ORIGINAL ARTICLE

Comparison of Short Term Outcomes Between Vaginal and Abdominal Hysterectomy

MAHPARA SHAUKAT, ALIA MASOOD, MUHAMMAD ARSHAD HUSSAIN, ZOHRA KHANUM, AMNA KHANUM, KHADIJA WAHEED

Senior Registrar Department of Gynecology Lady Atchison, Senior Registrar Department of Gynecology Lady Atchison, Associate Professor of Gynecology KEMU/Lady Atchison, Professor of Gynecology FJMU/SGRH, Assistant Professor of Gynecology KEMU/Lady Atchison, Assistant Professor of Gynecology KEMU/Lady Atchison, Lahore

Correspondence: Amna Khanum, Assistant Professor, King Edward Medical University, Lahore
Email: amnaaman@hotmail.com

ABSTRACT

Background: Hysterectomy is the second most commonly performed major surgery on female after caesarean section.

Objective: To compare short term outcomes between abdominal and vaginal hysterectomy in terms of febrile morbidity, mean operating time and mean hospital stay duration in women with benign uterine conditions.

Subject and Methods: This trial was Randomized Controlled and was conducted at the Obstetrics and Gynaecology department Lady Aitchison Hospital, Lahore from 30-12-2014 to 29-06-2015. One hundred and twenty patients (sixty in each group) were recruited who fulfilled the inclusion and exclusion criteria. Group-A underwent abdominal hysterectomy and group-B underwent vaginal hysterectomy. The data was entered and analyzed by SPSS version 10.

Results: The mean age of patients was 45.16±3.83 and 44.9±3.67 in group-A and B in respective order. Fever was more common in abdominal hysterectomy group. Difference between groups were statistically significant (P=0.003). Mean duration of hospital stay in group-A was 7.92±1.33 and in group-B 4.77±1.01 days (P<0.001). Mean duration of operative time (minute) in group-A was longer 92.55±4.50 and in group-B operative time as shorter 78.98±4.44 minutes (P<0.001).

Conclusion: Current study results show that short term morbidity is less in vaginal hysterectomy shown by parameters of lesser febrile morbidity, shorter operative time and shorter duration of hospital stay which is encouraging to adopt vaginal route as preffered method.

Keywords: Vaginal Hysterectomy, Abdominal Hysterectomy, Benign uterine conditions, Morbidities, Complications

INTRODUCTION

Hysterectomy is the most commonly done major gynaecological surgery performed on female[1,2].In developed countries ,hysterectomy is second to Caesarean delivery as the most common major surgical procedure for the women of reproductive age. Approximately one in three women i.e. 66percent has undergone a hysterectomy by age 60, with average of 600000 hysterectomies performedin a year in the United States[3].

Routes of hysterectomy include vaginal, abdominal, laparoscopic or combined approaches of above mentioned routes.

Abdominal hysterectomy is the most common surgical procedures in the treatment of benign gynaecological diseases. AH has been preffered over vaginal in the past and ratio has been reported up to 6:1[4]. Reason for this ratio may be that most gynaecologist regard different clinical indications for each procedure[4]. Most of time vaginal hysterectomy is done for prolapse and abdominal hysterectomy for other benign conditions[3,4].

Recent studies emphasize that vaginal hysterectomy should be done in preference to abdominal hysterectomy after examination of patient [5] because vaginal hysterectomy is associated to quicker return to normal activities, less chances of infections and low risk of raised temperature after surgery and a less stay in hospital as compared to abdominal hysterectomy[6,7].

In previous comparison studies indication for vaginal approach was mostly uterovaginal

prolapse. While my study will use vaginal approachfor other benign conditions except uterovaginal prolapse for which almost all surgeons would undertake vaginal hysterectomy. This will reduce the generalizability of the study.

Moreover, the route of surgerical procedure depends more upon the experience and biases of the gynaecologists and preferred experiences than upon neutral evaluation of operative and outcome reports.

The rationale of my study is to reinforce that vaginal hysterectomy is a better option than abdominal hysterectomy for women with benign uterine conditions with moderate sized uterus other than uterovaginal prolapse in term of febrile morbidity, operation time and length of hospital stay so that vaginal approach may be adopted as a preferred route for women requiring hysterectomy in our population where we have heavy workload with limited resources. In future vaginal route may be adopted for benign conditions to achieve more patient's satisfaction by reducing febrile morbidity as well as decrease burden of hospital by reducing the operating time & number of hospital stay.

SUBJECTS AND METHODS

This Randomized Controlled Trial was conducted from 30-12-2014 to 29-06-2015 at the Obstetrics and Gynaecology department Lady Aitchison Hospital, Lahore. Sample size of one hundred and twenty cases (sixty in each group) was calculated with 80% power of test, 5% level of significance and taking expected percentages of febrile morbidity in both groups i.e 42.8% in group of abdominal hysterectomy versus 20% in group of vaginal hysterectomy in women with benign uterine conditions. Non-probability purposive sampling was employed.

Inclusion criteria was benign conditions with uterus size less than 12 week including fibroid uterus, dysfunctional uterine bleeding, menorrhagia, adenomyosis.

Exclusion criteria was uterine prolapse, malignancy, previous pelvic surgeries, inability to undergo an operation due to high surgical or anaesthetic risk, associated adenexal pathology, serious or complicated medical conditions e.g. uncontrolled diabetes (Fasting BSL >126mg/dl, Random BSL>199mg/dl), uncontrolled hypertension (BP$\geq$140/90) and ischemic heart disease.

Approval was obtained from the ethical committee of the hospital. One hundred and twenty patients reporting to outpatient department requiring hysterectomy were included. Their detailed history was taken. A complete gynecological examination including physical and pelvic examination was performed. Routine investigations including all baseline investigations and ultrasound was done. These patients were randomly allocated into groups, group-A and group-B, sixty in each group. Written informed consent was obtained from each subject by explaining the risks and benefits associated with the procedure. Group-A underwent abdominal hysterectomy and group-B underwent vaginal hysterectomy. A standard technique of hysterectomy was performed in both groups by consultants and senior registrars. Steps of hysterectomy were same (by clamping, cutting and ligating) except in vaginal hysterectomy uterus was removed through vagina leaving behind ovaries and tubes. Operating time was calculated from incision to closure. Doctor recorded postoperative data. Postoperative temperature was recorded 4 hourly and day of discharge was noted. The information was entered into specially designed performa.

The data was analysed through SPSS version 10.0. Frequences and percentages of categorical variables (febrile morbidity) were calculated and compared between the two groups by applying chi-square test. Mean and standard deviation of numerical variables (age,operation time & hospital stay) were calculated and compared between two groups bt applying t-test. In all statistical analysis only p value $\leq$0.05 was considered significant. Frequency was calculated for parity.

RESULTS

A total of one hundered and twenty patients (sixty in each group) were included. Majority of the patients in both groups were between 46-50 years of age and least patients were 40-45 years old in each group. Mean age of the patients was 45.16$\pm$3.83 and 44.9$\pm$3.67 in group-A and B, respectively (Table-1).

In group-A,37 patients (61.7%) and in group-B 29 patients (48.3%) were having parity 2-4 and 23 patients (38.3%) of group-A and 31 patients (51.7%) of group-B belong to para 5-8 (table-2).

Febrile morbidity accounted not only for most of the overall morbidity in each group but also of all the most difference between the two groups. Febrile morbidity rate among the TAH was more than twice that of the VH group.Difference between

two groups was statistically significant (P=0.003) (Table-1).

Table-1: Distribution of cases by age

Age(year)	Group-A (Abdominal hysterectomy)		Group-B (Vaginal Hysterectomy)	
	No.	%	No.	%
40-45	07	11.7	10	16.7
46-50	28	46.7	26	43.3
51-55	25	41.6	24	40.0
Total	**60**	**100.0**	**60**	**100.0**
Mean±SD	**45.16±3.83**		**44.9±3.67**	

Table-2 Distribution of cases by parity

Parity	Group-A (Abdominal hysterectomy)		Group-B (Vaginal Hysterectomy)	
	No.			
2-4	37	61.7	29	48.3
5-8	23	38.3	31	51.7
Total	**60**	**100**	**60**	**100**

Table-3: Distribution of cases by febrile morbidity

Fever	Group-A (Abdominal Hysterectomy)		Group-B (Vaginal Hysterectomy)	
	No.	%	No.	%
Yes	27	45.0	12	20.0
No	33	55.0	48	80.0
Total	**60**	**100.0**	**60**	**100.0**

Chi Square=8.547
df=1 P value=0.003

Table-4: Duration of hospital stay(days)

Group	Duration of hospital stay	
	Mean	Standard deviation
Group-A	7.92	1.33
Group-B	4.77	1.01
t value	**14.577**	
p value	**P<0.001**	

Table-5: Duration of operative time (minute)

Group	Operative Time (minute)	
	Mean	Standard Deviation
Group-A	92.55	4.50
Group-B	78.95	4.44
t value	**16.643**	
p value	**P<0.001**	

Mean duration of hospital stay in group-A was longer 7.92±1.33 than in group-B 4.77±1.01 days (P<0.001) (Table-4).

Mean duration of operative time (minute) in group-A was longer 92.55±4.50 and in group-B operative time was shorter 78.98±4.44 minutes (P<0.001) (Table-5).

DISCUSSION

Every specialist gynaecologist know the approaches to safe and effective abdominal, vaginal and laparoscopic hysterectomy and should be aware of the correct and valid indication for performing each of the procedures. However, there is a great difference in the proportions of hysterectomy types.

Despite a shorter stay, vaginal and laparoscopic hysterectomies remain very less common than abdominal hysterectomy for benign disease[8]. In United States of America abdominal route was the most commonly performed (66.1%) followed by vaginal (21.8) and laparoscopic (11.8%) routes[8].

With the constant modernization of minimally invasive concepts in gynaecology , doctors choose surgical route by considering not only the patient's health ruling out contraindications of specific route, but also the psychological needs of patient and patient's quality of life after surgery[9]. So the choice between laparoscopic ,vaginal or abdominal routes remains controversial[9].

Abdominal route can increases the operation time upto 90.0±5.0 minutes while vaginal hysterectomy reduces the operation time upto 75.0±5.0 minutes[10]. Febrile morbidity and fever in abdominal hysterectomy was reported upto 42.8% and with vaginal hysterectomy 20% [11].Length of hospital stay was 8.3±3.7 days for abdominal hysterectomy and 5.9±2.9 days for vaginal hysterectomy[11]. Theseresults are comparable to our study.

According to systemic evidence review by Jhonson, women who had VH had less infection and high temperature after surgery compared to those who had abdominal hysterectomies. Dicker and his associates in their study found that abdominal hysterectomy has 1.7 times increased risk of complications than vaginal hysterectomy[12].

The advantages of vaginal hysterectomy are that it has no visible scar and is less painful but surgeon cannot see the uterus and surrounding tissue.Usually large fibroid cannot be removed

using vaginal approach and also if the ovaries are not healthy looking [13].

In abdominal hysterectomy main indications usually are DUB, fibroid uterus, menstrual irregularities, and adenomyosis in uterus, but in case of fibroid uterus when it is more than 12 weeks pregnancy size VH is generally considered difficult. In contrast to our study uterus as big as 20 weeks pregnancy size has been removed vaginally without any added morbidity[13].

Experienced people have considered vaginal approach as a route of choice for performing hysterectomy in patients with previous caesareansections[14]but we have excluded the patients with previous pelvic surgeries to allow each surgeon to maintain equipoise.

In an other study, data indicate that a large uterus, nulliparity, previous ceasarean delivery and pelvic laparotomy rarely constitute contraindications to vaginal hysterectomy[15]. Hospital stay was shorter for vaginal hyaterectomy (2.3 days; p<.001) and abdominal hysterectomy (2.7 days; p<.001). Operative time was shorter in the vaginal hysterectomy group (49 minutes) than with abdominal hysterectomy (61minutes; p<.001)[15].

In patients lacking previous vaginal delivery, vaginal hysterectomy should not be contraindicated. In these patients, most of the procedures can be performed by vaginal approach, with the benefit of limiting costs and duration of hospital stay[16]. Moreover, the mean operative time was longer in the abdominal approach (120 minutes), and significantly shorter in exclusively vaginal (75 minutes) procedure[16] similar to our study.

Varolet al[17]found that vaginal hysterectomy was associated with lower febrile morbidity and minor complications[17]. This is consistent with our study results.The main cause of the febrile morbidity was wound infection in case of TAH group whereas in VH group it was UTI.

In our study , hospital stay was longer in abdominal hysterectomy group when compared with vaginal hysterectomy and early discharge even as early as within 24 hours is possible.. This finding is consistent with the study carried out by Ottosen et al[18].

Resident physicians who followed the practice guidelines reduced the ratio of abdominal-to-vaginal hysterectomy from 3:1 to 1:11[19,20]. The application of practice guidelines for the selection of the routes of hysterectomy can increase the rate of vaginal hysterectomies that are performed in residency programs and can help eradicate inconsistencies in health care delivery that exist currently[20].

The result of the study confirms the advantages to the patient of less febrile morbidity, lesser operative time and shorter hospital stay.

CONCLUSION

In conclusion, the results of current study show that short term morbidity is less in vaginal hysterectomy shown by parameters of lesser febrile morbidity, most importantly shorter duration of hospital stay. Significantly improved outcomes suggest vaginal hysterectomy should be performed in preference to abdominal hysterectomy where possible.

REFRENCES

1. Einarsson JI, Matteson KA, Schulkin J, Chavan NR, Sangi-Haghpeykar H. Minimally invasive hysterectomies: A survey on attitude and barriers among practicing gynecologists. J Minim Invasive Gynecol 2010;17:167-75.
2. Nieboer TE, Johnson N, Lethaby A, Tavender E, Curr E, Garry R et al. Surgical approach to hysterectomy for benign gynaecological disease. Cochrane Database Syst Rev 2009,3:CD003677.
3. Whiteman MK, Hillis SD, Jamieson DJ, Morrow B, Podgornik MN, Brett KM, et al. Inpatient hysterectomy surveillance in the United States, 2000-2004. Am J Obstet Gynecol. 2008;198:34.el-34.e7.
4. Dawood NS, Mahmood R, Haseeb N. Comparison of vaginal & abdominal hysterectomy: Peri and post-operative outcomes. J Ayub Med Coll Abbottabad 2009;21:116-20.
5. McCracken G, Hunter D, Morgan D, Price JH. Comparison of laparoscopic ,vaginal and abdominal hysterectomy. Ulster Med J 2006;75:54-8.
6. Olah KS, Khail. Changing the route of hysterectomy: the result of a policy attempting the vaginal approach in all cases of dysfunctional uterine bleeding.Eur J ObstetGynecol Report Biol 2006;125:243-7.
7. Schindlbeck C, Klauser K, Dian D, Janni W, Friese K. Comparison of total laparoscopic, vaginal and abdominal hysterectomy. Arch GynecolObstet 2008;277:331-7.

8. Wu JM, Wechter ME, Geller EJ, Nguyen TV, Visco AG. Hysterectomy rates in the United States, 2003. Obstet Gynecol. 2007;110:1091-1095.
9. Chen B, Ren DP, Li JX, Li CD. Comparison of vaginal and abdominal hysterectomy: A prospective non-randomizedtrial. Pak J Med Sci. 2014;30(4):875-79.
10. Iftikhar R. Vaginal hysterectomy is superior to abdominal hysterectomy. J surg Pak 2008;13:55-8.
11. Ikram M, Saeed Z, Saeed R, Saeed M. Abdominal versus vaginal hysterectomy:an Audit. Professional Med J 2008;15:486-91.
12. Kayastha S, Tuludhar H. Vaginal hysterectomy vs abdominal hysterectomy. J ObstetGynaecol 2002;8:1-7.
13. Lumsden MA, Twaddles, Hawthorn R, Traynor I. A randomized comparison and economic evaluation of laparoscopic assisted hysterectomy. Br J ObstetGynaecol 2000;107:1386-91.
14. Garry R, Fountain J, Mason S, Hawc J. The evaluate study : two parallel randomized trials, one comparing laparoscopic with abdominal hysterectomy, the comparing laparoscopic with vaginal hysterectomy. Br Med J 2004;328:129-33.
15. Doucette RC, Sharp HT, Alder SC. Challenging generally accepted contraindications to vaginal hysterectomy. Am J ObstetGynecol 2001;184:1386-9; discussion 1390-1.
16. Tohic AL, Dhainaut C, Yazbeck C, Hallais C, Levin L, Madelenat P. Hysterectomy for benign uterine pathology among women without previous vaginal delivery. ObstetGynecol 2008;111:829-37.
17. Varol N, Healey M, Tang P, Sheehan P, Maher P Hill D. Ten year review of hysterectomy morbidity and mortality: can we change detection? Aus N Z J ObstetGynaecol 2001:41:475-7.
18. Ottosen C, Lingman G, Ottosen L. Three methods for hysterectomy: a randomized prospective study of short term outcome. Brit J ObstetGynaecol 2000;107:1380-5.
19. Kovac SR. Decision–directed hysterectomy: a possible approach to improve medical and economic outcomes. Int J GynaecolObstet 2000;71:159-69.
20. Kovac SR, Barhan S, Lister M, Tucker L, Bishop M, Das A. Guidelines for the selection of the route of hysterectomy: application in a resident clinic population. Am J ObstetGynecol 2002;187:1521-7.