ORIGINAL ARTICLE

Outcome of Laparoscopic and Abdominal Hysterectomy : A Comparative Study

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Abstract

The current study was undertaken to study and compare the outcome of laparoscopic hysterectomy with abdominal hysterectomy In the present study total 100 patients with various indications for hysterectomy were divided in two groups randomly containing 50 patients each. Group LAH contain patients undergone laparoscopic hysterectomy and Group TAH: patients undergone abdominal hysterectomy. Standard surgery protocol was followed in both the groups. All the patients were evaluated for time of surgery, need for blood transfusion (intra-operative or post-operatively), intra-operative and post-operative complications and hemoglobin drop. Follow up in post-operative period was done at 2 weeks, 4 weeks and 6 weeks. Most of the patients in the present study were in the age group of 40-50 years with fibroid uterus, the most common indication of Hysterectomy in both groups followed by dysfunctional uterine bleeding. Mean Time required for surgery was more in LAH Group (87.30 ± 22.36min) as compared to TAH Group (72.50 ± 14.82) and the difference was statistically significant. It was observed that mean drop in hemoglobin was more in TAH group (1.12 ± 0.5) as compared to LAH group (0.96 ± 0.54). It was observed that 4 patients of LAH group had major intra operative complication while TAH group had none. 20 patients of TAH group had minor post-operative complications as compared to 4 patients of LAH groups. Majority of the patients in TAH group were having wound sepsis. It was observed that 42% of the patients of LAH group were discharged within 3 days while only 4% of TAH group were discharged within 3 days of surgery. Laparoscopic hysterectomy is a better alternative to abdominal hysterectomy when vaginal hysterectomy is contraindicated or not possible. In trained hands, it leads to earlier ambulation, shorter hospital stay, faster postoperative recovery.

Key Words

Laparoscopic Hysterectomy, Outcome, Complication

Introduction

Hysterectomy is the most common gynecologic surgery performed in women (1). About 20-25 % of women have had hysterectomy by the age of 60 yrs. Incidence of hysterectomy varies in different countries. In India, a lower hysterectomy rate (4-6%) has been reported as compared to a higher frequency (10-20%) in other countries (2,3). Higher tolerance threshold of Indian women and a low level of medicalization have been proposed as the reason for this lower rate (2,3). In USA about 600,000 hysterectomies are preformed per annum (4). 20% of women in the United Kingdom, undergo hysterectomy by the age of 60 yrs (5). Hysterectomy means surgical removal of the uterus. It may be total (removing the body, fundus, and cervix of the uterus; often called "Complete") or subtotal (Removal of the uterine body while leaving the cervix intact' also called "supracerivcal") (6). It is often associated with removal of bilateral ovaries and fallopian tubes (Bilateral Salpingo-oopherectomy). Use of laparoscopic Hysterectomy has recently been reported as an alternative to traditional abdominal Hysterectomy and is gaining popularity, because of superior post-operative recovery and shorter hospital stay (7,8,9). Laparoscopic Hysterectomy represents one of the more advanced gynaecological

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minimally access procedures, first done in 1988 by Harry Reich (10-12). It has been introduced for little more than 20 years but still the take up rate of this procedure remains limited because of inexperience of surgeons leading to higher peri-operative complication rate during learning curve, longer duration of procedure and costly equipment (12). Advantages of laparoscopic hysterectomy over abdominal hysterectomy are least surgical trauma, significantly reduced blood loss, lesser post-operative pain, shorter hospital stay, early ambulation, minimal surgical scar and lesser incidence of wound infection. Thus the current study was undertaken to study and compare the outcome of laparoscopic hysterectomy with abdominal hysterectomy.

Material and Methods

The present study was conducted in for a period of one year. For the purpose of study two groups were formed. *Group LAH:* patients undergone laparoscopic hysterectomy (50 patients). *Group TAH*: patients undergone abdominal hysterectomy (50 patients). Total 100 patients with various indications for hysterectomy were divided in two groups randomly containing 50 patients each. The details history of all the patients was elicited and recorded in the prestructured proforma. Routine Pre-operative evaluation was performed. Informed and written consent was obtained from the patient. Type of aesthesia documented. Standard surgery protocol was followed in both the groups. Intraoperative complications if any were recorded. Evaluation of following parameters was done and recorded: time of surgery (in mins.); need for blood transfusion (Intra-operative or post- operatively); intra-operative complications (ureteric injury, bladder injury, bowel injury, hemorrhage); Post-operative complications (fever, wound infection, urinary tract infection); hemoglobin drop (difference in per-operative and post-operative Hb); time to unaided ambulation (in Days) & duration of hospital stay (in Days). Follow up in post-operative period was done at 2 weeks, 4 weeks and 6 weeks. In each visit patient was assessed by clinical examination and inquired about her recovery to normal household functions and sexual activity at the end of 6 weeks. The subjects were evaluated for the following parameters and statistically analysis was done by using Chi-square test, Fischer Exact test, Student-t test and P-value to determine Statistical significance. Appropriate bar diagrams and pie-chart used to represent the results.

Results

Most of the patients of both the groups were in the age group of 40-50 yrs. Mean age of patients belonging to LAH Group was 44.46 ± 5.19 years while that of TAH Group was 45.24 ± 5.53 years. Statistical analysis was done using Student-t test with t value 0.980 and p value 0.329 which was statistically insignificant. It was observed that majority of patients of both groups had parity more than two. The difference observed in the both groups was statistically insignificant. It was seen that fibroid uterus was the most common indication for hysterectomy in both the groups followed by DUB. Mean Time required for sugery was more in LAH Group (87.30 ± 22.36min) as compared to TAH Group (72.50 ± 14.82) and the difference was statistically significant. It was observed that mean drop in hemoglobin was more in TAH group (1.12 ± 0.5) as compared to LAH group (0.96 ± 0.54). But the difference was not statistically significant. It was observed that 4 patients of LAH group had major intra operative complication while TAH group had none. 20 patients of TAH group had minor post complications as compared to 4 patients of LAH groups. Majority of the patients in TAH group were having wound sepsis. It was observed that 42% of the patients of LAH group were discharged within 3 days while only 4% of TAH group were discharged within 3 days of surgery. Mean duration of hospital stay for LAH group was 4.56 ± 3.7 days whereas mean duration of hospital stay group was 7.66 ± 3.17 days and the difference observed statistically significant.

Discussion

In the present study it was observed that the mean age of patients belonging to LAH Group was 44.46±5.19 years while that of TAH Group was 45.24±5.53 years and the difference observed was statistically insignificant. Most of the patients of both the groups were in the age group of 40-50 yrs. Similar findings were also reported by Perino A *et al* (13), Loh FH *et al* (14) and Kapoor Nisha *et al* (15) in their study. It was observed that

Table 1. Distribution of Patients According to Age and Parity

Age group in years	LAH Group No. (%)	TAH Group No. (%)	P value
Age	44.46 ±5.19	45.24 ±5.53	0.329
Parity	3.26 + 1.65	2.98 ±1.17	0.266

Table 2. Distribution According to Indications of Surgery

Indications	LAH Group No. (%)	TAH Group No. (%)
Fibroid	24 (48%)	**23 (46%)**
DUB	20 (40%)	18 (36%)
Ovarian cyst	3 (6%)	4 (8%)
Others	3 (6%)	5 (10%)
Total	**50 (100%)**	**50 (100%)**

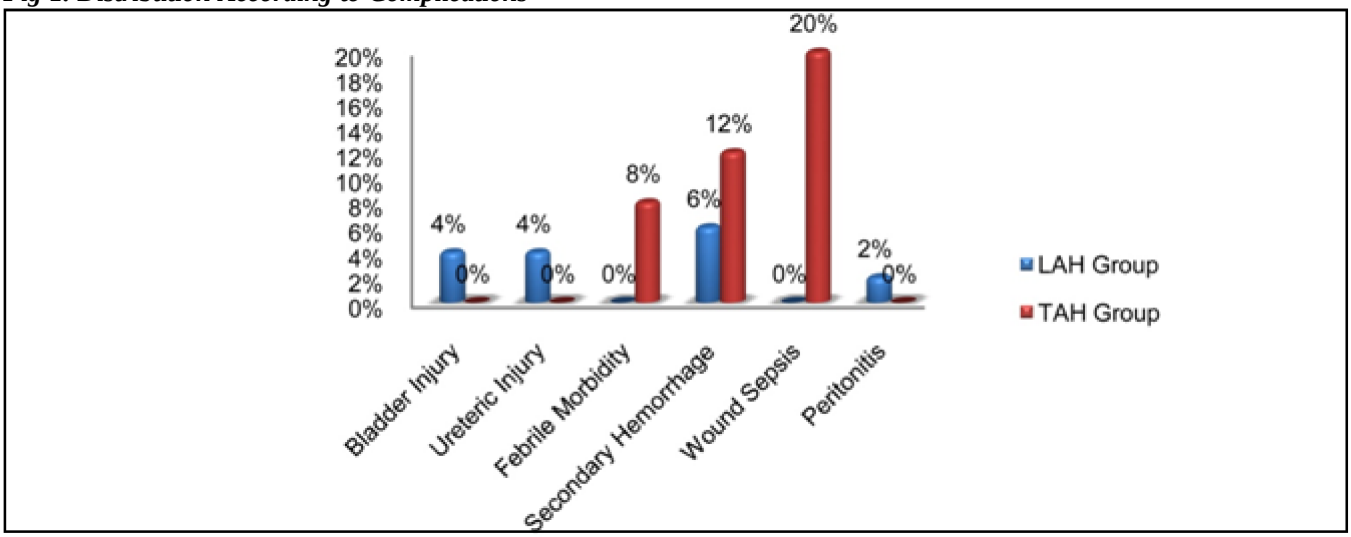
Table 3. Distribution According to Duration of Surgery and Hemoglobin Drop

	LAH Group	TAH Group	P value
Duration of surgery (min)	87.30 ± 22.36	72.50 ± 14.82	<0.0001
Hb-Drop (gm/dl)	0.96±0.54	1.12 ±0.5	0.19

Table 4. Distribution According to Intra Operative and Post operative Complications

Complication		LAH Group	TAH Group	P Value
Intra operative	Bladder Injury	2(4%)	0	0.11
	Ureteric Injury	2(4%)	0	
Post operative	Febrile Morbidity	0	4 (8%)	
	Secondary Hemorrhage	3(6%)	6 (12%)	<0.0001
	Wound Sepsis	0	10 (20%)	
	Peritonitis	1(2%)	0	

Fig 1. Distribution According to Complications



majority of patients of both groups had parity more than two. The difference observed in the both groups was statistically insignificant. Perino A *et al* (13), Kapoor N *et al* (15) & O Hanlan KA *et al* (16) and also observed similar findings. Thus both the groups were comparable with respect to age and parity. It was seen that fibroid uterus was the most common indication for hysterectomy in both the groups followed by DUB. In the present study duration of surgery of LAH group was between 50 and 135 min with mean duration of 87.30 ± 22.36 min and for TAH group it was between 45 and 115 min with mean of 72.50 ± 14.82 min. and the difference observed in the

Table 5. Distribution According to Days of Hospital Stay

Hospital Stay (In days)	LAH Group	TAH Group	P value
1-3	21(42%)	2(4%)	<0.0001
4-6	23(46%)	17(34%)	
7-10	4(8%)	25(50%)	
>10	2(4%)	6(12%)	

operative time was statistically significant. Perino A *et al* (13), Loh FH *et al* (14) and Garry R *et al* (17) also observed higher operative time in LAH group as compared to TAH group. As the surgeries were done in a teaching hospital allowing the surgeons in learning curve and residents to observe, assist and perform the laparoscopic procedures, the operative time was prolonged to some extent in laparoscopic cases. Hemoglobin drop was calculated as difference in pre-operative and post-operative hemoglobin (Day-1). Mean Hemoglobin drop in current study was 0.96gm/dl for LAH group and 1.12gm/dl for TAH group. These were compared and found to be statistically insignificant (p =0.19). These results were consistance with the results of Marana R *et al* (18). according to whom the Hemoglobin drop in both groups did not have significant difference. Whereas the study by Perino A *et al* (13) observed significant difference in the hemoglobin drop in both groups. Incidence of complications in current study group was 16% for LAH and 40% for TAH group. The incidence of major complication in LAH group was 8% as compared to none in TAH group. Among major complications 2 (4%) patients has bladder injury (managed laparoscopically) and 2 (4%) had ureteric injury for which ureteric stenting was done. Minor post operative complications in LAH group were 8% vs 40% in TAH group. In LAH group, one patient had peritonitis with flare up of her dormant Abdominal Tuberculosis and 3 patients had minor degree of secondary hemorrhage for which no blood transfusion was required. While in TAH group febrile morbidity, wound sepsis and secondary hemorrhage occurred. The difference observed in intraoperative complication was insignificant whereas the difference observed in post operative complication was statistically significant. Harkki-Siren P *et al* (19) reported the risk of ureteral injuries were higher after LAH as compared to TAH (13.9/1000 and 0.4/1000 respectively). Complication incidence according to Loh FH *et al* (14) was 8.1% for LAH and 20% for TAH group. These all were minor complications. 2.7% patients of LAH group had febrile morbidity as compared to 5% in TAH group. Wound infection was encountered in 2.7% of LAH group as compared to 5% in TAH group. Perino A *et al* (13) documented 3.9% complications in LAH and 10.5% in TAH group. Major complication was found in both groups. 1.9% patients of LAH group had uretrovaginal fistula for which they required ureteric stenting and 3.5% of TAH group had vaginal cuff hemotoma for which they required blood transfusion. Garry R *et al* (17) documented higher rate of major complications in LAH group than TAH group (11.1% and 6.2% respectively) with p value 0.02. According to him this was due to less surgical expertise in LAH. It was observed that 42% of the patients of LAH group were discharged within 3 days while only 4% of TAH group were discharged within 3 days of surgery. Mean duration of Hospital stay for LAH group was 4.56 ± 3.7 days whereas mean duration of hospital stay for TAH group was 7.66 ± 3.17 days and the difference observed statistically significant. Perino A *et al* (13), Loh *et al* (14) and Garry R *et al* (17) also observed similar findings in their studies.

Conclusion

Laparoscopic hysterectomy is a better alternative to abdominal hysterectomy when vaginal hysterectomy is contraindicated or not possible. In trained hands, it leads to earlier ambulation, shorter hospital stay, faster postoperative recovery

References

1. Benrubi GI. History of hysterectomy. *J Fia Med Assoc* 1988; 75:5533-538.

2. Kluivers K, Johnson N, Chien P, *et al*. Comparison of laparoscopic and abdominal hysterectomy in terms of quality of life: a systemic review. Euripean journal of obstetrics. *Gynecology & Reproductive biology* 2008; 136(1):3-8.

3. Singh AJ, Arora AK. Menopausal women profile in North India- an integrated qualitative and quantitative study. *Adv Obstetrics & Gynaecology* 2000;52:309-313.

4. Farquhar Steiner CA. Hysterectomy rates in the United States, 1990-1997. *Obstet Gynaecol* 2002; 99:229-34

5. The Royal Collage of Obstetrics and Gynecology. National evidence based clinical Guidelines. The management of menorrhagia in secondary care. The Royal college of Obstetrics and Gynecology 2004. Avaiable at: https://www.rcog.org.uk/globalassets/documents/guidelines/nebsterilisationfull060607.pdf Acessed on : Jan, 2014

6. Michail S. Papadoroulos: hysterectomy -Current methods and alternoatives for benign indications. *Obstet & Gynecol International* 2010; Doi: 1155/2010/356740.

7. Chou DC, Rosen DM, Cario GM, *et al.* Home within 24 hours of hysterectomy. *Aust NZJ Obst Gynaecol* 1999; 39(2): 234-38.

8. Nezhat F, Nezhat C, Gordon S, *et al*. Laparoscopic versus abdominal hysterectomy. *J Reprod Med* 1992;37:24

9. Phillips G, Garry R, Clayton R, *et al*. To evaluate study: two parallel randomized trials, one comparing laparoscopic with abdominal hysterectomy, the other comparing laparoscopic with vaginal hysterectomy. *BMJ* 2004; 328 (7432): 129.

10. Loh FH, Canis M, Ng SC, *et al*. Laparoscopic hysterectomy - A step forward ? *Singaport Med J* 1995; 36: 197-203.

11. Reich H, DeCaprio J, McGlynn F, *et al*. Laparoscopic hysterectomy. *J Gyneco Surg* 1989; 5: 213-16.

12. Olive DL, Parker WH, Cooper JM, *et al*. the AAGL Classification system for Laparoscopic hysterectomy. Classification committee of the American Association of Gynecologic laparoscopists. J Am Ass Gynecol Lapraosc 2007; 7(1):9-15.

13. Pernio A, Cucinella G, Venezia R, *et al.* total laparoscopic hysterectomy versus total abdominal hysterectomy: an assessment of learning curve in prospective randomized study. *Hum Reprod* 1999; 14 (Dec.12): 2996-09.

14. Loh FH, Koa RC. Laparoscopic versus Abdominal hysterectomy: A controlled study of clinical and funcational outcomes. *Singapore Med J* 2002; 63 (8) : 403-07.

15. Kapoor N, Manuja S, Mittal A, *et al*. laparoscopic assisted vaginal hysterectomy- An effective alternative to conventional abdominal hysterectomy. *J obstet Gynecol India* 2010; 60(5):429-35.

16. O'Hanlan KA, Huang GS, Garnier AC, *et al*. total Laparoscopic hysterectomy versus Total Abdominal hysterectomy: Cohort Review of patients with uterine neoplasia. *JSLS* 2005; 9(3):277-86.

17. Garry R, Fountain J, Mason S, *et al*. "the evaluate study; two parallel randomized trials, one comparing laparoscopic with abdominal hysterectomy, the other comparing laparoscopic with vaginal hysterectomy". *BMJ* 2004; 328 (7432): 129.

18. Marana R, Busacca M, Zupi F. Lapaorscopically assisted vaginal hysterectomy versus Total abdominal hysterectomy. A prospective, randomized multicenter study. *Am J Obstet Gynecol* 1999, 180:270-275.

19. Harkki Siren P, Sjoberg J, Titinem A. Major complications of laparoscopy: A follow up Finnish Study. *Obstet Gynecol* 1998; 92:113-18.