

# A study of peri and postoperative outcome of abdominal and vaginal hysterectomy

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## Abstract

**Introduction:** Hysterectomy can be performed by various routes including abdominal, vaginal and Laproscopic or combined. Abdominal route remains the predominant method of uterine removal and is used for bulky uteri, Malignancies or when there are adhesions and when the removal is not possible through vaginal route. Vaginal Hysterectomy was initially performed for uterine prolapse but now the indications are increasing. **Material and Methods:** prospective observational study over a period of 2 years. All the patients who underwent hysterectomies were followed from the time of admission to discharge and on follow up. Patients who underwent LAVH and TLH and patients with invasive malignancy and endometriosis were excluded from the study. **Results:** Most common indication for abdominal hysterectomy was fibroid uterus (61.4%) followed by DUB (25.71%), adenomyosis (5.11%). Least common indications were benign ovarian tumour (2.85%) endometrial hyperplasia (2.85%). Uterovaginal prolapsed (77.14%) was the most common indication for vaginal hysterectomy followed by DUB (12.8%) and adenomyosis (8.51%). Excessive intra operative blood loss was seen in 12 patients of abdominal hysterectomy and 8 patients of vaginal hysterectomy. Intraoperative small bowel injury was seen in 1 and bladder injury in 2 patients of abdominal hysterectomy. Most common post operative complication after AH was fever (11.4%). Wound infection was seen in 7 patients. 1 patient had pelvic abscess and 11 patients required post operative blood transfusions. Among patients who underwent VH, most common post operative complication was UTI. Fever was seen in 5 patients and only 2 patients had wound infection. On follow up only 3 patients of AH had chronic pelvic pain and 2 had incisional hernia while in patients who underwent VH, post operative recovery, mobilisation and recovery to routine work was earlier and except for one patient who had sexual dysfunction all patients were comfortable on successive follow up visits. **Conclusion:** The choice of hysterectomy procedure should be as per the indication. Vaginal hysterectomy is the procedure of choice as it involves minimal operative time, minimal tissue trauma, minimal blood loss, minimal infection rate and associated complications and faster recovery. However, for certain conditions abdominal hysterectomy is the procedure of choice. **Keywords:** Abdominal hysterectomy, vaginal hysterectomy, fibroid uterus. **Abbreviations:** AH- Abdominal hysterectomy, VH- Vaginal hysterectomy.

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## INTRODUCTION

Hysterectomy which is surgical removal of uterus is currently one of the most commonly performed gynaecological surgical procedures<sup>1</sup>. Hysterectomy can be performed by various routes including abdominal, vaginal and Laproscopic or combined. The first abdominal Hysterectomy was performed by Charles clay in Manchester in 1843 and the first vaginal Hysterectomy by soranus of Ephesus in 120AD. Now Hysterectomy is second to caesarean delivery as the most frequently performed major surgical procedure for women of reproductive age group. Approximately, 1 in 3 women is

Hysterectomized by the age of 60 Years and Approximately 6,00,000 Hysterectomies are performed annually in united states alone <sup>2</sup>. 64% of these Hysterectomies were done through abdominal route and 35.5% were done by transvaginal route. 9 out of 10 Hysterectomies are performed for non-malignant diseases. Common indications for Hysterectomies are leiomyomas, endometriosis, pelvic relaxation, chronic Pelvic inflammatory disease endometrial Hyperplasia, DUB, Cervical intraepithelial neoplasia (or) invasive disease. Abdominal route remains the predominant method of uterine removal and is used for bulky uteri, Malignancies or when there are adhesions and when the removal is not possible through vaginal route. Vaginal Hysterectomy was initially performed for uterine prolapse but now the indications are increasing. Vaginal Hysterectomy is accepted as less invasive than abdominal route for patients of advanced age and small size uterus and the procedure has some advantages over abdominal route including lesser complications, shorter hospital stay and faster recovery. The selection of cases for VH or AH depends upon many clinical variables singly or in combinations. These include pelvic anatomy, uterine size, adnexal disease, gastrointestinal complaints, urological disorders (cystocele), heart or lung disease, body mass index, parity, previous cesarean delivery<sup>3</sup>. Minor complications like fever, wound infection occur in 25% patients while, major complications including injury to bowel, bladder or ureter occurs in 5-14% patients<sup>4</sup>. The most serious intraoperative complication is haemorrhage which is seen in 0.2 to 2% of cases<sup>5</sup>. About 10% patients are expected to have post operative febrile morbidity and infections<sup>6</sup>. Bladder injury may be present in 2.9% of all hysterectomies while ureteral injury occurs in 0.7-1.8% of abdominal hysterectomies and 0-0.1% of vaginal hysterectomies<sup>7</sup>. Bowel injury is uncommon in vaginal hysterectomy. The overall mortality rate of abdominal

and vaginal hysterectomies are 0.1 and 0.2% respectively<sup>8</sup>. This study was undertaken to study the perioperative and post operative complications of abdominal and vaginal hysterectomies and to evaluate the outcome of both types of hysterectomies.

## MATERIAL AND METHODS

This is a prospective observational study done at MNR MEDICAL COLLEGE AND HOSPITAL, SANGAREDDY over a period of 2 years from June 2012 to June 2014 in the department of obstetrics and gynaecology. All the patients who underwent hysterectomies were followed from the time of admission to discharge and on follow up. Detailed history, General physical and medical examination was carried out for all patients. Informed written consent was taken by explaining the procedures and their complications. All hysterectomies were performed by consultants. Patients were observed for age, risk factors, indications, operative time, intra operative complications like bladder and bowel injury, primary haemorrhage, immediate and late post operative complications and on follow up for any problem.

### Exclusion Criteria

Patients who underwent LAVH and TLH were excluded from the study. Patients with invasive malignancy, endometriosis were also excluded from the study.

## RESULTS

Total number of hysterectomies performed during the study period of 2 years is 140. Out of this, 70 patients underwent abdominal hysterectomy and 70 women underwent vaginal hysterectomy. In these patients, we studied age, parity, operative time, intra operative blood loss, intra operative and post operative complications.

Table 1: Age distribution

Age	Abdominal	Percentage	Vaginal	Percentage
<35	1	1.4%	0	0
35-40	7	10%	8	11.4%
41-45	22	31.4%	9	12.8%
46-50	29	41.4%	12	17.1%
51-55	3	4.2%	13	18.5%
56-60	3	4.2%	12	17.1%
61-65	3	4.2%	9	12.8%
>65	2	2.85%	7	10%

Table 1 shows age distribution according to which 41.4% of the patients who underwent AH were between 46-50 years age group. While majority patients who underwent VH were elderly between 46-60 years. Majority of

abdominal hysterectomy patients were 2<sup>nd</sup> and 3<sup>rd</sup> para while most of the patients who underwent VH were grand multipara.

**Table 2: Indications of hysterectomy**

Indications	Abdominal	Percentage	Vaginal	Percentage	Total
Fibroid Uterus	43	61.4%	1	1.42%	44
DUB	18	25.7%	9	12.8%	27
Benign ovarian tumour	2	2.85%	0	0	2
Adenomyosis	4	5.11%	6	8.51%	10
UV prolapsed	0	0	54	77.14%	54
CIN	1	1.4%	0	0	1
Endometrial hyperplasia	2	2.85%	0	0	2

Table 2 Shows different indications for abdominal and vaginal hysterectomies. In our study of 140 cases, 70 patients underwent abdominal hysterectomy and 70 patients underwent vaginal hysterectomy. Most common indication for abdominal hysterectomy in our study out of 70 cases was fibroid uterus (61.4%) followed by DUB (25.71%), adenomyosis (5.11%). Least common

indications were benign ovarian tumour (2.85%) endometrial hyperplasia (2.85%) and CIN (1.4%) in perimenopausal women. Out of 70 cases of vaginal hysterectomy, Uterovaginal prolapse (77.14%) was the most common indication followed by DUB (12.8%) and adenomyosis (8.51%).

**Table 3: Intra operative complications**

Complications	Abdominal	Percentage	Vaginal	Percentage
Bleeding	12	17.14%	8	11.42%
Bladder injury	2	2.8%	0	0
Small bowel injury	1	1.4%	0	0
Ureter injury	0	0	0	0

Approximate intra operative blood loss in Abdominal hysterectomy was 150-200 ml while that in vaginal hysterectomy was 100-150 ml. Average operative time for Abdominal Hysterectomy was 60-90 minutes while that for Vaginal Hysterectomy was 45-80 minutes. Tale 3 shows excessive intra operative blood loss was seen in 12 patients of abdominal hysterectomy. Approximate blood loss in these patients was 300-400 ml. In 8 out of 70

patients who underwent VH. Intra operative blood loss was more than average is 300 ml. intra operative small bowel injury was seen in 1 patient of abdominal hysterectomy. While bladder injury was seen in 2 patients of AH which were repaired intra operatively with the help of surgeons. None of the patients had ureteric injury. As compared to AH, intra operative complications were found to be less in vaginal hysterectomy.

**Table 4: Immediate post operative complications**

Complication	Abdominal	Percentage	Vaginal	Percentage
UTI	4	5.7%	7	10%
Wound infection	7	10%	2	4.28%
2 <sup>o</sup> Haemorrhage	0	0	1	1.42%
Fever	8	11.4%	5	7.14%
Pelvic abscess	2	2.85%	0	0
No. of patients requiring blood transfusion	11	15.71%	7	10%

Most common post operative complication after AH was fever (which was seen in 11.4%). Wound infection was seen in 7 out of 70 patients of AH. Post operatively UTI was found in 4 patients while 1 patient had pelvic abscess. These patients were managed conservatively with the use of higher antibiotics. 11 patients who underwent AH, required post operative blood transfusions because of excessive intra operative blood loss. Among

patients who underwent VH, most common post operative complication was UTI. Fever was seen in 5 patients and only 2 patients had wound infection which was treated with prolonged antibiotic course and local betadine pessaries. One of the serious complication of hysterectomy is secondary haemorrhage which was seen in 1 patient of VH. In this patient laparotomy was performed and bleeding was controlled.

**Table 5: Late complications**

Complications	Abdominal	Percentage	Vaginal	Percentage
Chronic pelvic pain	3	4.28%	0	0
Incisional Hernia	2	2.85%	0	0
Sexual dysfunction	0	0	1	1.42%
VVF	0	0	0	0

When all these women were followed up post operatively, only 3 patients of AH had chronic pelvic pain which was managed conservatively and 2 patients had incisional hernia which was managed surgically with the help of surgeons while in patients who underwent VH, post operative recovery, mobilisation and recovery to routine work was earlier and except for one patient who had sexual dysfunction all patients were comfortable on successive follow up visits.

## DISCUSSION

Hysterectomy is one of the most common operation that a women will undergo with an expected lifetime prevalence of 10%<sup>9</sup>. Previously vaginal hysterectomy was done mainly for uterovaginal prolapse cases, but now a days vaginal route of hysterectomy is being preferred as it is safe and effective procedure even for benign non prolapsed uterine conditions<sup>10</sup>. In the present study, we evaluated patients who underwent either abdominal or vaginal hysterectomy with respect to their age, operative time, intra op blood loss and other complications and post operative complications. Most of the patients who underwent AH were between 46 to 50 years while those who underwent VH were elderly and between 46 to 60 years. In the study by Iklaki *et al*, mean ages for abdominal and vaginal hysterectomies were 49.5 +/- 12.3 years and 61.1 +/- 8.2 years respectively<sup>11</sup>. Older women tend to undergo VH when the pelvic supports are weak and it is easier to have access to the uterus through vaginal route. Majority of AH patients in our study were 2<sup>nd</sup> and 3<sup>rd</sup> para while most of the patients who underwent VH were elderly and multipara(para 5 and 6) In the study by Iklaki *et al*, mean parity was 5.3 +/- 3. This could be explained by contribution of high parity to the causes of uterovaginal prolapse<sup>11</sup>. Most common indication of AH in our study was uterine fibroid while that for VH was uterovaginal prolapse. Similar results were seen in Ikram *et al* study<sup>12</sup>. In the study by Alkadri *et al*<sup>13</sup> also most common indication for VH was uterine prolapse 81%, which occurs in women >45 years while most common indication for TAH were DUB and uterine fibroids 56% which occurs in women <45 years. In the study by saima *et al*<sup>14</sup>, major indication for VH was UV prolapse. In the present study, approximate intra operative blood loss during AH was 150-200 ml while that in VH was 100-150 ml. Average operative time for AH in the present study was 90-100 minutes while that for VH was 60-80 minutes. Similarly in the study by Kayastha *et al*<sup>15</sup>, mean duration of surgery of AH was 96.8 minutes and that of VH was 89 minutes. Mean blood loss in AH surgery in the study by Kayastha *et al*, was 311 ml and that in VH was 244 ml<sup>15</sup>. In the study by Bing chen *et al*, compared

with AH, VH was associated with shorter mean operative time (VH 65.2 +/- 10.6 minutes, AH 95.6 +/- 15.9 minutes) and less mean intra operative blood loss (VH 30.4 +/- 10.5, AH 70.3 +/- 18.6ml).<sup>16</sup> In the present study, we found that VH was associated with less intra operative complications and post operative complications and morbidity compared to AH. In the present study, small bowel injury was seen in 1 patient of AH while bladder injury was found in 2 patients of AH. All these cases were managed successfully with the help of surgeons. In the study by siama *et al*, bladder injury was seen in 1.08% patients<sup>14</sup>. In a study by Ikram *et al*, incidence of bladder injury was 1.1%.<sup>12</sup> In the study by Zaiba *et al*, bladder injury was found in 5 patients<sup>17</sup>, while there was no bowel injury in this study. None of the patients had ureteric injury. As compared to AH, intra operative complications were less in patients who underwent VH. Also VH had another advantage of speedier recovery to normal in post operative period with less post operative complications. In our study most common post operative complications in AH was fever which was seen in 11.4% cases. Wound infection was seen in 7 out of 70 patients of AH. Post operative UTI was found in 4 patients while 2 patients had pelvic abscess these 2 cases were managed conservatively with broad spectrum antibiotics. Among patients who underwent VH most common post operative complications were UTI. Fever was seen in 5 patients. In the study by Robert *et al*, the rate of post operative infection or fever after AH (4%) was significantly higher than after VH.(0.8%).<sup>18</sup> In the study by kayastha *et al*, post operative febrile morbidity was seen in 10 (20%) cases of AH and 6 (12%) of VH. Wound infection was the main cause for febrile morbidity in AH group where as UTI was the main cause of febrile morbidity in VH.<sup>15</sup> Similarly in the study by Al kadri *et al*, febrile morbidity formed the major category of post operative complication.<sup>13</sup> One of the patient of VH in our study had secondary haemorrhage which was managed successfully by doing laparotomy and controlling haemorrhage. In the study by Zabra *et al*, 4 patients of Abdominal hysterectomy had secondary haemorrhage<sup>17</sup> while in the study siama *et al*, incidence of secondary haemorrhage was 0.63%.<sup>14</sup> No mortality was found in our study. On follow up, in our study only 3 patients of Abdominal hysterectomy had chronic pelvic pain and 2 had incisional hernia while patients who underwent VH had no long term complications except in 1 patient who had sexual dysfunction. In the study by Ikram *et al*, AH was associated with more complications than Vaginal hysterectomy<sup>12</sup>. In the study by Nasira *et al*<sup>19</sup>, risk of peri operative or short term and long term complications were

low in Vaginal hysterectomy than Abdominal hysterectomy.

## CONCLUSION

This study shows that the choice of hysterectomy procedure should be as per the indication. Out of both the procedures adopted for removal of the uterus, vaginal hysterectomy is the choicest procedure as it involves minimal operative time, minimal tissue trauma, minimal blood loss, minimal infection rate and associated complications and faster recovery. However, for certain conditions such as leiomyoma of uterus of more than 12 weeks of size, pelvic inflammatory disease, TuboOvaria mass, endometriosis and associated ovarian pathology abdominal hysterectomy is the procedure of choice.

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