RESEARCH ARTICLE

A Case Control Study to Compare Laparoscopically Assisted Vaginal Hysterectomy and Total Abdominal Hysterectomy

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ABSTRACT

Background: Laparoscopic Assisted Vaginal Hysterectomy (LAVH) has become increasingly popular as a definite alternative to abdominal hysterectomy.

Objective: To compare operative outcomes of laparoscopically assisted vaginal hysterectomy (LAVH) and total abdominal hysterectomy (TAH). Study design: Retrospective case control study.

Materials and Methods: Data from medical records of 29 cases and 29 controls were reviewed and recorded. *Study design:* Retrospective case control study. *Setting:* A tertiary care hospital at Bareilly (UP). *Subjects:* Twenty nine patients who underwent LAVH between 01 October 2010 and 30 September 2011 were recruited as cases and controls were 29 patients, who underwent TAH during the same period. *Inclusion criteria* were that patients be matched in a case control manner for age, weight, diagnosis, and uterine size.

Results: Basic characteristics such as age, parity, weight and uterine size of cases and controls were comparable. Mean operative time was 139±11 minutes for LAVH group which was significantly longer than 99±9 minutes for TAH group. Mean blood loss during surgery in LAVH group of patients was 250ml and it was 275 in abdominal hysterectomy patients, however observed differences were not significant. Mean Hb drop after 24 Hrs of surgery was 1.4g/dl in LAVH group and it was 1.6g/dl in TAH group and differences was not significant. Number of doses of injectable analgesics used per patients was significantly more in TAH group (2.3) in comparison to LAVH (1.2). Overall complication was 14% in LAVH and 10% in TAH and differences were not significant. The mean hospitalization was significantly shorter for LAVH group 2.7 days compared to 5.5 days in TAH group.

Conclusion: LAVH had longer operative time but with shorter hospital stay in comparison with TAH.

Key Words: Laparoscopic Vaginal Hysterectomy; Abdominal Hysterectomy

INTRODUCTION

Historically the uterus has been removed by either the abdominal or vaginal route. The vaginal operation is preferable when there are no contraindications because of lower morbidity and quicker recovery.[1] The VALUE Study suggested that 67% of surgeons still used the abdominal approach as the operation of choice, particularly when dealing with pelvic pathology or carrying out oophorectomy.[2] Since it was first reported by Reich *et al* in 1989 laparoscopically assisted vaginal hysterectomy (LAVH) has gained widespread acceptance.[3] Laparoscopic dissection of the para-uterine tissues to the level of the uterine arteries (LAVH) or to include the uterine arteries (laparoscopic hysterectomy), also permits oophorectomy or dissection of adhesions under direct vision more easily than this can be achieved at vaginal hysterectomy (VH). Farquhar and Steiner found that between 1990

and 1997, in the USA, there was a growth in the number of hysterectomies performed with laparoscopic assistance (0.3-9.9%) with an associated decline in the proportion of hysterectomies performed abdominally.[4] The advantages of laparoscopically assisted vaginal hysterectomy over abdominal hysterectomy (TAH) have been reported to be less postoperative pain, shorter hospital stays and more rapid return to normal activities and work.[5] In contrast to this the study by Lumsden et al did not show any difference in postsurgery recovery, satisfaction with the outcome of the operation or quality of life four weeks postoperatively between TAH and LAVH.[6] The aims of our study were to compare LAVH with TAH in a case control manner to evaluate intra and post-operative complication rates and patient recovery times at Bareilly in Uttar Pradesh.

METHODS

This retrospective case control study was carried out at Rohilkhand Medical College & Hospital Bareilly(Uttar Pradesh) after taking approval of institutional ethical committee. On review of hospitals records it was found out of 72 women (32 TAH, 40 LAVH) who underwent hysterectomy for a primary diagnosis of excessive & irregular uterine bleeding per vagina between 01October10 and 30 September 2011 at our hospital, 58 were selected for inclusion in this study after obtaining there consent , 29 undergoing each operation. Inclusion criteria were that patients be matched in a case control manner for age, weight, diagnosis, and uterine weight. Medical records of the patients identified were reviewed for demographic characteristics, presenting complaints, diagnosis, operating time, blood loss during surgery, intra and post-operative complication, Hb level 24 Hrs after operation, length of hospital stay and aggregate intramuscular narcotic use on all hospital days and these factors were compared in both the groups.

Statistics: 'T' test of significance was applied to find out whether the differences observed in two groups of cases were significant or not.

RESULTS

Baseline characteristics of two groups of patients have been depicted in table 1.

Table-1: Baseline Characteristics of Hysterectomy Patients

Patients Characteristics	LAVH	TAH	P value
Age (Years) (Mean ± SD)	49 ± 1.6	50 ± 1.9	0.0344
Parity (Mean ± SD)	2.6 ± 0.3	2.7 ± 0.4	0.2861
Weight (Mean ± SD)	54 ± 1.7	57 ± 1.9	0.000
Hb in grams (Mean ± SD)	11 ± 0.6	10.5 ± 0.7	0.0050
Systolic BP in mm of Hg (Mean ± SD)	129±8	123 ± 9	0.0096
Diastolic BP in mm of Hg (Mean ± SD)	81 ± 5	78 ± 7	0.0656
Previous abdomino-pelvic surgery (percentage)	7	10	
Estimated uterine size in weeks (Mean± SD)	7.2 ± 0.5	8.2 ± 0.6	0.000

LAVH: Laparoscopically Assisted Vaginal Hysterectomy; TAH: Total Abdominal Hysterectomy

Two groups of patients are similar in baseline characteristics (age, parity, weight, BP, Hb, estimated uterine size). Mean age of patients in group one was 49 years and group two was 50 years. Observed differences between two groups of patients are not significant. Indication for hysterectomy in two groups of patients has been shown in table 2. Main indications for hysterectomy were endometriosis, fibroids/ menorrhagia, adnexal mass. Observed differences between two groups of patients for indication of surgery are not significant.

Table-2: Indication for Surgery in Hysterectomy Patients

Indication for Surgery	LAVH	TAH	P value
Endometriosis	9 (32%)	10 (36%)	0.7956
Fibroids/Menorrhagia	11 (39%)	10 (36%)	0.8558
Adnexal mass	5 (18%)	4 (14%)	0.7105
Others	3 (11%)	4 (14%)	0.7529
Total	28 (100%)	28 (100%)	

LAVH: Laparoscopically Assisted Vaginal Hysterectomy; TAH: Total Abdominal Hysterectomy

Mean surgery time in LAVH group of patients was 139 minutes and it was 99 minutes in abdominal hysterectomy patients. Mean surgery time was significantly more (p value 0.000) in LAVH group of patients. Mean blood loss during surgery in LAVH group of patients was 250ml and it was 275 in abdominal hysterectomy patients, however observed differences were not significant. Mean Hb drop after 24 Hrs of

surgery was 1.4g/dl in LAVH group and it was 1.6g/dl in TAH group and differences was not significant. Length of hospital stay was significantly more (p value 0.000) in TAH group (mean 5.5 days) in comparison to LAVH group (mean 2.7 days). Number of doses of injectable analgesics used per patients were significantly more (p value 0.000) in TAH group (2.3) in comparison to LAVH (1.2). Overall complication was 14% in LAVH and 10% in TAH and differences were not significant. Observed complications in two groups of patients have been depicted in table 4.

Table-3: Length of Time in Surgery, Blood Loss, Hemoglobin Drop, Analgesics Use and Length of Stay

Observations (Mean ±SD)	LAVH	TAH	P value
Surgery Time (minutes)	139±11	99±9	0.000
Blood loss in ml	250±10	275±15	0.000
Hb drop in (g/dl)	1.4±0.2	1.6±0.3	0.0042
Length of Stay in days	2.7±0.2	5.5±0.3	0.0000
No of doses of injectable anlgesics used per patient	1.2±0.3	2.3±0.2	0.000

LAVH: Laparoscopically Assisted Vaginal Hysterectomy; TAH: Total Abdominal Hysterectomy

Table-4: Postoperative Complication in Two Group of Hysterectomy Patients

Complications	LAVH	TAH	P value
Overall complication (patient with at least one complication)	4(14%)	3(10%)	0.6625
Fever more than 38*C	2(7%)	1(3%)	0.687
Urinary tract infection	1(3%)	0(0%)	
Wound infection	0(0%)	1(3%)	
Wound haemetoma	1(3%)	1(3%)	

LAVH: Laparoscopically Assisted Vaginal Hysterectomy; TAH: Total Abdominal Hysterectomy

DISCUSSION

Laparoscopically Assisted Vaginal Hysterectomy (LAVH) is a safe alternative to abdominal hysterectomy. In our study LAVH group had longer operative time vs abdominal hysterectomy, lower requirement for post operative analgesia, shorter length of hospital stay, met early discharge criteria and quicker return to work. The major advantages of the laparoscopic procedure, as demonstrated in the present study were reduced postoperative pain, shorter hospital stay, rapid convalescence and patient's satisfaction about the absence of scar.

Our results are in line with the experience of other investigators.[7-9] Operating time was significantly longer for LAVH than TAH. Similar results have been shown previously by some authors (LAVH 120 minutes v/s VH 65 minutes) and LAVH operating time 152.2 ± 32.4 v/s TAH 96.5+29.6.[10-13] LAVH group had lower requirements for postoperative analgesia, and shorter length of hospital stay (2.7 days for LAVH, 5.5 days for abdominal hysterectomy and quicker return to work. Similar results have been shown by Shen et al and Tsai et al.[13,14] There were no major complications. Shen & Tsai et al in their study revealed statistically significant difference between LAVH and TAH in terms of short term clinical results i.e. blood loss during surgery, narcotic analgesic consumption and duration of hospital stay (higher for TAH than for LAVH $p<0.05$).[13,14] As shown by this study, endoscopes surgery provides the gynaecologist with many advantages compared to conventional laparotomy procedures. These include a magnified and improved view of the operating field, observation of the pelvic organs in a more natural state, less tissue handling, smaller incisions that reduce pain,shorter length of hospital stay and earlier return to work. The operative time has been found to be more with the laparoscopic approach then that with abdominal hysterectomy. However, the advantages offered by laparoscopic surgery in terms of shorten period of hospitlization, quicker introduction of normal diet, lesser complication and over all a better quality of life index are not debatable and have been proved time and again.[15]

CONCLUSION

Laparoscopically Assisted Vaginal Hysterectomy (LAVH) is a safe alternative to abdominal hysterectomy. The LAVH group had longer operative time vs abdominal hysterectomy, lower requirement for post operative analgesia, shorter length of hospital stay, met early discharge criteria and quicker return to work. Thus given adequate training of the surgeon in laparoscopic surgery, most of the patients who require a hysterectomy and have

contraindications to vaginal hysterectomy may be offered laparoscopically assisted vaginal hysterectomy with all the benefits associated with the vaginal route.

REFERENCES

1. Clinch J. Length of hospital stay after vaginal hysterectomy. Br J Obstet Gynaecol 1994; 101(3): 253-4.
2. McPherson K, Metcalfe MA, Herbert A, Maresh M, Casbard A, Hargreaves J, et al. Severe complications of hysterectomy: the value study. Br J Obstet Gynaecol 2004; 111(7): 688-94.
3. Reich H, De Caprio J, McGlynn F. Laparoscopic hysterectomy. J Gynaecol Surg 1989; 5: 213-6.
4. Farquhar CM, Steiner CA: Hysterectomy rates in the United States 1990-1997. Obstet Gynecol 2002; 99(2): 229-34.
5. Tammaso Falcone, Marie Fidele R. Paraiso, Edward Marscha Prospective randomized clinical trial of laparoscopically assisted vaginal hysterectomy versus total abdominal hysterectomy. Am J Obstet Gynecol 1999 ; 180 . 955-62
6. Lumsden MA, Twaddle S, Hawthorn R, Traynor I, Gilmore D, Davis J, et al. A randomised comparison and economic evaluation of laparoscopicassisted hysterectomy and abdominal hysterectomy. Br J Obstet Gynaecol 2000; 107(11): 1386-91
7. Nezhat C, Nezhat F, Gordon S, Wilkins E. Laparoscopic versus abdominal hysterectomy. J Reprod Med 1992 ; 37 : 247-50.
8. Raju KS, Auld BJ. Randomised prospective study of laparoscopic vaginal hysterectomy versus abdominal hysterectomy each with bilateral salpingo-oophorectomy. Br J Obstet Gynecol 1993 ; 100 : 698-700.
9. Minelli. L, Angiolillo M, Caione C, Palmara V. Laparoscopically assisted vaginal hysterectomy. Endoscopy 1991 ; 23 : 64-66.
10. Summit RL, Stovall TG, Lipscomb GH, Ling FW. Randomized comparison of laparoscopy-assisted vaginal hysterectomy with standard vaginal hysterectomy in an out patient setting. Obstet Gynecol 1992 ; 80 : 895-901
11. Boike G, Elfstrand E, Del Priore G, Schumock D, Hooky S, Lurain J. Laparoscopically assisted vaginal hysterectomy in a university hospital. Report of 82 cases and comparison with abdominal and vaginal hysterectomy. Am J Obstet Gynecol 1993 ; 168 : 1690-1701.
12. Shushan A, Mohamed h, Magoes AL. How long does laparoscopic surgery really take? Lessons learned from 1000 operative laparoscopies. Hum Reprod 1994 ; 14(6) : 39-43.
13. Shen CC, Wu MP, Lu CH et al. Short and long term clinical results of laparoscopic assisted vaginal hysterectomy and abdominal hysterectomy. J Am Assoc Gynaecol Laparosc 2003 ; 10(1) : 49-54.
14. Tsai EM, Lang CY, Wu CH et al. Laparoscopic assisted vaginal hysterectomy and abdominal hysterectomy. Gynaecol Obst Invest 2003 ; 55 : 105-09
15. Gauy R, Fountain J, Masan S et al. The evaluation study: two parallel randomized trials, one comparing laparoscopic with abdominal hysterectomy, other comparing laparoscopic with vaginal hysterectomy. BMJ 2004; 328: 129.

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