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A Comparative Study between Total Laparoscopic Hysterectomy and Total Abdominal Hysterectomy on 50 Cases in CMH, Dhaka

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ABSTRACT

Background: Since the introduction of by Reich in 1989, Laparoscopic hysterectomy is achieving great popularity nowadays worldwide. Our people are becoming increasingly interested in new advances in this field of surgery. The aim of this study was to compare the per-operative and postoperative outcomes and complications of Total Laparoscopic Hysterectomy (TLH) and Total Abdominal Hysterectomy (TAH) performed for same indications in our hospital.

Materials and methods: We performed surgical procedures at Department of Obstetrics and Gynaecology of Combined Military Hospital, Dhaka, between November 2013 and April 2014. Twenty five patients who underwent TLH (Group 1) and 25 patients who underwent TAH (Group 2) were included prospectively in this study. The mean age of the cases, Body Mass Index (BMI) duration of operation, the amount of blood loss, rates of complications and post-operative hospital stay were compared for two groups.

Results: The two groups were similar in terms of age, BMI, uterine size, parity and indications of hysterectomy. The mean operative time was significantly longer in group 1 than group 2 (90.12±9.12 vs. 55.48±10.11 minutes. The mean duration of hospital stay was significantly shorter in group 1 compared to the group 2 (3.10±1 vs. 6.30±1.00 days. Per-operative haemorrhage was within normal limit in 92% cases of TLH, but it was 80% cases TAH. 96% cases of TLH did not required post-operative blood transfusion,in comparison to 92% in TAH group. Significantly higher proportion of patients ambulate within 12 hours in group 1 compared to group 2. Injectable antibiotics were more needed in case of TAH. Overall patients' satisfaction was better in TLH group than TAH group.

Conclusion: TLH was safe and feasible method for properly selected patients. Its advantages were faster ambulation, less per-operative blood loss, pain and shorter hospital stays in expense of longer operating time.

Key words: Total laparoscopic hysterectomy; Total abdominal hysterectomy; Complications.

Introduction

Hysterectomy is the most common gynecological procedure[1,2]. Common indications are abnormal uterine bleeding, fibroid uterus, post-menopausal bleeding, ovarian tumor of perimenopausal ladies[3]. There are different types of hysterectomy. The most common is abdominal hysterectomy comprising 66% of all hysterectomies followed by the vaginal hysterectomy[4]. Though there are three approaches in hysterectomy-abdominal, vaginal, laparoscopic, 70-80% of all hysterectomies are performed abdominally[5].

Gynecological surgical laparoscopy started to be used by Palmer at the end of 1950s. While surgical procedures like adhesiolysis, cyst aspiration and ovarian biopsy were performed firstly, Reich et al reported first laparoscopic assisted vaginal hysterectomy case in 1989[6]. Since then, when compared with abdominal hysterectomy, because of lower morbidity and faster healing period, laparoscopic hysterectomy started to be used progressively as an alternative of abdominal hysterectomy. But because necessity of comprehensive surgical education and equipment today still a lot of gynecologists prefer abdominal surgery[7]. However, the challenges and limitation of this procedure are still debatable, especially for a country like Bangladesh where resources are scarce. The outcome of laparoscopic hysterectomy and the technique used in performing the operation will depend on various factors, such as the indication for hysterectomy, associated comorbidity, surgeon's experience and availability of the necessary equipment[5,8].

In this context, aim of this prospective observational study was to evaluate and compare the per-operative and post-operative complications and outcome of Total Laparoscopic Hysterectomy (TLH) and Total Abdominal Hysterectomy (TAH) cases which were performed in our hospital.

Materials and methods

This prospective observational study was conducted in Gynecology and Obstetrics Department of Combined Military Hospital, Dhaka, Bangladesh. Fifty patients age 35 years and above with parity two or more, had hysterectomy operation for benign indications between November 2013 and April 2014 were included in this study. Patients with extensive pelvic adhesion, multiple fibroid in uterus with size ≥20

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weeks, body mass index >35 kg/m^2, suspected or confirmed malignant disease of any part of the genital tract were excluded. According to which surgical procedure performed, patients are chosen consecutively and divided into two groups. While group 1involved 25 patients who had TLH operation, group 2 involved 25 patients who had TAH operation. Patients were operated by same surgical team and had same pre-operative preparation. TAH was performed pfannenstiel incision with classical technique which was described for benign indications[9]. TLH operation, was done as described by Osman[10]. Patients were discharged when their pain score was acceptable and could be relieved by oral medication alone, they could tolerate soft diet and were able to urinate on their own.

Main outcome variables of interest were operating time (Time between skin incision and last skin suture in cases of TAH and between insertion of Veress needle and skin closure of the trocar sites in cases of TLH) intraoperative complications (Excessive bleeding those required transfusion peroperatively, injury to major vessel or organ) postoperative pain, postoperative hemoglobin level, postoperative hospital stay (From the day of surgery to day of discharge) and postoperative complications (Febrile morbidity, wound infection, postoperative secondary haemorrhage). Postoperative pain was assessed by using Visual Analogue Scale (VAS) of 0 to 10 four hourly on day of operation and eight hourly on 1st POD onwards. Finally, overall patients' satisfaction was measured by 3 point liker scale (Highly satisfied, satisfied and not satisfied).

Statistical analysis was conducted with SPSS-21. Continuous data were expressed either as mean ± standard deviation or median and interquartile range and compared by Student-t tests or Mann Whitney U test respectively. Categorical variables were expressed as frequency (Percentage) and compared between groups by either Chi square tests or Fisher's exact test. p<0.05 value was regarded as statistically significant. Written informed consent was taken from each patient and the study was conducted with prior approval of the institutional ethical clearance committee.

Results

The distribution of baseline characteristics of the patients was showed in Table I. The mean age (46.36±6.94 vs. 46.64±6.36 years, p-0.817) and the mean BMI (26.84±5.71vs. 27.01±4.99kg/m^2, p-0.141) for the TLH and TAH groups respectively were comparable. We were able to do the planned surgical procedure in both modalities. There was no significant difference noted between the two groups regarding parity, uterine size or the indication of surgery.

Table I : Patients' characteristics and operation indications.

Variables	TLH (n=25)	TAH (n=25)	P value
Age, years	46.36±6.94	46.64±6.36	0.817[a]
BMI	26.84±5.71	27.01±4.99	0.141[a]
Parity	3.5 (2-4)	3.5 (2-4)	0.889 [c]
Uterine size in weeks	8.45±3.12	10.12±4.07	0.084[a]
Indications of surgery			
DUB	12 (48)	11 (44)	0.841[b]
Fibroid	7 (28)	6 (24)	0.815[b]
Adenomyosis	3 (12)	3 (12)	1.0[d]
Chronic PID	2 (8)	3 (12)	0.954[d]
Endometriosis	1 (4)	2 (8)	1.0[d]

TLH-Total Laparoscopic Hysterectomy, TAH-Total Abdominal Hysterectomy. Values are given as mean ± SD, median (Interquartile range) or n (%) as appropriate. [a]Student's t test, [b]Chi-square test, [c] Mann Whitney U test, [d]Fisher's exact test.

Operation time was significantly longer in TLH group compared to TAH group (90.12±9.12 minutes versus 55.48±10.11 minutes, p<0.001). There was no internal organ injury during operation in TLH group, but in one cases in TAH group bladder was injured during operation. Only five patients in TAH group and two in TLH group had excessive per-operative bleeding that necessitate blood transfusion and the difference was not statistically significant (Table II).

Table II : Comparison of per-operative events between two groups.

Variables	TLH (n=25)	TAH (n=25)	p value
Operating time (Minute)	90.12±9.12	55.48±10.11	<0.001[a]
Excessive peroperative bleeding	2 (8)	5 (20)	0.221[d]
Bladder injury	0 (0)	1 (4)	NA
Bowel injury	0 (0)	0 (0)	NA
Uterine injury	0 (0)	0 (0)	NA

TLH-Total Laparoscopic Hysterectomy, TAH-Total Abdominal Hysterectomy. Values are given as mean ± SD, or n (%) as appropriate. [a]Student's t test, [d]Fisher's exact test. NA: Not Applicable.

Mean hospitalization time was shorter for patients who underwent TLH than patients who undergone TAH and this was statistically significant (3.1±1.0 day vs. 6.3±1.0, p=0.001). Ambulation was early and injectable antibiotic was required for less duration in TLH group compared to their counterpart. There were no significant differences between the two groups regarding complications like fever, secondary hemorrhage, wound infection, wound dehiscence (Table III).

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Table III : Comparison of post-operative outcome between two groups.

Variables	TLH (n=25)	TAH (n=25)	p value
Ambulation within 12 hours	22 (88)	4 (16)	0.001[b]
Days on injectable antibiotic	1 (1-2)	2 (1-3)	0.001 [c]
Postoperative pain score (Scale of 10)	4.24±1.53	5.36±1.89	0.074[a]
Need blood transfusion	1 (4)	2 (8)	0.552[d]
Secondary hemorrhage	1 (4)	2 (8)	0.552[d]
Fever	1 (4)	1 (4)	1.0[d]
Wound infection	1 (4.0)	3 (12.0)	0.415[d]
Wound dehiscence	2 (8.0)	1 (4.0)	1.0[d]
Length of hospital stay in days	3.10±1.00	6.30±1.0	0.001[a]

TLH-Total Laparoscopic Hysterectomy, TAH-Total Abdominal Hysterectomy. Values are given as mean ± SD, median (Interquartile range) or n (%) as appropriate. [a]Student's t test, [b]Chi-square test, [c] Mann Whitney U test, [d]Fisher's exact test.

The overall patient's satisfaction was better in the group of TLH than TAH. 96% of the patients underwent TLH were highly satisfied compared to 72% in the TAH group (Figure 1).

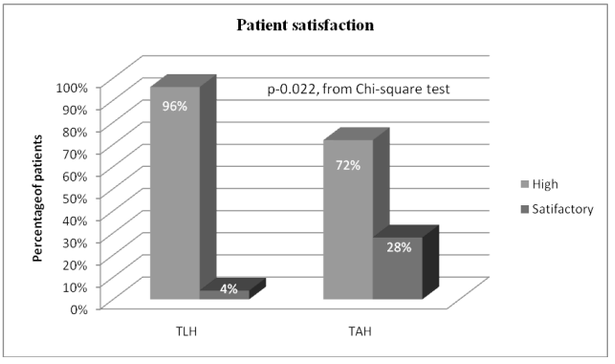

Figure 1 : Overall satisfaction of the patients with their operation.

Discussion

Laparoscopic hysterectomy is currently accepted as a safe and efficient way to manage benign uterine pathology in selected patients. The present study was aimed to compare the safety, efficacy, complications and acceptability between TLH and TAH in patients with pelvic pathology which traditionally required abdominal approach for hysterectomy in our context. It has been widely reported that TLH was associated with lower complication incidence and lower postoperative pain, less blood loss, shorter hospitalization period, shorter healing time and earlier turn back to daily activities[11]. Here we have discussed the previous reported outcomes with present study.

Previous studies consistently reported the shorter hospitalization with TLH compared to TAH[11]. In the current study the mean duration of hospital stay was around 3 and 6 days in TLH and TAH group respectively. According to the previous study it has been reported that per-operative blood loss is less in the TLH group compared to the abdominal surgery[12]. In agreement with this study we found that per operative blood loss in the TLH group was less than in the TAH group. Two of the subjects required in the TLH group, whereas 5 patients in TAH required so.

The overall complication rate in the current study compared favorably with that reported in other TLH studies[10-12]. Relatively low rate of complications encountered in the present study was probably attributable to the small number of patients. Some studies have demonstrated that a low complication rate can be achieved by extensive training in laparoscopy and optimizing the technique[13,14]. Johnson et al published a meta-analysis of prospective randomized trial and stated that the rate of urinary complications were higher with laparoscopy[11]. The complication rate for TLH is decreased due to increased surgical experience at our institute, thus less experienced gynaecolocal surgeons may experience higher complications when attempting TLH. In our study no internal organ injury was observed in TLH group. However, bladder injury was noted in one case in TAH group. Few patients from both groups developed fever wound infection and wound dehiscence. Though there were no statistical differences regarding the complication rates between two groups, a higher trend was observed in TAH group.

Limitations

Some factors should be kept in mind during consideration of the study results. Sample size was small and selected purposively which limits its ability to generalize the results. Lack of randomization was another limiting factor.

Conclusion

Laparoscopic hysterectomy is superior to conventional hysterectomy for surgeons in terms of well visualization of pelvic anatomy, ability to minimize blood loss, substantial and dynamic access to uterine vessels, vagina, rectum from many angles. Though operating time in TLH is longer, it is more beneficial than the traditional TAH for decreasing the length of postoperative hospital stays and intra operative blood loss with some difference in operative complications. Overall patients' satisfaction was in favor of TLH compared to TAH.

Recommendations

A large scale study with randomized design is necessary to validate the results of the present study. In the meantime initiative should be strengthen to develop infrastructure and train up personnel in all public institutes for laparoscopic gynecological surgery.

Disclosure

Both the authors declared no competing interests.

References:

1. The Canadian Institute for Health Information Health Indicator Reports; Hysterectomy. 2006.
Available at: https://secure.cihi.ca/free_products/ Healthindicators. Accessed 3 January 2014.

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2. Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion. http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5105a1.htm. Accessed 3 January 2014.

3. Akhter S, Nazneen R. Clinical evaluation of total abdominal hysterectomy - a prospective study in a tertiary care hospital. NIMCJ. 2015;6(2):76-77.

4. Sokol AI, Green IC. Laparoscopic hysterectomy. ClinObstet Gynecol. 2009;52(3):304-312.

5. Ila I, Ghani A, Ferdouse J, Khatun A, Rahman S, Hasan J, Hassan MR. Limitations in Total Laparoscopic Hysterectomy in Bangladesh. JSSMC. 2018;10(1):3-5.

6. Reich H. New techniques in advanced laparoscopic surgery. BaillieresClinObstetGynaecol. 1989;3:655-681.

7. Deprest JA, Munro MG, Koninckx PR. Review on laparoscopic hysterectomy. ZentralblGynakol. 1995;117(12):641-651.

8. Saleh MM, Seoud AA, Zaklama MS. Challenges of laparoscopic hysterectomy: A 10-year experience in UK hospitals. Gynecol Surg.2008;5(2):115–120.

9. Mattingly RF, Thompson JD. Leiomyomata uteri and abdominal hysterectomy for benign disease. In TeLinde's Operative Gynecology, 6th ed. Edited by RF Mattingly, JD Thompson. Philadelphia, JB Lipincott. 1985;230-242.

10. Balc O. Comparison of total laparoscopic hysterectomy and abdominal hysterectomy. Turk J Obstet Gynecol. 2014;11(4):224-227.

11. Johnson N, Barlow D, Lethaby A, Tavender E, Curr L, Garry R. Methods of hys-terectomy: Systematic review and meta-analysis of randomized controlled trials. BMJ. 2005;330:1478.

12. Kanmani M, Govindarajan M, Selvaraj V. Comparative study of surgical results between total abdominal hysterectomy and total laparoscopic hysterectomy in a tertiary hospital: A 2 year retrospective study. Int J ReprodContraceptObstetGynecol. 2018;7(3):1019-1023.

13. Nanavati AM, Gokral SB. A prospective randomized comparative study of vaginal, abdominal and laparoscopic hysterectomies. J ObstetGynaecol India. 2016;66(1):389-394.

14. Ajjammanavar V, Jayashree S, Amrutha B. Total laparoscopic hysterectomy versus total abdominal hysterectomy: A retrospective study. J Evid Based Med Healthcare. 2015;2(41):7019-7025.