

COMPARATIVE STUDY OF LAPAROSCOPIC HYSTERECTOMY WITH TOTAL ABDOMINAL HYSTERECTOMY

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ABSTRACT

BACKGROUND

Hysterectomy is the second most commonly performed major surgical procedure on women all over the world, next only to caesarean. The purpose of the present study was to compare the outcome between laparoscopic hysterectomy and total abdominal hysterectomy regarding duration of surgery (minutes), postoperative pain, drop in haemoglobin postoperatively, intraoperative and postoperative complications and hospital stay.

MATERIALS AND METHODS

This study was designed as a comparative observational study. Fifty-six patients who underwent laparoscopic hysterectomy were compared with 56 patients who underwent total abdominal hysterectomy for benign gynaecologic indications at Department of Obstetrics and Gynaecology, Acharya Vinoba Bhave Rural Hospital, Sawangi (Meghe), Wardha during September 2016 to August 2018.

RESULTS

Laparoscopic hysterectomy took longer time (157.32 ± 11.83 min) than abdominal hysterectomy (110.98 ± 14.44 min) which was statistically significant (p -value=0.0001). There was comparatively less drop in postoperative haemoglobin in laparoscopic hysterectomy (0.62 ± 0.77 versus 1.06 ± 0.74) than abdominal hysterectomy which was again statistically significant (p -value=0.001). There was a significant difference in the pain scores using Visual Analogue Score (VAS) among the two study groups ($p=0.0008$). Mean duration of hospital stay was significantly shorter in laparoscopic hysterectomy 4.62 ± 0.61 days as compared to Total Abdominal Hysterectomy group in which it was 8.71 ± 1.64 days ($p= 0.0001$).

CONCLUSION

Laparoscopic hysterectomy has an advantage of less postoperative pain, shorter hospital stay, less drop in haemoglobin %age postoperatively as compared to the abdominal procedure.

KEYWORDS

Laparoscopic Hysterectomy, Total Abdominal Hysterectomy.

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BACKGROUND

Hysterectomy is the second most commonly performed major surgical procedure on women all over the world, next only to cesarean.¹

In India, a lower hysterectomy rate 4-6% has been reported as compared to a higher frequency 10-20% in other countries. The reason for the lower rate has been proposed

as low level of medicalization, high tolerance and threshold of Indian women.^{2,3}

As hysterectomy is a frequent surgical procedure in gynaecology, gynaecologists continuously research improved alternative techniques, and advanced laparoscopic techniques have been increasingly used in gynaecologic surgery over the past 20 years.⁴

Hysterectomy is most often indicated when medical treatment or less invasive methods have failed. It is surgical treatment option associated with physical, social, emotional complications as well as economic costs.⁵

Minimal access surgery has allowed patients to recover fast with lesser pain as when compared to similar procedures performed through conventional abdominal approach.⁶

The goal of every surgical procedure is to obtain the best clinical outcome and minimizing complications.⁷

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In the past two decades the use of laparoscopy in gynaecological procedure has been widespread.

Since the introduction by Reich in 1989 the Laparoscopic hysterectomy has become a widely accepted technique worldwide.⁸

Total Laparoscopic hysterectomy was found to be a safer method of hysterectomy with less complications.⁹ As compared to total abdominal hysterectomy lesser blood loss, less intraoperative complications betterment in quality of life, shorter postoperative stay and faster return to routine work was seen after laparoscopic hysterectomy.^{2,10}

Our hospital being a tertiary care Centre and teaching institute with patients admitted from far remote and rural areas and illiteracy. The acceptability of minimal access procedures is not that obvious in them as in urban population.

This study has been undertaken to find out the response of our patients to laparoscopic hysterectomy with the aim of comparing advantages of laparoscopic versus abdominal hysterectomy on the basis of following parameters - operative time, postoperative drop in haemoglobin, postoperative pain, complications and post-operative stay in hospital.

Aim and Objectives

Aim

We aim to study the advantages of Laparoscopic hysterectomy in comparison with Total abdominal hysterectomy.

1. To compare drop in haemoglobin level postoperatively of both surgical procedures.
2. To compare the duration of surgery (minutes) in laparoscopic and total abdominal hysterectomy.
3. To compare postoperative pain after both surgical procedures.
4. To compare the duration of postoperative hospital stay in both surgical procedures.
5. To compare intraoperative and postoperative complications of laparoscopic and total abdominal hysterectomy.

MATERIALS AND METHODS

Study Design- Comparative observational study.

Place of Study- The study was conducted at Department of obstetrics and gynaecology, Acharya Vinoba Bhave Rural Hospital, Sawangi (Meghe), Wardha.

Study Duration- September 2016 to August 2018.

Sample Size -112

56 patients in each group (abdominal hysterectomy and laparoscopic hysterectomy).

Inclusion Criteria

- All patients undergoing hysterectomy either by abdominal approach or by laparoscopic approach in Department of Obstetrics & gynecology at AVBRH.
- Patients giving consent to be a part of the study.

Exclusion Criteria

- Those with uterine size above 12 weeks.
- Cases with utero vaginal prolapse, cardiac or pulmonary disease, active abdominal tuberculosis, proven or suspected malignancy, presence of any adnexal mass, broad ligament fibroid and endometriosis
- Those patients who underwent laparoscopic hysterectomy and got converted into laparotomy.
- Patients with history of any previous abdominal surgery except Tubal ligation.
- Patients not willing to give consent to be a part of the study.

Study Design

All patients who were admitted in the Department of Obstetrics & Gynecology, at AVBRH for laparoscopic and total abdominal hysterectomy.

The study patients had undergone a pre-operative evaluation was done and then the confirmation of diagnosis and indication for hysterectomy was decided.

Enrolled patients who had given consent to participate in the study were grouped into A and B groups comprising of 56 cases each. The patients who underwent laparoscopic hysterectomy were assigned as group A and the patients those who underwent total abdominal hysterectomy were included in group B.

Patient selection for each group was done by Envelope method.

All patients participating in the study were explained about the study in detail and a predesigned proforma was given. All the surgeries were done by the same gynecologist surgeon as principle surgeon. Women in both groups underwent hysterectomy as per the standard procedure.

The patients had undergone laparoscopic hysterectomy by operative technique for total laparoscopic hysterectomy.

The following parameters were assessed in each group-

1. Drop in hemoglobin
2. Duration of surgery.
3. Post-operative pain by using Visual Analogue Scale at the score of 0-10 at 24 hours after surgery.
4. Duration of post-operative stay in hospital calculated from the date of operation to date of discharge from the hospital.
5. Intra and Postoperative complications.

Mean Drop in Hemoglobin

Mean drop hemoglobin level in both the groups was calculated by noting the preoperative at the time of admission and postoperative hemoglobin 24hours after the surgery. Preoperative blood transfusion was not required amongst any of the patients in both the groups as patients had hemoglobin more than 10 gm/dl.

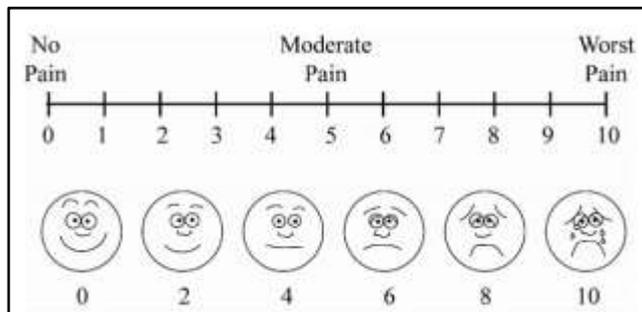
Duration of Surgery

The onset of the surgery was considered as of umbilical incision for laparoscopic hysterectomy and skin incision for the abdominal hysterectomy. The last port closure was

considered the end of surgery in laparoscopic hysterectomy and low transverse skin incision closure for total abdominal hysterectomy. Accordingly, the duration of surgery was calculated.

Post-operative Pain

Postoperative pain was assessed using a visual analogue scale (0 for no pain to 10 for maximum pain) at 24 hours after the surgery.



Duration of Hospital Stay

Duration of hospital stay (days) was calculated from the day of surgery to the day patient got discharged from the hospital.

Intra and Postoperative Complications

Intraoperative complications like injury to bowel, urinary bladder, ureter and hemorrhage requiring blood transfusion were noted.

Postoperative complications like fever, paralytic ileus, wound infection or post site infection and resuturing were also noted.

Statistical Analysis

Statistical analysis was done by using descriptive and inferential statistics by using chi square test, Mann-Whitney U test and Student's unpaired t test and software used in the analysis were SPSS 22.0 version and GraphPad Prism 6.0 version and $p < 0.05$ is considered as level of significance.

RESULTS

The present Comparative study of laparoscopic hysterectomy and total abdominal hysterectomy was carried out at Acharya Vinoba Bhave Rural Hospital during the period of September 2016 to august 2018.

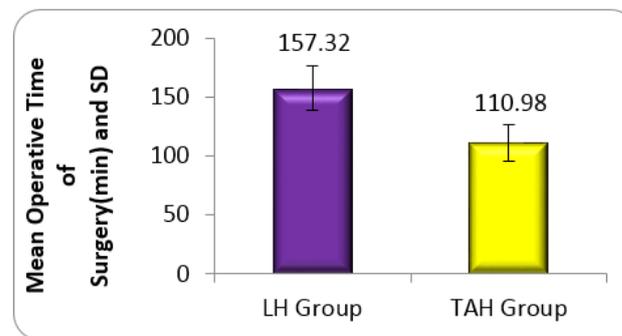
Following observations and results were noted.

Student's unpaired t test.

Group	No. of Patients	Mean	Standard Deviation	Standard Error Mean	t-value	p-value
LH Group	56	157.32	11.83	1.58	18.57	0.0001, S
TAH Group	56	110.98	14.44	1.92		

Group	No. of Patients	Mean	Standard Deviation	Standard Error Mean	t-value	p-value
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Table 1. Comparison of Duration of Surgery (minutes) in Two Groups



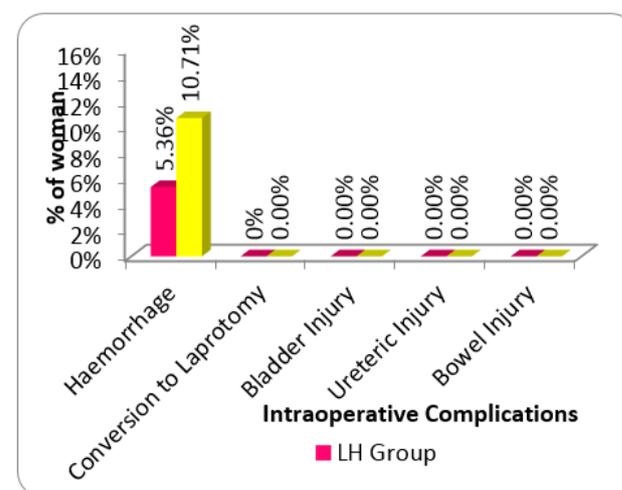
Graph 1. Comparison of Duration of Surgery (minutes) in Two Groups

Intraoperative Complications	TLH Group	TAH Group	χ^2 -value	p-value
Haemorrhage	3(5.36%)	6(10.71%)	1.80	0.17, NS
Conversion to laparotomy	0 (0%)	0 (0%)		
Bladder injury	0 (0%)	0 (0%)		
Ureteric injury	0 (0%)	0 (0%)		
Bowel injury	0 (0%)	0 (0%)		

Table 2. Comparison of Intraoperative Complications in Two Groups

Chi-square test.

By using chi-square test χ^2 -value =1.80 statistically insignificant difference with p -value=0.17 was found in intra operative complications among two groups.

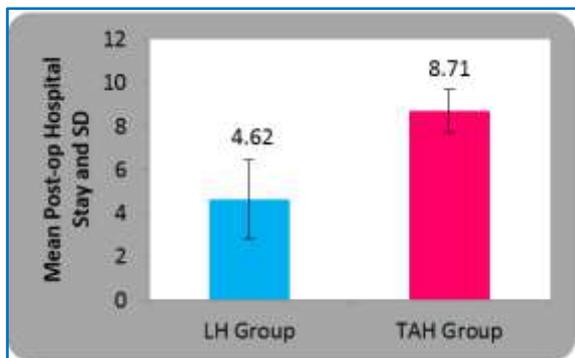


Graph 2. Comparison of Intraoperative Complications in Two Groups

Procedure	No. of Patients	Mean	Standard Deviation	Standard Error Mean	z-value	p-value
LH	56	4.67	1.23	0.16	14.79	0.0001, S
TAH	56	7.71	0.90	0.12		

Table 3. Postoperative pain on Visual Analog Scale at 24 hours after surgery in both groups

Mann Whitney U test.



Graph 3. Postoperative Pain on Visual Analog Scale at 24 Hours After Surgery in Both Groups

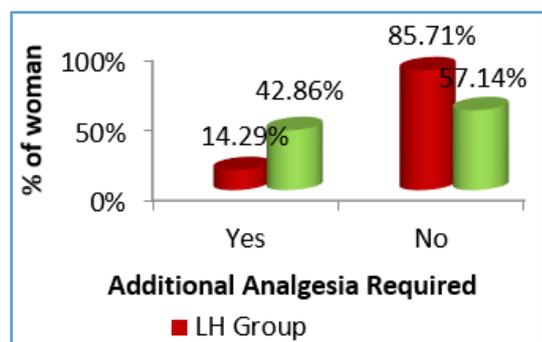
Additional Analgesia Required	LH Group	TAH Group	χ ² -value	p-value
Yes	8(14.29%)	24(42.86%)	11.20	p=0.0008, S
No	48(85.71%)	32(57.14%)		
Total	56(100%)	56(100%)		

Table 4. Distribution of Women in both Groups According to Additional Analgesia Required

In the present study 24 (42.86%) patients required additional analgesia in abdominal group and 32(57.14%) patients did not require additional analgesia post hysterectomy.

In the laparoscopic group 8(14.29%) required additional analgesia whereas 48(85.71%) in the same group did not require additional analgesia.

By using chi-square test χ^2 -value=11.20 statistically significant difference with p value=0.0008 was found between patients requiring additional analgesia in two groups.



Graph 4. Distribution of Women in both Groups According to Additional Analgesia Required

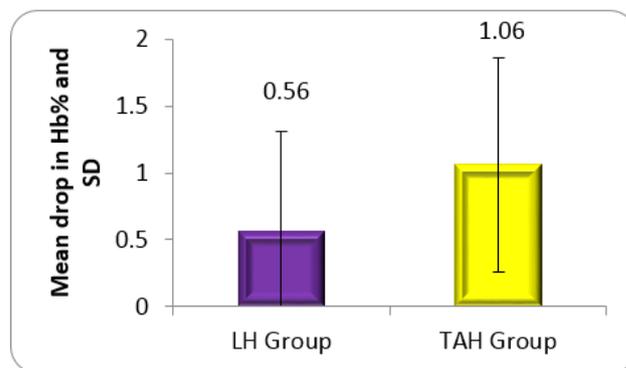
Deficit	Group	No. of Patients	Mean	Standard Deviation	Standard Error Mean	t-value	p-value
	LH Group	56	0.62	0.77	0.10	3.05	0.003, S
	TAH Group	56	1.06	0.74	0.09		

Table 5. Comparison of Mean Drop in Haemoglobin % after 24 Hours in Two Groups

Student's unpaired t test.

In the present study the mean drop in the abdominal group was 1.06 with standard deviation of 0.74 more drastic when compared to the laparoscopic group 0.62 with standard deviation of 0.77.

By using Student's unpaired t test statistically significant difference was found in mean drop in haemoglobin among two groups (t=3.05, p-value=0.0003).

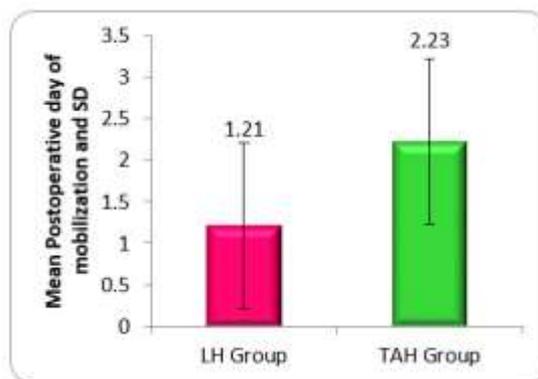


Graph 5. Comparison of Mean Drop in Haemoglobin after 24 Hours in Two Groups

Student's unpaired t test

Group	No. of Patients	Mean	Standard Deviation	Standard Error Mean	t-value	p-value
LH Group	56	1.21	0.41	0.05	12.82	0.0001, S
TAH Group	56	2.23	0.42	0.05		

Table 6. Comparison of Postoperative day of Mobilization in Two Groups



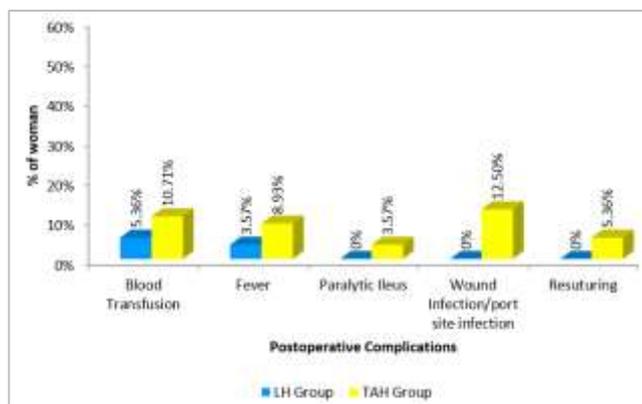
Graph 6. Comparison of Postoperative Day of Mobilization in Two Groups

Postoperative Complications	LH Group	TAH Group	χ^2 -value	p-value
Blood Transfusion	3(5.36%)	6(10.71%)	4.62	0.32, NS
Fever	2(3.57%)	5(8.93%)		
Paralytic Ileus	0 (%)	2 (3.57%)		
Wound Infection/port site infection	0(0%)	7 (12.50%)		
Resuturing	0(0%)	3(5.36%)		

Table 7. Comparison of Postoperative Complications in Two Groups

Chi square test.

By using chi-square test χ^2 -value = 4.62 statistically insignificant difference with p-value= 0.32 was found in postoperative complications among two groups.



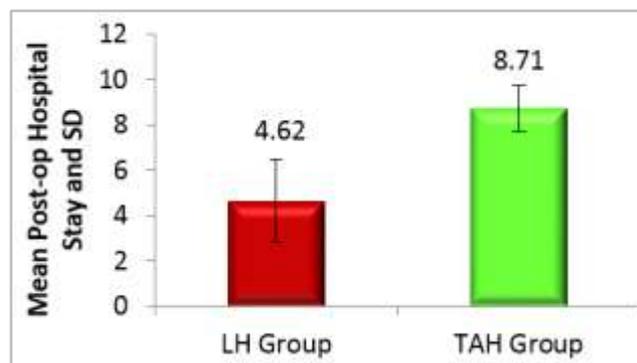
Graph 7. Graph Showing Comparison of Postoperative Complications in Two Groups

Group	No. of Patients	Mean	Standard Deviation	Standard Error Mean	t-value	p-value
LH Group	56	4.62	0.61	0.08	17.37	0.0001, S
TAH Group	56	8.71	1.64	0.22		

Table 8. Comparison of Post-operative Hospital Stay in Days in Two Groups

Student's unpaired t test.

Mean postoperative hospital stay was more in abdominal method 8.71 with standard deviation of 1.64 days than in laparoscopic method 4.62 with standard deviation of 0.61days. By using Student's unpaired t test statistically significant difference was found in mean postoperative hospital stay among two groups (t=17.37, p-value=0.0001).



Graph 8. Comparison of Post-operative Hospital Stay (Days) in Two Groups

DISCUSSION

The present study is a prospective type of comparative observational study between laparoscopic and abdominal hysterectomy in rural population attending the Obstetrics and Gynaecology OPD in AVBRH, Sawangi (Meghe). This study has been done for a duration of 2 years from September 2016 to August 2018.

In the present study, the outcome of 112 patients, out of which 56 who underwent laparoscopic hysterectomy was compared with similar 56 patients who underwent total abdominal hysterectomy for benign gynaecological conditions.

Patients in both groups were studied for certain characteristics which have been discussed in detail below.

Authors	Place of Study	Mean Age (years)	
		Laparoscopic Hysterectomy	Abdominal Hysterectomy
Hasan Terzi et al ⁴	Turkey	47.7±5.13	47.44±4.63
Sutasanasuang et al ¹²	Thailand	47.1±8.2	49.9±6.3
Osman Balci et al ¹¹	Turkey	47.9±5.6	49.5±5.3
Present study	India	47.64±5.19	49.51±5.95

Table 9. Mean Age of Patients in Our Study and Different Other Studies in Both Groups

In the present study the maximum number of cases i.e. 26 (46.43%) were between the age group of 40-45 years in laparoscopic Hysterectomy group and 22 (39.29%) were between the age group of 46-50 years in Total abdominal Hysterectomy group.

Mean age of patient in laparoscopy group was 47.64 ± 5.19 years as compared to 49.51 ± 5.95 years in abdominal hysterectomy group. However, the difference in mean age in two groups in the present study is not significant.

In a study conducted by Osman Balci et al¹¹ mean age of laparoscopic hysterectomy group was found to be 47.9±5.6 years and in abdominal group it was 49.5 ± 5.3 years which correlated well with the present study.

Other studies conducted worldwide with patients in similar age group have been mentioned above.

Indication of Hysterectomy

In the present study the indications for laparoscopic hysterectomy were fibroid (39.29%), abnormal uterine bleeding (26.79%), adenomyosis (25%), endometrial hyperplasia (7.14%) and polyp (1.79%).

Similarly, the indications for laparoscopic hysterectomy were fibroid (43%), abnormal uterine Bleeding (27%), adenomyosis (13%), polyp (9%), endometrial hyperplasia (8%) in the study conducted by Osman Balci et al.

In the present study the indications for abdominal hysterectomy were fibroid (48.21%), abnormal uterine bleeding (25%), adenomyosis (14.29%), endometrial hyperplasia (7.14%) and polyp (5.36%).

Similarly, in the study by Osman Balci et al,¹¹ the indications for abdominal hysterectomy were fibroid (48%), AUB (22.5%), adenomyosis (12.5%), polyp (8%), endometrial hyperplasia (9.5%).

Duration of Surgery / Operative Time

Authors	Place of Study	Mean Duration of Surgery (Mins)	
		Laparoscopic Hysterectomy	Abdominal Hysterectomy
Kanmani M et al ⁸	India	124±39.7	104.7±39.8
Cem Celik et al ¹³	Turkey	202±61.5	138±40.5
Patel Ekta ¹⁴	India	169.83±25.47	89.16±42.61
Present Study	India	157.32±11.83	110.98 ±14.44

Table 10. Mean Duration of Surgery in Both Groups in Our Study and Different Other Studies

In the present study, the mean duration of surgery was longer in laparoscopic hysterectomy (157.32±11.83min.) as compared to abdominal hysterectomy (110.98 ±14.44min).

The difference was statistically significant with a P value <0.05.

Our institute being a teaching institute, laparoscopic surgeries are assisted by residents who were being trained with endoscopy trainers. Operative time required for laparoscopic hysterectomy is longer as there is a "learning curve" which represents adapting to depth perception and becoming familiar with the instrumentation, ergonomics and technique hence more time was required for dissection in laparoscopic hysterectomy.

The studies done by Patel Ekta et al,¹⁴ Cem celik et al,¹³ Kanmani et al.⁸ had longer duration of surgery in laparoscopic hysterectomy which correlated well with the present study.

Post-Operative Pain

Authors	Place of Study	Mean Postoperative Pain (VAS Score)	
		Laparoscopic Hysterectomy	Abdominal Hysterectomy
A.Perino et al ¹⁵	Italy	4.1±1.2	6.9±1.8
Sutasanasuang et al ¹²	Thailand	5.4±0.7	8.7±1.3

Hasan Terzi et al ⁴	Turkey	3.98±1.11	5.57±1.02
Present Study	India	4.67±1.23	7.71±0.90

Table 11. Post-operative Pain at 24 Hours After Surgery in both Groups in the Present Study and Different Other Studies Done Worldwide

Mean post-operative pain on Visual Analog Scale Score at 24 hours after surgery was more in abdominal hysterectomy (7.7±0.90) than in laparoscopy group (4.67±1.23). The difference was statistically significant (p-value=0.0001).

The mean VAS score after abdominal hysterectomy was 6.9±1.8 in a study done by A. Perino et al. and this fairly correlates to our study where mean VAS score after abdominal hysterectomy was 7.7±0.90 done 24 hours post operatively.

In laparoscopic hysterectomy group mean VAS in our study was 4.67±1.23 which was well correlated with study done by A. Perino et al¹⁵ with VAS score of 4.1±1.2

Additional Analgesia

In the present study 24 (42.86%) patients required additional analgesia in the abdominal group and 8(14.29) patients in laparoscopic group during first 24hours post operatively. The difference was statistically significant with a P value <0.05 (p-value=0.0008).

Nigamananda Mishra et al.¹⁶ in their study reported a significant difference (p-value=0.015) in requirement of addition analgesia after abdominal hysterectomy 14 (63.6%) patients and 6 (27.3%) patients after laparoscopic hysterectomy.

Patel Ekta et al¹⁴ reported that 4 hours after abdominal hysterectomy all patients required analgesia while in laparoscopic hysterectomy 76.6% required analgesia. While 8 hours after abdominal hysterectomy 93.3% and after laparoscopic hysterectomy only 10% required analgesia. They found that as duration of postoperative period increases less amount of analgesia is required after laparoscopic hysterectomy.

Mean Drop of Haemoglobin

Authors	Place of Study	Mean Post-operative Drop in Haemoglobin %	
		Laparoscopic Hysterectomy	Abdominal Hysterectomy
Kanmani M et al ⁸	India	1.12±0.7	1.57±0.7
Ajay Wakhloo et al ¹⁷	India	0.96±0.54	1.12±0.5
A. Perino et al ¹⁵	Italy	0.4±0.2	1.6±0.4
Present Study	India	0.62±0.77	1.06±0.74

Table 12. Mean Drop in Haemoglobin % Post Operatively in both Groups in Our Study and Different Other Studies

In the present study, the mean drop in haemoglobin after 24hours post operatively was more after abdominal

hysterectomy 1.06±0.74 gm% than laparoscopic hysterectomy 0.56±0.81gm%. The difference was statistically significant (p-value 0.0003) among the two groups.

In a study done by A.Perino et al,¹⁵ the mean hemoglobin drop post operatively after abdominal hysterectomy was 1.6±0.4 gm% which was significantly more than in laparoscopic hysterectomy 0.4±0.2 gm%. This finding associated well with the present study.

Ajay Wakhloo et al.¹⁷ in their study reported that fall in hemoglobin after abdominal hysterectomy was 1.12±0.5 gm% which was more than in laparoscopic hysterectomy 0.96±0.54 gm%. This was statistically not significant (p-value=0.09). Similar result was found in studies done by Edi vaisbuch et al.¹⁸

In another study done by Kanmani et al. (8) the drop in hemoglobin count after abdominal hysterectomy (1.57±0.7 gm%) was more than in laparoscopic hysterectomy 1.12±0.7gm% which was statistically significant. (P-value=0.0005)

Anand Murari Nanavati et al.¹⁹ in their study reported that average blood loss in total laparoscopic hysterectomy was significantly lower than abdominal hysterectomy. They found that the blood loss was less in total laparoscopic hysterectomy as it had better magnification, hemostasis due to vessel sealing devices and coagulation devices, smaller incision and pressure due to pneumoperitoneum.

Postoperative Day of Ambulation

Authors	Laparoscopic Hysterectomy (days)	Abdominal Hysterectomy (days)
Shreshtha et al ²⁰	1.0±0.6	2.1±0.5
Present study	1.21±0.41	2.23±0.42

Table 13. Postoperative Day of Ambulation

In the present study mean postoperative day of mobilization after laparoscopic hysterectomy (1.21±0.41 days) was lesser than abdominal hysterectomy was (2.23±0.42 days). This difference was found to be statistically significant with a P value less than 0.05.

In a study done by Shrestha et al.²⁰ the mean post-operative day of mobilization after abdominal hysterectomy was 2.1±0.5 days and after laparoscopic hysterectomy it was 1.6±0.6days.These findings correlated well with the mean post-operative days of mobilization in the present study.

Authors	Satasanasuang et al.		Present study	
	LH	AH	LH	TAH
Intraoperative Complication	13 (43.33%)	5 (16.67%)	9 (16.07%)	8 (12.5%)
Postoperative Complication	14 (46.65%)	13 (43.33%)	10 (17.85%)	23 (41.07%)

Table 14. Complications

In the present study the intraoperative complications were encountered more in the laparoscopic group (16.07%) as compared to the abdominal hysterectomy group (12.5%). The results were statistically non-significant. (P-value=0.30).

Post-operative complications were seen less after laparoscopic hysterectomy (17.85%) than after total abdominal hysterectomy group (41.07%). The results were statistically insignificant (p-value= 0.24).

In a study done by Satasanasuang et al¹² the overall intraoperative complication was 30% (18 cases). In the TLH group 43.33% (13 cases) and 16.67% (5 cases) in the abdominal group were reported. There was a significant difference in the intraoperative complications which was contrary to the present study. The postoperative complication showed no significant difference between both the groups. This associated well with our study.

Intraoperative Complication

1) Haemorrhage

Authors	Haemorrhage	
	Laparoscopic Hysterectomy- No. of Patients (%)	Abdominal Hysterectomy- No. of Patients (%)
Patel Ekta et al ¹⁴	0 (0%)	2 (6.66%)
Present Study	3(5.36%)	6 (10.71%)

Table 15. Haemorrhage in both Groups in Our Study and Different Other Studies

In the present study 3 patients (5.36%) in laparoscopic hysterectomy group had persistent bleeding intraoperatively due to slipping of uterine artery ligature and 6 patients (10.71%) during abdominal hysterectomy had haemorrhage due to continuous bleeding from the vault area. These patients required blood transfusion postoperatively.

Patel Ekta et al¹⁴ in her study reported 2 case (6.66%) of haemorrhage in abdominal hysterectomy.

2) Conversion

In the present study none of the patient in the laparoscopic group got converted into laparotomy.

The cases which were previously included in the study were excluded if they got converted to laparotomy.

Two cases needed conversion from laparoscopic hysterectomy to laparotomy in study done by Mohomad Fathy et al²¹ where as in study done by Kanmani et al⁸ one case got converted to laparotomy during laparoscopic hysterectomy due to dense bowel adhesions to the posterior surface of the uterus.

3) Bladder Injury

Authors	Bladder Injury	
	Laparoscopic Hysterectomy- No. of Patients (%)	Abdominal Hysterectomy- No. of Patients (%)
Patel Ekta et al ¹⁴	1 (3.33%)	0(0%)
Ajay Wakhloo et al ¹⁷	2 (4%)	0 (0%)
Mohomad fathy et al ²¹	1 (4%)	1 (%)
Kanmani et al ⁸	1 (1.8%)	0 (0%)
Present study	0(0%)	0 (0%)

Table 16. Bladder Injury in both Groups in Our Study and Different Other Studies

In the present study, no bladder injury was reported in both laparoscopic and total abdominal hysterectomy.

In the study done by Ajay Wakhloo et al¹⁷ it was reported that 2 patients (4%) during laparoscopic had bladder injury and no bladder injury reported during total abdominal hysterectomy. In studies done by Patel Ekta et al,¹⁴ Kanmani et al⁸ and Mohomad Fathy et al²¹ one case of bladder injury was reported in the laparoscopic hysterectomy group.

Johnson et al²² in a meta-analysis reported that the rate of urinary complication was higher with laparoscopy.

4) Ureteric and Bowel Injury

In the present study no ureteric or bowel injury was reported during laparoscopic or total abdominal hysterectomy.

Post-operative Complication

1) Blood Transfusion

In the present study 6 patients (10.71%) after abdominal hysterectomy and 3 patients (5.36%) after laparoscopic hysterectomy were given blood transfusion due to haemorrhage intraoperatively and had drastic fall in haemoglobin post operatively.

In a study done by Patel Ekta et al¹⁴ requirement of more blood transfusion was reported after total abdominal hysterectomy than laparoscopic hysterectomy and also stated that increase in blood transfusion increases the chances of transfusion related complication.

2) Fever

In the present study 2 patients (3.57%) in laparoscopic hysterectomy group and 5 patients (8.93%) after abdominal hysterectomy had fever episode postoperatively as the manual handling is more in this group.

Ajay Wakhloo et al¹⁷ (n=100) in their study reported 4 patients (8%) with fever after abdominal hysterectomy and Cem Celik et al¹³ (n=77) reported only 1 patient (3.3%) with fever after abdominal hysterectomy post operatively in their study.

Osman Balci et al¹¹ (n=80) in their study reported fever in 1 patient (2.5%) in abdominal hysterectomy group and 2 patients (5%) after laparoscopic hysterectomy.

3) Paralytic Ileus

In the present study no cases reported with paralytic ileus in the laparoscopic group but 2 patients (3.57%) after abdominal hysterectomy had abdominal distension with paralytic ileus due to excessive bowel handling and were managed with continuation of nasogastric decompression and correction of electrolytes

Patel Ekta et al¹⁴ in her study reported 1 case (3.33%) of paralytic ileus post abdominal hysterectomy. This correlated well with the present study.

4) Wound Infection

Authors	Wound Infection/Port Site Infection	
	Laparoscopic Hysterectomy (%)	Abdominal Hysterectomy (%)
Ajay Wakhloo et al ¹⁷	0%	20%
Anand Murari Nanavati et al ¹⁹	0%	12%
Present study	0 (0%)	12.50%

Table 17. Wound Infection/Port Site Infection in both Groups in Our Study and Other Studies

In the present study no port site infection was reported in the laparoscopic group but wound infection was encountered in the total abdominal hysterectomy group in 7 cases (12.50%), requiring regular dressing of the wounds and broad-spectrum injectable antibiotics were given according to culture sensitivity report. Wound healed over a period of 5-10 days.

Anand Murari Nanavati et al¹⁹ reported 12.50% cases of wound infection in the abdominal hysterectomy. The findings were comparable to the present study.

Similar results of wound infection with more cases in abdominal hysterectomy than in laparoscopic hysterectomy were reported by Ajay Wakhloo et al.¹⁷

5) Resuturing

In the present study after abdominal hysterectomy, 3 patients underwent resuturing as they had wound gaping. After treating with injectable antibiotics, they were taken for resuturing as soon as the fresh granulation tissue developed. 3 patients out of the 7 who had wound infection underwent resuturing in the abdominal hysterectomy group.

Post-Operative Hospital Stay

Authors	Place of Study	Mean Post-operative Hospital Stay (Days)	
		Laparoscopic Hysterectomy	Abdominal Hysterectomy
Kanmani M et al ⁸	India	4.63±1.2	6.5±2.2
Shrestha et al ²⁰	China	7.6±1.9	10.1±2.1
Present Study	India	4.62 ± 0.61	8.71±1.64

Table 18. Postoperative Hospital Stay in both Groups in Our Study and Other Studies

In the present study, the mean post-operative hospital stay in laparoscopic hysterectomy (4.62±0.61) shorter than in abdominal hysterectomy (8.71±1.64). The difference was statistically significant (p-value =0.0001).

Similar observations were found in studies done by various other authors mentioned in table.

Patients in laparoscopic hysterectomy group in the present study were discharged earlier as compared to those in abdominal hysterectomy group because of early mobilization, less post-operative pain and fewer wound complications.

In the present study mean postoperative hospital stay after laparoscopic hysterectomy (4.62±0.61) was comparable with mean postoperative hospital in studies done by authors like Ajay Wakhloo et al¹⁷ (4.63±1.2), Kanmani M et al⁸ (4.63±1.2).

One patient out of the abdominal hysterectomy had prolonged hospital stay of 16 days as secondary suturing was required.

Total 8 patients in the abdominal hysterectomy had prolonged hospital stay because of wound infections requiring daily dressing and broad-spectrum injectable antibiotics.

CONCLUSION

The present study entitled "Comparative study of Laparoscopic hysterectomy with Total abdominal hysterectomy" carried out in the Department of Obstetrics and Gynecology at AVBRH, Sawangi (Meghe) was done keeping in mind 5 main objectives which were concluded with the following results:

- The drop in hemoglobin level of the patient was less in laparoscopic hysterectomy as compared to total abdominal hysterectomy.
- The total duration of surgery was more in laparoscopic hysterectomy when compared with total abdominal hysterectomy.
- The post-operative pain score after laparoscopic hysterectomy was less than total abdominal hysterectomy.
- The duration of hospital stay was less in patients who underwent laparoscopic hysterectomy in comparison to patients who underwent total abdominal hysterectomy.

- The intraoperative and postoperative complications were fewer in laparoscopic hysterectomy when compared with total abdominal hysterectomy.

Hence, the advantages of laparoscopic hysterectomy are more than total abdominal hysterectomy as per the observations in the present study and thus, it can be preferred as the future mode of surgery.

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