days, for uterine adenomyosis was 2.52±0.66 days, for dysfunctional uterine bleeding as 2.61±0.67 days, for endometrial hyperplasia was 2.83±0.60 days and for recurrent endometriosis was 2.58±0.50 days. Age, Parity, BMI, Hypertension and Diabetes had no significant association with bladder damage as none of the patients had bladder damage. Duration of symptoms and uterine pathology had no significant association with bladder damage as none of the patients in this study had bladder damage.

## DISCUSSION

The second most common surgical operation in the female genital system is a hysterectomy, followed by caesarean sections. As per previous reviews, vaginal route should, whenever possible, be the preferable method for this operation<sup>9</sup>.

Laparoscopy should be used in cases of relative or absolute contraindications to vaginal hysterectomy in order to prevent needless laparotomies.<sup>9</sup> Nevertheless, the majority of total hysterectomies are still carried out around the world using the conventional open abdominal method, despite the guidelines emerging from the scientific literature<sup>9</sup>. The laparoscopic method is also linked to a shorter hospital stay, a decreased incidence of serious complications, and overall morbidity.

In this study the main outcome variables were operative time, hospital stay and bladder damage. Mean operative time and hospital stay for patients who underwent laparoscopic hysterectomy was 170.93±49.18 minutes and 2.63±0.60 days. None of the patients had bladder damage.

One study found that operative time was 97.5 minutes, hospital stay was short i.e. 3 days and there were no complications<sup>7</sup>. In this study mean operative time was 170.93±49.18 which was higher and hospital stay was 2.63±0.60 slightly lower when compared with above mentioned study. As well as none of the patients had bladder damage.

Stefano Uccella in his study found that median operative time was 120 [range, 50-360] minutes while the complications occurred in 10.8% cases<sup>6</sup>. Kong TW in his study reported that the mean operative time was 227±28.8min, mean hospital stay was 16.4±6.7days and intra-operatively bladder injury was 0%.<sup>8</sup> As compared to Kong TW findings operative time and mean hospital stay in this study was quite lower.

As per findings of Stefano Uccella's expertise, laparoscopic surgery's great focus and attention enable the removal of a significant amount of large uterine disease with minimally invasive procedures. Even though the procedure takes longer time, there is less blood loss, a quicker hospital discharge, and less total surgery-related morbidity thanks to this strategy<sup>6</sup>. An earlier investigation into the impact of operating time on laparoscopic hysterectomy outcomes revealed that cases lasting more than 240 minutes result in significantly higher morbidity.<sup>11,12</sup> Faster return to normal activities, fewer fever episodes, shorter hospital stays, lower intraoperative blood loss, less wound problems, less post-operative pain, and decreased mortality are just a few advantages that laparoscopic hysterectomy provides over the abdominal approach<sup>9,13,14</sup>.

Contrary to the abdominal technique, laparoscopic hysterectomy may need more time during surgery<sup>9,11,15</sup>. Regardless of the surgical technique, longer operating times have been linked to unfavourable results<sup>11,16,17</sup>. There is a lack of information on individuals who may require lengthy operations or who might benefit from a different surgical strategy. It is unknown if there is a certain operating time for benign hysterectomy at which a drawn-out laparoscopic operation loses out against a quicker abdominal procedure.

## CONCLUSION

Laparoscopic hysterectomy is an effective procedure for benign uterine pathology in terms of minimal complication rate (bladder damage), shorter hospital stay and an average mean operative time. Hence showing very promising results and a better outcome for the patients.

**Conflict of interest:** Nothing to declare

## REFERENCES

1. Wakhloo A, Dubey S, Gupta S. Outcome of Laparoscopic and Abdominal Hysterectomy: A Comparative Study. *JK Science* 2015;17(4):177.
2. Sridhar M, Susmitha C. Comparison of open abdominal hysterectomy and total laparoscopic hysterectomy: a study in a teaching hospital. *International Surgery Journal* 2016;3(1):296-300.
3. Donnez O, Donnez J, Dolmans M-M, Dethy A, Baeyens M, Mitchell J. Low pain score after total laparoscopic hysterectomy and same-day discharge within less than 5 hours: results of a prospective observational study. *Journal of minimally invasive gynecology* 2015;22(7):1293-9.
4. Perron-Burdick M, Calhoun A, Idowu D, Pressman A, Zaritsky E. Minilaparotomy vs laparoscopic hysterectomy: comparison of length of hospital stay. *Journal of minimally invasive gynecology* 2014;21(4):619-23.
5. Mallick R, English J, Waters N. Total laparoscopic hysterectomy versus total abdominal hysterectomy in the treatment of benign gynaecological disease: a retrospective review over 5 years. *Gynecological Surgery* 2016;13(4):359-64.
6. Uccella S, Morosi C, Marconi N, Arrigo A, Gisone B, Casarin J, et al. Laparoscopic versus open hysterectomy for benign disease in uteri weighing > 1 kg: a retrospective analysis on 258 patients. *Journal of minimally invasive gynecology* 2018;25(1):62-9.
7. Uccella S, Casarin J, Marconi N, Cromi A, Morosi C, Gisone B, et al. Laparoscopic versus open hysterectomy for benign disease in women with giant uteri ( $\geq 1500$  g): feasibility and outcomes. *Journal of minimally invasive gynecology* 2016;23(6):922-7.
8. Kong TW, Lee KM, Cheong JY, Kim WY, Chang S-J, Yoo S-C, et al. Comparison of laparoscopic versus conventional open surgical staging procedure for endometrial cancer. *Journal of gynecologic oncology* 2010;21(2):106-11.
9. Aarts JW, Nieboer TE, Johnson N, Tavender E, Garry R, Mol BWJ, et al. Surgical approach to hysterectomy for benign gynaecological disease. 2015(8).
10. Loring M, Morris SN, Isaacson KBJJotSoLS. Minimally invasive specialists and rates of laparoscopic hysterectomy. 2015;19(1).
11. Catanzarite T, Saha S, Pilecki MA, Kim JY, Milad MPJJomig. Longer operative time during benign laparoscopic and robotic hysterectomy is associated with increased 30-day perioperative complications. 2015;22(6):1049-58.
12. Hanwright PJ, Mioton LM, Thomassee MS, Bilimoria KY, Van Arsdale J, Brill E, et al. Risk profiles and outcomes of total laparoscopic hysterectomy compared with laparoscopically assisted vaginal hysterectomy. 2013;121(4):781-7.
13. Walsh CA, Walsh SR, Tang TY, Slack MJEJoO, Gynecology, Biology R. Total abdominal hysterectomy versus total laparoscopic hysterectomy for benign disease: a meta-analysis. 2009;144(1):3-7.
14. Wisner A, Holcroft CA, Tulandi T, Abenhaim HAJGs. Abdominal versus laparoscopic hysterectomies for benign diseases: evaluation of morbidity and mortality among 465,798 cases. 2013;10(2):117-22.
15. Ditto A, Martinelli F, Bogani G, Gasparri ML, Di Donato V, Zanaboni F, et al. Implementation of laparoscopic approach for type B radical hysterectomy: a comparison with open surgical operations. 2015;41(1):34-9.
16. Procter LD, Davenport DL, Bernard AC, Zwischenberger JBJJotACoS. General surgical operative duration is associated with increased risk-adjusted infectious complication rates and length of hospital stay. 2010;210(1):60-5. e2.
17. Jackson TD, Wannares JJ, Lancaster RT, Rattner DW, Hutter MMJSe. Does speed matter? The impact of operative time on outcome in laparoscopic surgery. 2011;25(7):2288-95