

Comparison of laparoscopic and abdominal methods of hysterectomy from patient's perspective

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Abstract

Objective: The aim of this study was to compare the postoperative pain and satisfaction of patients who underwent total laparoscopic or abdominal hysterectomy for benign gynecologic conditions.

Materials and Methods: This study was a prospective, randomized trial. A visual analogue scale and patient satisfaction score scale were used to evaluate the patients' postoperative satisfaction rates. Seventy-one patients who underwent total laparoscopic hysterectomy were compared with 68 patients who underwent total abdominal hysterectomy for benign gynecologic indications.

Results: The groups were similar with respect to age, race, gravidity and parity status, and uterine weight. Hospital stay; need for analgesic use; visual analogue scale pain scores at 12, 24, and 36 hours; patient satisfaction scores at 24 and 48 hours and one week; and blood loss were statistically lower in the laparoscopic hysterectomy group than in the abdominal hysterectomy group ($p < 0.001$).

Conclusion: Laparoscopic hysterectomy was superior to abdominal hysterectomy in terms of short-term followup, postoperative pain, and satisfaction with the operation scar.

Key words: Abdominal Hysterectomy, Laparoscopic hysterectomy, Pain, Satisfaction, Visual Analog Scale

Introduction

More than 70% of hysterectomies are performed for benign surgical indications, including fibroids (33%), uterine prolapse (28%), menorrhagia (21%), and pelvic pain (3%) (1). 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 with abdominal hysterectomy (2). Advanced laparoscopic procedures are increasingly being utilized in gynecologic surgery (3); however, the abdominal hysterectomy technique is still performed in over 80% of operations (4).

The visual analogue scale (VAS) is a psychometric response scale that can be used in questionnaires. It is a measurement instrument for subjective characteristics or attitudes that cannot be measured directly. When responding to a VAS item, respondents specify their level of agreement with a statement by indicating a position along a continuous line between two end-points. This continuous (or analogue) aspect of the scale differentiates it from discrete scales. There is evidence showing that visual analogue scales have metric characteristics that are superior to those of discrete scales; thus, a wider range of statistical methods can be applied to the measurements (5). The patient satisfaction score (PSS) is a similar scoring

system that calculates the satisfaction of the patient in a similar manner as VAS.

The aim of this study was to compare the short-term results of the laparoscopic and abdominal hysterectomy techniques and to compare the satisfaction rates of the patients with the operation scar.

Materials and Methods

This study was designed as a prospective, randomized trial. Seventy-one patients who underwent total laparoscopic hysterectomy were compared with 68 patients who underwent total abdominal hysterectomy for benign gynecologic indications. The indications for operation were fibroid, abnormal uterine bleeding, endometrial hyperplasia, and cervical intraepithelial neoplasia. Age, weight, and height of the patients were recorded just prior to going into the operating room. A metric body mass index (BMI) calculator was used to calculate the BMIs of the patients. Postoperative pain was measured on a VAS at 12, 24, and 36 hours postoperatively. The patients were asked to rate their pain on a scale of 1–10 (0=no pain; 2=mild; 5=moderate; 7=severe; 10=excruciating). The patients were also evaluated for their satisfaction with

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the abdominal operation scar on a PSS scale at postoperative 24 and 48 hours and one week. The patients were asked to rate their satisfaction with the operation scar on a scale of 1–10 (1=minimum and 10= maximum). All of the patients in the trial were evaluated by the same nursing staff.

Approval was obtained from an independent ethics committee, and the patients provided formal, informed consent prior to their participation in the clinical study.

Statistical analyses were carried out using PASW software, version 15.0 for Windows (SPSS, Chicago, IL). Student's t-test was used for statistical comparisons.

Results

The groups were similar in terms of age, race, gravidity and parity status, and uterine weight. The mean BMI value was statistically lower in the laparoscopic group than in the open abdominal group (27.65 ± 4.07 and 29.53 ± 3.90 , respectively; $p=0.006$). There was no need to convert from laparoscopic to open abdominal surgery in any of the cases.

Hospital stay; need for analgesic use; VAS pain scores at 12, 24, and 36 hours; patient satisfaction scores at 24 and 48 hours and one week; and blood loss were statistically lower in the laparoscopic hysterectomy group than in the abdominal hysterectomy group ($p<0.001$). Although not statistically significant, the operation time was shorter in the laparoscopy group (Table 1). The indications for the operation are shown in Table 2.

Six (8.5%) patients in the laparoscopic hysterectomy group and 45 (66.2%) patients in the abdominal hysterectomy group had a history of abdominal operation ($p<0.001$). No serious perioperative complications were observed in either group. Only one uncomplicated wound infection occurred, in the abdominal hysterectomy group.

Discussion

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

Previous studies have shown that laparoscopic hysterectomy is a comparable method to abdominal hysterectomy and results in less blood loss, shorter hospital stay, fewer wound infections, less pain, quicker recovery, and better short-term quality of life results. In those studies, mean operation time was longer in the laparoscopy groups (6, 7, 8). Another study that compared laparoscopic and abdominal hysterectomies found that the operation time was significantly longer in the laparoscopy group, estimated perioperative bleeding was greater in the

abdominal hysterectomy group, and there was no difference in length of postoperative hospital stay between the two groups (9). Our study found that both operation time and hospital stay were shorter in the laparoscopic hysterectomy group. This difference might be due to the surgeons' experience with laparoscopic procedures in our study center. Although no major perioperative complications were observed in our study population, lower complication rates have been reported with laparoscopic procedures in the literature (10, 11).

There are two novel reports comparing laparoscopic hysterectomy with mini laparotomic abdominal hysterectomy. In a retrospective analysis, Kumar et al. found that mini laparotomy had a shorter intraoperative time and less blood loss, but a higher rate of major wound complications (12). Sirisabya et al. found similar postoperative pain and patient satisfaction results in the two groups, but a much higher postoperative complication rate in the laparoscopy group (13). These reports are not consistent with our findings. Although the differences might be related to the experience of the surgeons and the center or to the mini laparotomic incision in the abdominal approach, further studies are needed.

A study comparing laparoscopic and abdominal hysterectomies in terms of quality of life in a small study group found a significant treatment effect favoring laparoscopic hysterectomy in the RAND-36 scale for vitality (14).

Postoperative pain and the appearance of the operation scar are two valuable parameters for hysterectomy patients. In our study, postoperative pain and need for analgesic use were lower in the laparoscopy group, which is similar to results found in the literature. We also asked the patients what they thought of their operation scar, and the satisfaction rate was significantly higher in the laparoscopic group. We believe this is an important parameter when choosing the operative technique.

Conclusion

In conclusion, total laparoscopic hysterectomy is a remarkable alternative operation to abdominal hysterectomy in the management of benign gynecologic conditions when the operation team is experienced with laparoscopic surgery. Minimally invasive techniques could improve patient satisfaction and compliance with the operation.

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Table 1. Group statistics of the laparoscopic and abdominal hysterectomy patients

	Laparoscopy group (n=71)	Abdominal Hysterectomy group (n= 68)	p-value
Age	47,7± 5,13	47,44± 4,63	0,752
BMI	27,65± 4,07	29,53± 3,90	0,006
Gravidy	3,32± 1,39	3,73± 2,39	0,216
Parity	2,70± 1,17	2,78± 1,19	0,709
Uterine weight (g)	387,60± 113,64	385,51± 102,0	0,909
Preop. Hb level	10,99± 0,90	11,17± 0,87	0,252
Postop. Hb level	10,14± 0,91	10,08± 0,74	0,666
Hospital stay	3,21± 0,61	4,29± 0,95	0,000
Analgesic need	2,66± 0,97	6,60± 0,59	0,000
VAS 12 hours	5,12± 1,51	7,07± 1,15	0,000
VAS 24 hours	3,98± 1,11	5,57± 1,02	0,000
VAS 36 hours	3,28± 0,99	4,14± 1,02	0,000
PSS 24 hours	8,43± 7,77	5,75± 1,02	0,000
PSS 48 hours	9,07± 0,54	6,55± 1,09	0,000
PSS 1 week	9,49± 0,53	7,05± 1,23	0,000
Blood loss (ml)	118,45± 79,16	212,64± 162,87	0,000
Operation time (min)	86,12± 18,97	93,19± 22,15	0,062

BMI: Body-mass index, p<0,005, VAS: Visual Analogue Scala, PSS: Patient Satisfaction Score

Table 2. Distribution of the operation indications of the patients

Diagnosis	Group		
	Laparoscopy (n=71)	Abdominal (n=68)	Total (n=139)
Myoma	31 (% 43,7)	31 (% 45,6)	62 (% 44,6)
Abnormal uterine bleeding (AUB)	14 (% 19,7)	14 (% 20,6)	28 (% 20,1)
Myoma+ AUB	18 (% 25,4)	18 (% 26,5)	36 (% 25,9)
Endometrial hyperplasia	7 (% 9,8)	5 (% 7,4)	12 (% 8,6)
Cervical Intraepithelial Neoplasia	1 (% 1,14)	0 (% 0)	1 (% 0,7)

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