

Comparison between Laparoscopic Hysterectomy and Abdominal Hysterectomy

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Aims: Hysterectomy can be performed by abdominal, vaginal and laparoscopic methods. Laparoscopic hysterectomy has been reported as an alternative to traditional abdominal hysterectomy with benefit of early recovery, short hospital stay and less operative complications. This study compared laparoscopic versus abdominal hysterectomy in terms of surgery time, blood loss, post-operative recovery, and duration of hospital stay.

Methods: This is a retrospective comparative study among sixty patients who underwent laparoscopic or abdominal hysterectomy for various indications in the Department of Obstetrics and Gynaecology of the Third affiliated hospital of Zhengzhou University from January to March 2007. The data of the patients meeting the set criteria were obtained from the hospital records and hospital based computerized coding system. Enrolled cases were divided in two groups with thirty in each arm. Group TLH (total laparoscopic hysterectomy) was designated for patients who underwent total laparoscopic hysterectomy and group TAH (total abdominal hysterectomy) for those who underwent total abdominal hysterectomy.

Results: There was comparatively less blood loss in TLH group (60.2±5.17 ml versus 75.7±7.12 ml) but it was statistically insignificant (p=0.12). The laparoscopic hysterectomy took longer time (107.6±32.4 min versus 74.9±31.1 min) than the abdominal (p<0.001). There was early recovery among TLH group 1.6±0.6 days versus 2.1±0.5 days in TAH group (p=0.001). Mean duration of hospital stay was significantly shorter in TLH group 7.6±1.9 days versus 10.1±2.1 days in TAH group (p<0.001).

Conclusions: Laparoscopic hysterectomy is an effective alternative to abdominal hysterectomy with the advantage of less intra-operative blood loss, fast recovery and short hospital stay.

Keywords: abdominal hysterectomy, hospital stay, laparoscopic surgery.

INTRODUCTION

Hysterectomy is one of the most common surgical procedures.¹⁻³ Hysterectomy can be performed by abdominal, vaginal and laparoscopic method. Most common reasons for performing hysterectomies are malignancies, fibroids, bleeding irregularities, endometrial hyperplasia, cervical dysplasia, endometriosis and genital prolapse.⁴⁻⁶ Abdominal hysterectomy has been the most popular method but it is more invasive and is associated with more blood loss, delayed in recovery and longer hospital stay. First reports on laparoscopy within the female pelvis was made by Roul Palmer in Paris in 1944.^{4,5,7} From this, it was a small step towards laparoscopically assisted vaginal hysterectomy (LAVH) and finally total

laparoscopic hysterectomy (TLH) was established from 1989 onwards.^{5,8} Till now, several studies have confirmed the feasibility of TLH as a safe method with better post-operative recovery, reduced need of analgesics and shorter hospital stay.⁹⁻¹¹ With further developments in techniques and experience, more complicated operations like radical hysterectomies and lymphadenectomies are being performed laparoscopically nowadays.^{3,8,12} The purpose of this study was to compare total laparoscopic versus total abdominal hysterectomy in terms of surgery time, total blood loss, post-operative recovery and duration of hospital stay.

METHODS

This is a retrospective comparative study done among sixty patients who underwent total laparoscopic or total abdominal hysterectomy for various indications in the Department of Obstetrics and Gynaecology of the Third affiliated Hospital of Zhengzhou University from January to March 2007. The data

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of the patients were obtained from hospital records as well as hospital based computerized coding system. Case selection was on the basis age, size of the uterus and disease condition. Women of age 35-60, having benign disease with uterus size of less than 12 weeks were included in the study. Enrolled patients were grouped into two of thirty each. Group TLH was designated for patients who underwent total laparoscopic hysterectomy and group TAH for those who underwent total abdominal hysterectomy. Different variables of each patient were recorded. Data were gathered with help of Microsoft Excel and analyzed with software SPSS 13 and PHSTAT 2. Independent t-test was used for comparisons of different numeric variables such as age, blood loss, hospital stays. Likewise z-test was used to compare the percentage of certain characteristics such as blood loss <50 ml. Statistical significance was defined as $p < 0.05$.

RESULTS

Sixty patients who underwent TLH or TAH for various indications were enrolled for the study. The mean age of the patients in TLH group was 42.2 ± 5.4 years and that of TAH group was 44.6 ± 6.4 years ($p = 0.13$). The indications for surgery were: fibroids 32 (53.3%), adenomyosis 12 (20%), DUB 8 (13.3%), PID 5 (8.3%), endometriosis 2 (3.3%) and CIN III 1 (1.7%).

Surgery Time

The surgery time for TLH ranged from 60 to 180 minutes, where as it ranged from 30 to 150 minutes for TAH. So the mean surgery time was longer for TLH when compared to TAH, which was statistically significant ($p < 0.001$) {Table 1}.

Table 1. Mean surgical time taken in TAH and TLH groups (n=60).

Groups	Surgical time in minute (Mean±SD)
TAH (n=30)	74.9±31.1
TLH (n=30)	107.6±32.5

Blood loss

The over all intraoperative blood loss was less in TLH when compared to TAH but it was not statistically significant. Majority of cases 28 (93.3%) cases in

TLH versus 19 (63.3%) in TAH had blood loss of less than 100 ml. Where as 2 (6.6%) cases in TLH group and 11 (36.7%) in TAH group had blood loss of more than 100 ml (Table 2).

Table 2. Mean blood loss (n=60).

Groups	Blood loss (Mean±SD)
TAH (n=30)	75.7±7.12 ml
TLH (n=30)	60.2±5.17 ml

$p = 0.12$

Day of mobilization

The study showed that post-operative mobilization and recovery was significantly earlier in patients among TLH group when compared to TAH group. The mean day for mobilization in TLH group was 1.6 ± 0.6 days versus 2.1 ± 0.5 days in TAH group ($p = 0.001$).

Hospital stay

The mean duration of hospital stay for patients in TLH group was significantly shorter when compared to TAH group (7.6 ± 1.9 versus 10.1 ± 2.1 days) which was statistically significant ($p < 0.001$).

DISCUSSION

In this study there is homogeneity among demographic character in regards to their age and indication for surgery. The mean age of the patients in TLH group was 42.2 years versus 44.6 years in TAH group. The most common indications for surgery were fibroids 32 (53.3%), adenomyosis 12 (20%), DUB 8 (13.3%), PID 5 (8.3%), endometriosis 2 (3.3%) and CIN III 1 (1.7%). Similar findings were obtained in the study of Loh et al.¹³ in which the most common indication for surgery were fibroids contributing 48 (60%), and adenomyosis 21 (26%) which is comparable to the present study.

In the present study the mean surgical time taken for laparoscopic hysterectomy was longer when compared to abdominal hysterectomy (107.6 ± 32.4 min versus 74.9 ± 31.1 min), which was statistically significant ($p < 0.001$). Similar finding was shown in the studies by Garry et al⁴ and Michel et al,⁸ stating that laparoscopic hysterectomy takes longer. Likewise in a study by Loh et al¹³, the mean duration

of surgery was shown as 159 minute in TLH group and 98 minute in TAH group.

The mean intra-operative blood loss in the current study was less in laparoscopic hysterectomy (60.2±5.17 ml versus 75.7±7.12 ml) but it was statistically not significant (p=0.12). Similar findings were present in the study by Perino et al¹² as well as in study by Katherine et al¹⁴ in which the blood loss was 138 ml in TLH when compared to 504 ml in TAH (p<0.001). In our study, it was shown that the patients who underwent laparoscopic hysterectomy were mobilized earlier than those who underwent abdominal hysterectomy. The mean time of post-operative mobilization was 1.6±0.6 days for TLH group and 2.1±0.5 days for TAH group that was statistically significant (p=0.001). Similar result was obtained in the study of Loh et al¹³ in which the mean post-operative mobilization for TLH was 2.7± 0.7 days versus 3.3±0.6 days for TAH group.

Hospital stay is a matter of concern for every patient and their family. Longer hospital stay is usually associated with financial burden, psychological stress. The mean hospital stay of patients in TLH group was significantly shorter when compared to TAH group (7.6±1.9 days versus 10.1±2.1 days) which was statistically significant. (p<0.001). This finding is comparable to study by Cracken et al³ done among 135 patients, in which the hospital stay for laparoscopic hysterectomy was significantly shorter than for abdominal hysterectomy with 6.1 days and 8.3 days respectively. Similarly in another study by Frigerio et al¹⁵ patients in group TAH had significantly shorter operating time but with longer hospital stay with the mean of 8.5 days in TAH group and 4 days in TLH group.

CONCLUSIONS

Laparoscopic hysterectomy is an effective alternative to abdominal hysterectomy with the advantage of less intraoperative blood loss, fast recovery and short hospital stay.

DISCLOSURE

The authors report no conflicts of interest in this work.

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