

A Prospective, Comparative, Observational Analytical Study to Determine the Clinical Profile of Patients with Benign Gynecological Disease Subjected for Hysterectomy

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Conflict of interest: Nil

Abstract

Aim: A prospective, comparative, observational, analytical study to determine the clinical profile of patients with benign gynecological disease subjected for hysterectomy (TAH vs TLH).

Materials and methods: A prospective observational analytical study was conducted in the Department of Obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar, India and private set-up for 1 year from January 2021 December 2021 after taking the approval of the protocol review committee and institutional ethics committee. Total sample size was 50 cases in each group. Women with benign gynecological disease opting for hysterectomy, perimenopausal age group between 40-49 years and uterus size \leq 16 weeks of pregnant size were included in the study.

Results: Among 100 study subjects, 50 underwent Total Abdominal Hysterectomy (TAH) and other 50 underwent Total Laparoscopy Hysterectomy (TLH). In TAH group, highest proportion of patients were aged 40 years (18%) followed by 42 years (10%) and 46 years (10%). In TLH group, highest proportion of patients were aged 46 years (20%) followed by 47 years (12%) and 48 years (12%). It was observed that the distribution of age between the two groups was different, but this difference was not statistically significant. In TAH group, maximum number of patients had BMI in the range 25 – 29 (62%) followed by 19 – 24 (24%) and 30 and above (14%). In TLH group, maximum of patients had BMI in the range 25 – 29 (62%) followed by 19 – 24 (26%) and 30 and above (12%). There was not much difference in the BMI distribution between the two groups and was also not statistically significant. The most common presenting feature in both the groups was Abnormal Bleeding (46%) followed by fibroid (26%), Endometriosis (12%) Chronic pelvic pain (7%) and PID (4%) the difference between the groups was not statistically significant. In TAH group, patients with para1 were 28%, patients with para2 were 62%, patients with para3 were 4% and nulliparous women were 6%. In TLH group, patients with para1 were 34%, patients with para2 were 52%, patients with para3 were 4% and nulliparous women were 10%. There was no statistically significant difference between the two groups.

Conclusion: In TAH group, highest proportion of patients were aged 40 years (18%) followed by 42 years (10%) and 46 years (10%). In TLH group, highest proportion of patients were aged 46 years (20%) followed by 47 years (12%) and 48 years (12%). In TAH group, highest proportion of patients had BMI range 25 – 29 (62%) followed by 19 – 24 (24%) and 30 and above (14%). In TLH group, highest proportion of patients had BMI range 25 – 29 (62%) followed by 19 – 24 (26%) and 30 and above (12%).

Keywords: clinical profile, benign gynecological disease, hysterectomy.

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Introduction

Hysterectomy, the definitive treatment for many benign gynecologic pathologies unresponsive to medical treatment is the most common operation performed by the gynecologist, and it is the second most common major surgical procedure done in the United States after caesarean section. The different surgical approaches to hysterectomy have unique benefits and risks. Nationally, more than 50% of hysterectomies are performed through a large abdominal incision [1]. Compared with traditional open gynaecological surgeries, minimally invasive gynaecological surgery provides less postoperative pain, more rapid recovery, and shorter hospital stay [2]. Vaginal hysterectomy (VH) is the method of choice for removal of the uterus.

Laparoscopic hysterectomy was first introduced by Reich in 1989 [3]. Compared to laparotomy regarding equal outcomes and lower perioperative morbidity, improvement in quality of life, shorter hospital stays and faster return to activity were seen after laparoscopic hysterectomy [4,5]. However, the percentage of laparoscopic hysterectomies is still very low, since abdominal hysterectomy remains the most common approach among the obstetricians and gynaecologists [6]. An Unfavourable learning curve [7,8] and extensive training of surgeons and the whole surgical team are often cited as reasons. Beside these factors, laparoscopic hysterectomy cannot be successfully accomplished in a substantial number of patients, in whom conversion to an open surgery is required. As a result, a number of relative contraindications, such as morbid obesity, large fibroids and a history of abdominal surgery, have been proposed to help determine whether a patient is a

suitable candidate for laparoscopic hysterectomy [9,10] More than 70% of hysterectomies are performed for benign surgical indications, including fibroids (33%), uterine prolapse (28%), abnormal bleeding (21%), and endometriosis (3%) [11].

The first total laparoscopic hysterectomy was reported in 1989; this procedure has been associated with shorter hospital stay, faster recovery, and fewer postoperative infections compared to abdominal hysterectomy [12]. Advanced laparoscopic procedures are increasingly being utilized in gynaecological surgery [13] however, the abdominal hysterectomy technique is still performed in over 80% of operations [14].

Materials and methods:

A prospective observational analytical study was conducted in the Department of Obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar, India and private set-up for 1 year from January 2021 December 2021 after taking the approval of the protocol review committee and institutional ethics committee. Total sample size was 50 cases in each group. Women with benign gynecological disease opting for hysterectomy, perimenopausal age group between 40-49 years and uterus size \leq 16 weeks of pregnant size were included in the study. Patients with inability to undergo an operation due to high surgical or anesthetic risk, precancerous lesions or malignancy, uterine prolapse, uterus $>$ 16 weeks of pregnant size and conversion to laparotomy were excluded from the study.

Methodology

All the patients attending gynecology outpatient department with symptoms were assessed with history and clinical examination by the consultant gynecologist and investigated. Those requiring hysterectomy were analyzed by the

consultants for the approach depending on the indication for the surgery, nature of the disease and patient characteristics.

Results:

Table 1: Age distribution of study subjects

Age	Surgery		Total
	TAH	TLH	
40 years	9 (18%)	2 (04%)	11
41 years	3 (06%)	4 (08%)	07
42 years	5 (10%)	6 (12%)	11
43 years	4 (08%)	1 (02%)	05
44 years	6 (12%)	5 (10%)	11
45 years	3 (06%)	6 (12%)	09
46 years	5 (10%)	10(20%)	15
47 years	3 (06%)	6 (12%)	09
48 years	6 (06%)	6 (12%)	12
49 years	6 (06%)	4 (08%)	10
Total	50 (100%)	50 (100%)	100

Chi square value- 10.64 df- 9 p value-0.30

Among 100 study subjects, 50 underwent Total Abdominal Hysterectomy (TAH) and other 50 underwent Total Laparoscopy Hysterectomy (TLH). In TAH group, highest proportion of patients were aged 40 years (18%) followed by 42 years (10%),

46 years (10%). In TLH group, highest proportion of patients were aged 46 years (20%) followed by 47 years (12%), 48 years (12%). It was observed that the distribution of age between two groups was different, but this difference was not statistically significant.

Table 2: Distribution of study subjects based on BMI

BMI	Surgery		Total
	TAH	TLH	
19 - 24	12 (24%)	13 (26%)	25
25 - 29	31 (62%)	31 (62%)	62
30 and above	7 (14%)	6 (12%)	13
Total	50 (100%)	50 (100%)	100

Chi square value- 0.117 df-2 p value-0.94

In TAH group, highest proportion of patients had BMI range 25 – 29 (62%) followed by 19 – 24 (24%) and 30 and above (14%). In TLH group, highest proportion of patients had BMI range 25 –

29 (62%) followed by 19 – 24 (26%) and 30 and above (12%). There was not much difference in the BMI distribution between the two groups and was also not statistically significant.

Table 3: Distribution of study subjects based on symptoms

Symptoms	Surgery		Total
	TAH (N=50)	TLH (N=50)	
Abnormal Bleeding	22 (44%)	24 (48%)	46 (46%)
Fibroid	12 (24%)	14 (28%)	26 (26%)
Endometriosis	5 (10%)	7 (14%)	12 (12%)
Chronic pelvic pain	3 (6%)	4 (8%)	7 (7%)
PID	4 (8%)	0	4 (4%)

The most common presenting feature in both the groups was Abnormal Bleeding (46%) followed by fibroid (26%),

Endometriosis (12%) Chronic pelvic pain (7%) and PID (4%) the difference between the groups was not statistically significant.

Table 4: Distribution of study subjects based on comorbidities

Co morbidities	Surgery		Total
	TAH	TLH	
Diabetes	8 (16%)	10 (20%)	18
Hypertension	10 (20%)	15 (30%)	25
Hypothyroidism	10 (20%)	6 (12%)	16
Others	0	1 (02%)	01

Chi square value- 2.96 df-3 p value-0.39

Maximum numbers of diabetics were in group TLH (20%) compared to TAH group (16%). Maximum numbers of hypertensives were in group TLH (30%) compared to TAH group (20%). Maximum

numbers of hypothyroidism were in group TAH (20%) compared to TLH group (12%). This difference in distribution of co morbidities between two groups was not statistically significant.

Table 5 : Distribution of study subjects based on past surgery

Past surgery	Surgery		Total
	TAH	TLH	
LSCS	13 (26%)	14 (28%)	27
Lap. cholecystectomy	1 (02%)	1 (02%)	02
Lap. cystectomy	1 (02%)	1 (02%)	02
Appendicectomy	1 (02%)	1 (02%)	02
Tubal ligation	16 (32%)	10 (20%)	26

In TAH group, 32 patients had previous history of surgery whereas in TLH group, 27 patients had history of surgery. There was not much difference in h/o LSCS

between two groups. History of tubal ligation was more in group TAH (32%) compared to TLH (20%). No statistically significant difference was found in relation to h/o past surgery between two groups.

Table 6: Distribution of study subjects based on parity

Parity	Surgery		Total
	TAH	TLH	
One	14 (28%)	17 (34%)	31
Two	31 (62%)	26 (52%)	57
Three	2 (04%)	2 (04%)	04
Nulli Para	3 (06%)	5 (10%)	08
Total	50 (100%)	50 (100%)	100

Chi square value- 1.22 df-3 p value-0.74

In TAH group, patients with para1 were 28%, patients with para2 were 62%, patients with para 3 were 4% and nulliparous women were 6%. In TLH group, patients with para1 were 34%, patients with para2 were 52%, patients with para3 were 4% and nulliparous women were 10%. There was no statistically significant difference between two groups.

Discussion:

The laparoscopic approach is an acceptable treatment modality in the current gynecologic practice. Jahan et al. performed a prospective comparative study

on the efficiency and outcome of LAVH, TAH, and vaginal hysterectomy on 750 patients. Their results showed that LAVH and vaginal hysterectomy were more beneficial to patients because of less estimated blood loss, less analgesia use, less intraoperative and postoperative complication rates, less postoperative pain, more rapid recovery, and shorter hospital stays [15]. In the current study, we observed significantly longer operative time in TLH compared with TAH group. The requirement of operative time was more in TLH group compared to TAH group and this difference was found to be

statistically significant. The range in TAH group was 30 – 120 mins whereas in TLH group was 60-180 mins.

A similar result was earlier reported. However, Malur et al., in a randomized population, demonstrated comparable operative time between LAVH and TAH [16,17]. All previous studies showed significantly shorter hospitalization with laparoscopy compared with laparotomy. Similar results were demonstrated in other European studies. However, the duration of hospitalization in North American studies is usually shorter compared with Euro-pean, may be because of the different health insurance status [18,19]. According to previous study it has been reported that intraoperative and perioperative blood loss is lesser in the LAVH group compared to the abdominal surgery [20]. In agreement with this study, we found that intraoperative blood loss in the TLH group same as in the TAH group. The relatively lower rate of complications encountered in the present study was due 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 of the technique [21,22]. Johnson et al. published a meta-analysis of prospective randomized trials and stated that the rate of urinary complications was higher with laparoscopy. The complication rate for TLH has gradually been decreased with increased surgical experience at our institute, thus, less experienced gynecologic surgeons may experience higher complications when attempting TLH. Regarding a previous study, there is no clear evidence on the superiority of the hysterectomy methods of one over another.

The major limitation of our study was relatively small number of patients. Further research is required with full reporting of all relevant outcomes, in particular important long-term outcomes, in large randomized controlled trials to minimize the possibility

of a reporting bias. In conclusion, though operating time in TLH is longer, it is more beneficial than the traditional TAH for decreasing the length of postoperative hospital stays and intraoperative blood loss with no difference in operative complications.

Because hysterectomy is a frequent surgical procedure in gynecology, gynaecologists continuously do research on improved alternative techniques, and advanced laparoscopic techniques have been increasingly used in gynecologic surgery over the past 20 years.

Conclusion:

In TAH group, highest proportion of patients were aged 40 years (18%) followed by 42 years (10%), 46 years (10%). In TLH group, highest proportion of patients were aged 46 years (20%) followed by 47 years (12%), 48 years (12%). In TAH group, highest proportion of patients had BMI range 25 – 29 (62%) followed by 19 – 24 (24%) and 30 and above (14%). In TLH group, highest proportion of patients had BMI range 25 – 29 (62%) followed by 19 – 24 (26%) and 30 and above (12%).

References:

1. Brummer THI, Jalkanen J, Fraser J. National Prospective 1- Year Survey of 5279 Hysterectomies. *Hum Reprod.* 2009; 10:2515-2522.
2. Reich H, De Caprio J, Mc Glynn F. Laparoscopic Hysterectomy. *J Gynecol Surgery* 1989; 5:213-216.
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(4):955-62.
4. Candiani M, Izzo S. Laparoscopic versus vaginal hysterectomy for benign pathology. *Curr Opin Obstet Gynecol* 2010;22(4):304-8.
5. Reips, Funke F. Interval level measurement with visual analogue

- scales in Internet-based research: VAS Generator 2008. doi:10.3758/BRM.40.3.699.
6. Baskett TF. Hysterectomy: evolution and trends. *Best Pract Res Clin Obstet Gynaecol* 2005; 19:295-305.
 7. Clayton RD. Hysterectomy. *Best Pract Res Clin Obstet Gynaecol* 2006; 20:73-87.
 8. Sutton C. Past, Present and Future of Hysterectomy. *J Minim Invasive Gynecol* 2010;17(4):421-35.
 9. Hrkki-Sirén P. Laparoscopic hysterectomy. Outcome and complications in Finland. [Doctoral thesis]. Helsinki: Medical Faculty University of Helsinki 1999.
 10. Sutton C. Hysterectomy: a historical perspective. *Baillieres Clin Obstet Gynaecol* 1997; 11:1-22.
 11. Toledo-Pereyra LH. Ephraim McDowell. Father of Abdominal Surgery. *J Invest Surg* 2004; 17:237-8.
 12. Othersen HB Jr. Ephraim McDowell: the qualities of a good surgeon. *Ann Surg* 2004; 239:648-50.
 13. Holland CM, Shafi MI. Radical hysterectomy. *Best Pract Res Clin Obstet Gynaecol* 2005; 19:387-401.
 14. Shepherd JH, Milken DA. Conservative surgery for carcinoma of the cervix. *Clin Oncol* 2008; 20:395-400.
 15. Jahan S, Das TR, Mahmud N, Mondol SK, Habib SH, Saha S. A comparative study among laparoscopically assisted vaginal hysterectomy, vaginal hysterectomy and abdominal hysterectomy: experience in a tertiary care hospital in Bangladesh. *J Obstet Gynaecol* 2011;31(3):254-7.
 16. Gemignani ML, Curtin JP, Zelmanovich J, Patel DA, Venkatraman E, Barakat RR. Laparoscopic assisted vaginal hysterectomy for endometrial cancer: clinical outcomes and hospital charges. *Gynecol Oncol* 1999;73(1):5-11.
 17. Malur S, Possover M, Michels W, Schneider A. Laparoscopic-assisted vaginal versus abdominal surgery in patients with endometrial cancer: A prospective randomized trial. *Gynecol Oncol* 2001;80(2):239-44.
 18. Obermair A, Manolitsas TP, Leung Y, Hammond IG, McCartney AJ. Total laparoscopic hysterectomy for endometrial cancer: patterns of recurrence and survival. *Gynecol Oncol* 2004;92(3):789-93.
 19. Magrina JF, Mutone NF, Weaver AL, Magtibay PM, Fowler RS, Cornella JL. Laparoscopic lymphadenectomy and vaginal or laparoscopic hysterectomy with bilateral salpingoophorectomy for endometrial cancer: morbidity and survival. *Am J Obstet Gynecol* 1999;181(2):376-81.
 20. Kongwattanakul K, Khampitak K. Comparison of Laparoscopically Assisted Vaginal Hysterectomy and Abdominal Hysterectomy: A Randomized Controlled Trial. *J of Min Inv Gyn* 2012;19(1):89-94.
 21. Mäkinen J, Johansson J, Tomás C, Tomás E, Heinonen PK, Laatikainen T et al. Morbidity of 10 110 hysterectomies by type of approach. *Hum Reprod* 2001;16(7):1473-8.
 22. Malzoni M, Perniola G, Perniola F, Imperato F. Optimizing the total laparoscopic hysterectomy procedure for benign uterine pathology. *J Am Assoc Gynecol Laparosc* 2004;11(2):211-8.