

Comparative Study of Non-descent Vaginal Hysterectomy versus Total Abdominal Hysterectomy: Outcomes and Clinical Considerations

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Abstract

Background: Hysterectomy is one of the most common gynaecological surgeries performed worldwide. It can be performed by the abdominal, vaginal, and laparoscopic route. The present study was aimed to compare non-descent vaginal hysterectomy and abdominal hysterectomy and their outcome.

Method: A total 100 cases of uterine size ≤ 12 weeks admitted to the Gynaecology unit requiring hysterectomy for benign diseases were randomly selected out of which 50 cases underwent vaginal hysterectomy for non-descent uterus and 50 cases underwent abdominal hysterectomy for the same indications during the study period between January 2023 to September 2023.

Results: Majority of the patients came to the hospital with complain of excessive bleeding and majority belonged to 41-50 years of age. The most common indication in both the group was AUB (54%), followed by fibroid uterus (24%). Maximum (87%) patients were delivered vaginally. Mean duration of surgery in vaginal group was lower (57.6 min) than the abdominal group (75.2 min). Patients of vaginal group ambulated earlier than the abdominal group. Total 18% of cases were given blood transfusion pre, intra, or post operatively. Rate of intra and post operative complication was higher in abdominal group as compared to vaginal group. Mean postoperative stay in the vaginal group was 5.1 day and abdominal group was 6.1 days. There was no case of mortality in this study.

Conclusion: Vaginal hysterectomy is the least invasive, fast, and least complicated surgery, which can result in early ambulation and the briefest hospital stay at the lowest possible expense when compared to abdominal hysterectomy.

Keywords: Vaginal hysterectomy; Total abdominal hysterectomy; non-descent uterus; DUB; Complications

Introduction

Hysterectomy is one of the most common gynaecological surgeries performed worldwide [1]. The rate of hysterectomy has varied between 6.1 and 8.6 /1000 women of all ages [2]. Today, there are many different approaches to hysterectomy, and it can be done through abdominal, vaginal, and laparoscopic routes [3]. When choosing the route and method of hysterectomy, the physician should take into consideration how the procedure may be performed most safely and cost-effectively to fulfil the medical needs of the patient. Most literature supports the opinion that, when feasible, vaginal hysterectomy is the safest and most cost-effective route to remove the uterus [4]. Approach also depends on surgeon's preference, indication for surgery, nature of disease, and patient characteristics. The gynaecologist should not only technically adapt these various procedures but also use history, physical examination, and discussion with the patient to match the surgical procedure to the patient in order to obtain the most satisfactory outcome [5].

However, hysterectomy is largely performed for benign condition such as AUB, fibroid, adenomyosis, chronic pelvic pain, endometriosis, and others in order to improve patient's quality of life. It is advised when medical treatment or other modalities of treatment fail. The current ratio of abdominal to vaginal hysterectomy is 3:1 for the treatment of benign disorders. The ratio should be reversed because fewer post operative complications are associated with the vaginal route, which allows earlier recovery and return to work [6].

When hysterectomy is to be undertaken, every gynaecologist should first consider the vaginal hysterectomy because it is easy to approach, and the uterus is accessible and therefore comfortable from the surgeon's viewpoint [7]. The present study was aimed to compare non-descent vaginal hysterectomy and abdominal hysterectomy and their outcome.

Aim

This study was aimed to compare non descent Vaginal hysterectomy and Abdominal hysterectomy and their outcome

Objectives

- To compare the indications and diagnosis for both the type of surgeries.

- To compare Vaginal and abdominal hysterectomy in terms of morbidity and blood loss.
- To compare the intraoperative and postoperative complications following vaginal and abdominal hysterectomy.
- To compare vaginal and total abdominal hysterectomy in term of post operative hospital stays.

Materials and Methods

A total 100 cases of uterine size ≤ 12 weeks admitted to the Gynaecology unit requiring hysterectomy for benign diseases were randomly selected out of which 50 cases underwent vaginal hysterectomy for non-descent uterus and 50 cases underwent abdominal hysterectomy for the same indications during the study period between January 2023 to September 2023. Patients with prolapse uterus, sling operations done before for prolapse uterus, laparoscopic assisted vaginal hysterectomy, adnexal pathology >5 cm and patients with gynaecological malignant disorder were excluded from the study.

Selected cases were divided into two group of 50 patients in each group depending on route of hysterectomy performed: Group 1: abdominal hysterectomy (AH) and Group 2: vaginal hysterectomy (VH). Ultrasonography and Pap smear were done in all case and D & C was done in required cases to rule out other pathology and malignancy. All cases were investigated thoroughly for their cardiorespiratory status and fitness for surgery and other medical condition. Every patient was completely evaluated by an anaesthesiologist before deciding the type of anaesthesia. All patients were operated under spinal, or epidural or general anaesthesia as decided by the anaesthetist in individual cases. All cases were observed vigilantly preoperatively, intra operatively and post operatively for one week, after one month and after 6 months for any complications. Adequate postoperative care was given.

Standard methods for vaginal and abdominal hysterectomy given in "Te Linde's operative gynaecology, 12th edition^[8]" were followed. Operating time for vaginal hysterectomy was calculated from incision at cervicovaginal junction to the completion of closure of vault. Operating time for abdominal hysterectomy was calculated from incision on the abdomen to closure of skin incision. Intra operative complications like adhesions, injury to bladder and bowel and haemorrhage were noted. Foley's catheterization of bladder and placement of vaginal pack were done according to the surgeon's choice. Analgesics used during the immediate post operative period to make the patients pain free were noted. The time taken for the patient to ambulate voluntarily was noted. All patients were advised to ambulate early. Post operatively patients were noted for complications like fever, pain, bladder and bowel disturbances, bleeding and the abdominal wound was inspected in those patients who had undergone abdominal hysterectomy. Postoperative hospital stay was recorded in whole days.

Statistical Analysis

The data were collected and entered in Microsoft Excel sheet and then statistically analysed using SPSS Version 20.0. Continuous variables were expressed as mean $\pm$ SD and categorical variables were summarized as frequencies and percentages. To know the association between dependent and independent variables chi-square was applied accordingly, p value less than 0.05 was considered as statistically significant.

Observations and Results

Majority of the patients came to the hospital with complain of excessive bleeding and majority belonged to 41-50 years of age. Mean age of abdominal hysterectomy and vaginal hysterectomy were 42.9 and 42.6 years respectively. Most of the patients who underwent hysterectomy were multiparous and mean parity in both the group was 3. Anemia (27.0%) was the most common medical condition associated in this study, (Table 1).

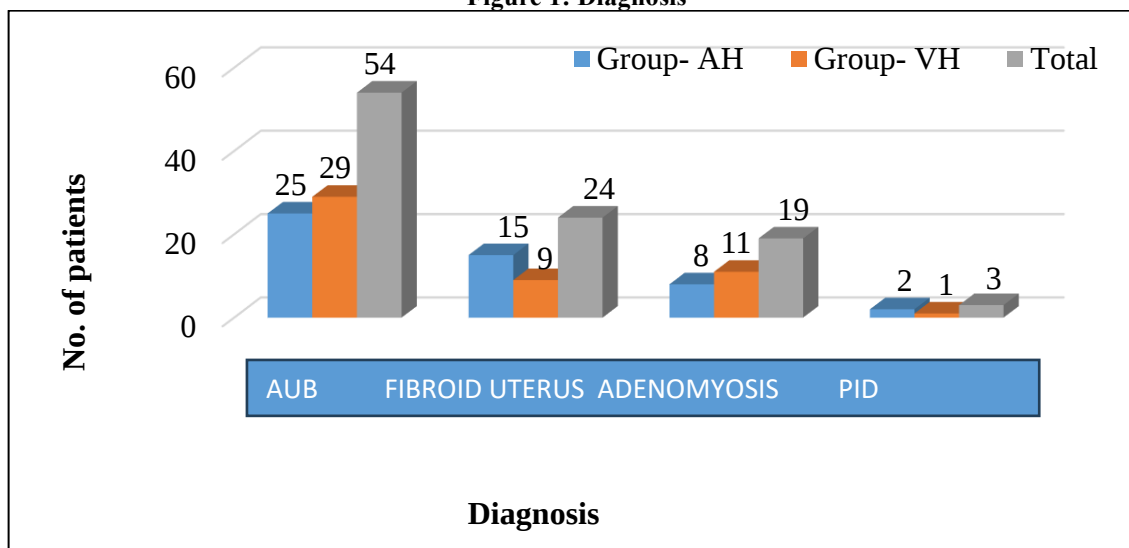
Table 1: Demographic and obstetrics characteristics of patients

Parameters		AH (%)	VH (%)	Total
Age in years	<30	01 (2.0%)	00 (0.0%)	01 (1.0%)
	30-40	17 (34.0%)	23 (46.0%)	40 (40.0%)
	41-50	29 (58.0%)	25 (50.0%)	54 (54.0%)
	51-60	02 (4.0%)	02 (4.0%)	04 (4.0%)
	>60	01 (2.0%)	00 (0.0%)	01 (1.0%)
Parity	0	01 (2.0%)	00 (0.0%)	01 (1.0%)
	1	01 (2.0%)	01 (2.0%)	02 (2.0%)
	2	15 (30.0%)	12 (24.0%)	27 (27.0%)
	3	19 (38.0%)	20 (40.0%)	39 (39.0%)
	4	10 (20.0%)	14 (28.0%)	24 (24.0%)
	5	02 (4.0%)	02 (4.0%)	04 (4.0%)
	6	02 (4.0%)	01 (2.0%)	03 (3.0%)
History of medical illness	Anemia	16 (26.0%)	11 (22.0%)	27 (27.0%)
	Hypertension	03 (6.0%)	03 (6.0%)	06 (6.0%)
	Diabetes	02 (4.0%)	01 (1.0%)	03 (3.0%)
	Hypothyroidism	02 (4.0%)	02 (4.0%)	04 (4.0%)

	Asthma	00 (0.0%)	00 (0.0%)	00 (0.0%)
	Tuberculosis	00 (0.0%)	01 (2.0%)	01 (1.0%)
	No medical illness	27 (54.0%)	32 (64.0%)	59 (59.0%)

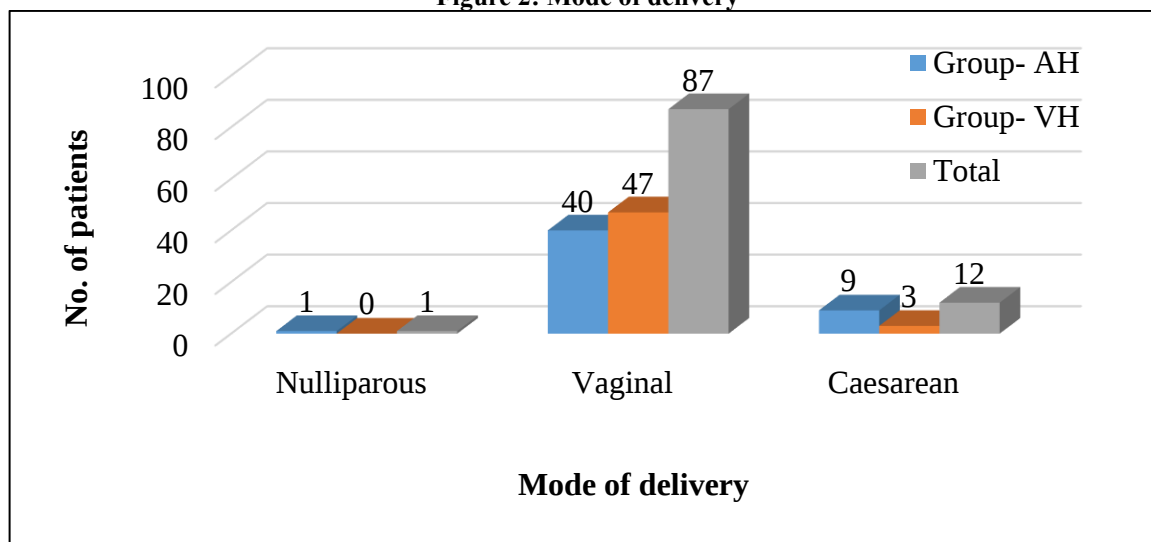
The most common indication in both the group was abnormal uterine bleeding (AUB) followed by fibroid uterus, adenomyosis and PID as depicted in figure 1.

Figure 1: Diagnosis



Maximum i.e., 87% of the patients were delivered vaginally and 12% patient has previous caesarean delivery and operated without any major complication which was statistically significant with p value of 0.0054, (Figure 2). Selected cases of previous CS were successfully operated vaginally without any major complication.

Figure 2: Mode of delivery



Overall, 94% of the patients operated under spinal anaesthesia with less anaesthesia related complication. Epidural anaesthesia was given more in the abdominal group, with all cases, in which adhesions were suspected. Majority of patients in both the groups had 45 to 90 min for surgery. Mean duration of surgery in vaginal group (57.6 min) was lower than the abdominal group (75.2 min) which was statistically significant ($p=0.0001$), (Table 2). Patients of vaginal group ambulated earlier than the abdominal group.

Total 18% of cases were given blood transfusion pre (12.0%), intra (2.0%), or post operatively (4.0%) to reduce intraoperative and post operative morbidity and mortality in required cases. Out of 18 cases, in AH group 10 cases were given blood transfusion and in VH group 8 cases were given blood transfusion.

Table 2: Type of anaesthesia and duration of surgery

Parameters		AH (%)	VH (%)	Total (%)
Type of Anaesthesia	Spinal	46 (92.0%)	48 (96.0%)	94 (94.0%)
	Spinal+epidural	02 (4.0%)	01 (1.0%)	03 (3.0%)
	Spinal+GA	01(2.0%)	00 (0.0%)	01(1.0%)
	General	01 (1.0%)	01 (2.0%)	02 (2.0%)
Duration in minutes	<45	01 (2.0%)	16 (32.0%)	17 (17.0%)
	45-90	45 (90.0%)	30 (60.0%)	75 (75.0%)
	91-120	03 (6.0%)	03 (6.0%)	06 (6.0%)
	> 120	01 (2.0%)	01 (2.0%)	02 (2.0%)

Rate of intra and post operative complication was high in abdominal group as compared to vaginal group. The most common anaesthetic complication was spinal headache in this study, (Table 3).

Table 3: Intra and postoperative complications

Complications		AH (%)	VH (%)	Total
Intraoperative complications	Haemorrhage	01 (2.0%)	01 (2.0%)	02 (2.0%)
	Bladder injury	01 (2.0%)	01 (2.0%)	02 (2.0%)
	Bowel injury	00 (0.0%)	00 (0.0%)	00 (0.0%)
	Ureteric injury	00 (0.0%)	00 (0.0%)	00 (0.0%)
Post-operative complication	Vaginal bleeding	01(2.0%)	01 (2.0%)	02 (2.0%)
	Fever	03 (6.0%)	02 (4.0%)	05 (5.0%)
	UTI	01 (2.0%)	00 (0.0%)	01 (1.0%)
	Vault hematoma	01 (2.0%)	00 (0.0%)	01 (1.0%)
	Wound infection	02 (4.0%)	00 (0.0%)	02 (2.0%)
Anaesthesia Related Complications	Spinal headache	05 (10.0%)	03 (6.0%)	08 (8.0%)
	Nausea and Vomiting	04 (8.0%)	01 (2.0%)	05 (5.0%)

Majority of the patients in the vaginal group ambulated within 24 hours while patients in the abdominal group ambulated in >24 hrs, which could probably be due to the discomfort/pain of the abdominal wound. Most of the patients discharged between 4-6 days post operatively. Mean post operative stay in the vaginal group was 5.1 days and in the abdominal group, was 6.1 days. Overall post operative hospital stay was 5.6 days, (Table 4).

There was no case of mortality in this study showing that hysterectomy was a safe procedure nowadays with minimal complications.

Table 4: Ambulation and post operative hospital stay.

Variables		AH (%)	VH (%)	Total
Ambulation	<12	00 (0.0%)	08 (16.0%)	08 (8.0%)
	12-24	09 (18.0%)	27 (54.0%)	36 (36.0%)
	>24	41 (82.0%)	15 (30.0%)	56 (56.0%)
Post operative hospital stays (days)	3	01 (2.0%)	04 (8.0%)	05 (5.0%)
	4-6	38 (76.0%)	41 (82.0%)	79 (79.0%)
	7-10	10 (20.0%)	04 (8.0%)	14 (14.0%)
	>10	01 (2.0%)	01(2.0%)	02 (2.0%)

Discussion

In the present study, the mean age in vaginal group was 42.6 years, ranged from 30 to 58 years and mean age in abdominal group was 42.9 years, ranged from 18 to 64 years which is comparable with the different studies ^[8-10].

There is no nulliparous patient in the VH group and on the other side, one in the AH group. Nulliparity is not a contraindication for VH. According to one study VH was successfully performed in 96.2% of the nulliparous patients ^[11]

The most common associated condition found in cases of hysterectomy was anaemia. Almost 27% of cases had this condition probably due to increased menstrual blood loss associated with abnormal uterine bleeding. In cases with severe anaemia blood transfusion were given whereas mild and moderate cases were managed by oral or injectable iron and hormonal therapy.

The abnormal uterine bleeding (AUB) was the most common indication of surgery in both the group which is comparable with study done by Bharatnur S et al ^[12] and Gayak K et al ^[13] whereas in the Dewan R et al ^[14] and Garg P et al ^[15] studies fibroid uterus is the most common indication. In most of the possible cases of AUB medical management and D&C was

performed as first line of management and after failure of that hysterectomy was performed. In one intellectual disabled patient AH was performed for complain of menorrhagia and request from legal guardian. It was included in AUB as no definite aetiology traced. Fibroid uterus was the 2nd most common indication of abdominal hysterectomy. In patients with somewhat larger size of fibroid AH was performed as it is difficult in VH to manage distorted anatomy and large sized uterus. Majority of patients were of the peri-menopausal age group and menstrual irregularities were common in them which lead to the common presenting complaint of heavy menses.

There was one case of a nulliparous patient who underwent abdominal hysterectomy and six cases with previous caesarean delivery underwent vaginal hysterectomy without any major complication. The average duration of vaginal hysterectomy was 57.6 minutes and abdominal hysterectomy was 75.2 minutes which is in accordance with the study done by Bharatnur S at al ^[12] and Singh A et al ^[16]. This added advantage of VH in terms of less intra-operative duration as compared to AH would suffice to decreased post-operative morbidity and hospital stay. The operations were performed by different gynaecological surgeons. The skill and experience of surgeons varied. This may be perceived as a problem in our study design. One might prefer only one surgeon performing all operations; however, this would not be realistic in our clinical context.

Total 18 (18%) cases were offered blood transfusion in current study. As there is a significant association between anaemia and hysterectomy, 12% of the patients out of the total 18%, were given blood preoperatively to reduce the intra-operative and post operative complication. Total 2 cases were complicated by bladder injury either by accidental opening of bladder or during adhesiolysis. There were no cases of bowel and ureteric injury in both the groups. Overall, 96% of the surgeries were performed without any intra-operative complications. The incidence of haemorrhage (2%) was comparable to Maresh at al study ^[17].

The post operative complications like fever, UTI or wound infection were more in the abdominal group as compared to vaginal group. There were 2 cases of wound infection in abdominal group which were managed with re-suturing after treatment with susceptible antibiotics. There was one case of vault hematoma in the abdominal group, which was managed conservatively. Overall, most common post operative complication was fever followed by urinary tract infection which is comparable to Bharatnur S at al ^[12]. There was no incidence of mortality due to adequate intra-operative and postoperative care.

The current study shows that in patients without genital tract prolapse, vaginal hysterectomy was associated with significantly shorter hospitalization than abdominal hysterectomy, this is correlated with the previous studies ^[9, 18]. It is not surprising that patients reported less discomfort and faster recovery after vaginal hysterectomy in the immediate post-operative period.

Conclusion

With adequate vaginal access, good uterine mobility and technical skill, vaginal hysterectomy can safely be performed on a Non-Prolapse uterus. Vaginal hysterectomy is the least invasive, fast, and least complicated surgery, which can result in early ambulation and the briefest hospital stay at the lowest possible expense when compared to abdominal hysterectomy. All the patients with non-descent uterus with benign condition should be subjected to vaginal hysterectomy unless contraindicated as it is feasible, safe and provides more comfort to the patient.

Newer technique for hysterectomy like total laparoscopic hysterectomy and robot assisted hysterectomy require more skill and monetary resources compared to vaginal and abdominal hysterectomy. Although we did not include economical parameters, there should be a potential economical advantage with VH because of shorter duration of surgery, reusable instruments and less need for high tech equipment.

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