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Original Research Article

Comparative study of vaginal hysterectomy and total abdominal hysterectomy in non-descent uterus

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ABSTRACT

Background: Aim of this study was to compare the outcome of the study of Vaginal Hysterectomy cases (VH) and that of total Abdominal Hysterectomy cases (AH) in non-descent uterus.
Methods: The study was carried out at Dhiraj Hospital on the outskirt of Vadodara, Gujarat. For the cases admitted to the Gynaecology unit requiring hysterectomy were randomly selected as 60 cases of VH and 60 cases of AH, during the study period between January 2023 to August 2024.
Results: Majority of the patients operated for hysterectomy belonged to 41-50 years of age. Mean age of AH and VH are 44.4 and 43.8 respectively. Most of the patients who underwent hysterectomy are multiparous and weighted mean parity in the AH group is 2.9 and VH Group is 3.2. The most common indications were DUB (38%) of the cases, followed by Adenomyosis (32%), Fibroid Uterus (22%) and PID (8%). Nearly 82% of the patients are delivered vaginally and 13% of these patients has previous caesarean delivery and operated without any major complication. Mean duration of surgery in VH (57 minute) is lower than the AH (75 minutes). Patients of vaginal group ambulated earlier than the abdominal group. Most of the patients discharged between 4-6 days post operatively.
Conclusions: Vaginal hysterectomy is a safe, least invasive & most economical route, with lesser complications and should be chosen as the preferred method of hysterectomy, over total abdominal hysterectomy, whenever feasible.

Keywords: Benign tumours, Complications, Non-descent uterus, Total abdominal hysterectomy, Vaginal hysterectomy

INTRODUCTION

Hysterectomy is the surgical removal of the uterus. Hysterectomy is the most performed elective major gynaecological surgery.[1] Women believe that the uterus and menstruation is the core of their femineity and sexual life.[2] The word 'hysterectomy' is derived from the Greek word '*hystera*' meaning womb and '*ectomia*' meaning excision.

The rate of hysterectomy has varied between 6.1 and 8.6/1000 women of all ages.[3] A study conducted in a northern state of India (Haryana) states that incidence of hysterectomy was 7% among married women above 15 years of age.[4] Another study from a western state (Gujarat) pointed out that 7-8% of rural women and 5% of urban women had already undergone hysterectomy at an average age of 37 years.[5]

Hysterectomies are performed vaginally, abdominally, or with laparoscopic or robotic assistance. 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 by which to remove the uterus.[6] Approach also depends on surgeon's preference, indication for surgery, nature of disease, and patient characteristics. The gynaecological surgeon 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 to obtain the most satisfactory outcome.[7]

Famous French surgeon, Doyen insisted that no one could call himself a gynaecologist until he performed vaginal hysterectomy.[8] Familiarity with vaginal surgery is a distinguishing mark between gynaecologists and general surgeons.[9]

This study aimed to compare outcome of the study of the Vaginal Hysterectomy (VH) in non-descent uterus and that of total Abdominal Hysterectomy (AH) with respect to demographic profile like age group and parity and presenting symptoms, indications, diagnosis, mode of delivery, operative time, operative complications, blood transfusion need, postoperative complications, ambulation, type anaesthesia and complications of anaesthesia and post operative hospital stay.

METHODS

This comparative study was carried out at Dhiraj Hospital on the outskirt of Vadodara, Gujarat. For the cases admitted to the Gynaecology unit requiring hysterectomy were randomly selected as 60 cases of VH group and 60 cases of AH group, during the study period between January 2023 to August 2024.

Inclusion criteria

For all these case, Ultrasonography and Pap smear were done in all case and D&C was done in required cases to rule out other pathology and malignancy. Also, the cases were investigated thoroughly for their cardio-respiratory status and fitness for surgery and other medical condition.

Exclusion criteria

Cases with prolapse uterus and sling operations done before for prolapse uterus were excluded. Even, laparoscopic assisted vaginal hysterectomy cases were excluded. Cases with adnexal pathology >5 cm and gynaecological malignant disorder cases were also excluded.

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 pre-operatively, intra operatively and post operatively for any complications. Adequate postoperative care was given.

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 abdomen wound was inspected in those patients who had undergone abdominal hysterectomy. Postoperative hospital stay was recorded in whole days.

Ethical Approval for this study was taken from Ethical committee of the institution.

Statistical analysis

For the statistical analysis Excel worksheets of Microsoft office 365 were used, for set of calculation & graphical representation.

RESULTS

Age distribution

The mean age of the patients who underwent vaginal hysterectomy was 44.4 years, and abdominal hysterectomy was 43.8 years (Figure 1).

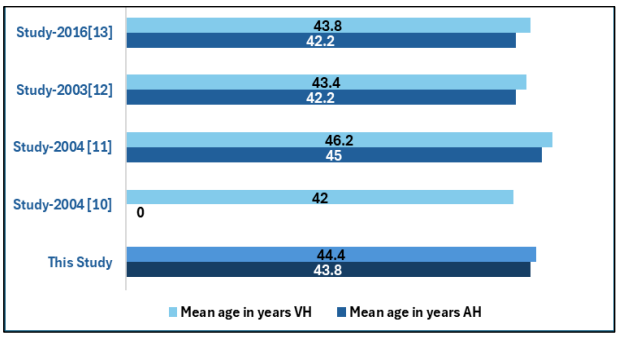

Figure 1: Mean age distribution (various studies).

Parity distribution

Majority of the patients are multiparous and mean parity in both the group is 2.9 for AH & 3.2 for VH. There is no nulliparous patient in the VH group and on the other side, one in the AH group (Figure 2).

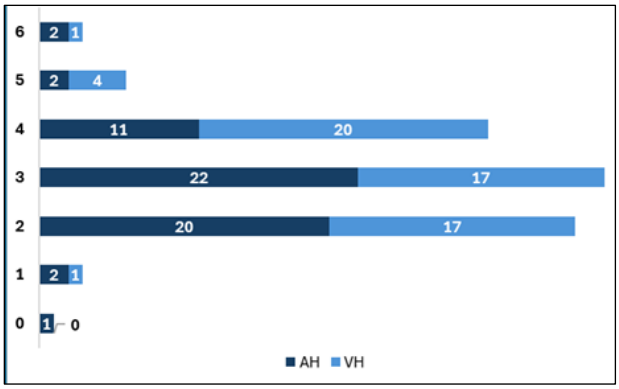

Figure 2: Parity distribution of this study.

Diagnosis

Indications

Most common indication for hysterectomy was AUB, which is common in peri-menopausal women. Repeated vaginal deliveries and age have been implicated as risk factors for developing pelvic floor abnormalities. The usual contraindications for vaginal hysterectomy are absence of significant uterovaginal prolapse, presence of uterine enlargement, adhesions, and the need for oophorectomy. If we had included the cases of prolapsed uterus then the mean age for VH may be more than AH, in our study.

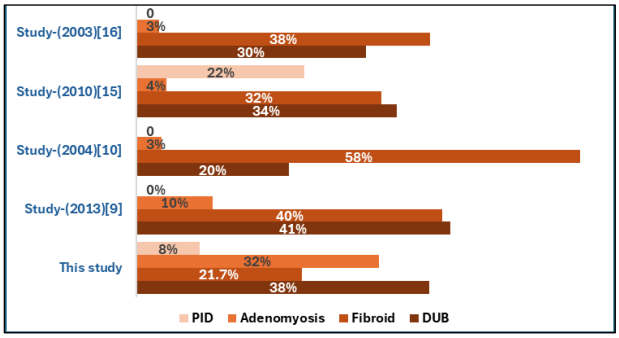

Figure 3: Comparison of indications distribution among various studies.

The figure 3 below shows that Dysfunctional Uterine Bleeding (DUB) is the most common indication of surgery in both the group. In most of the possible cases of DUB medical management and D&C was performed as first line of management and after failure of that hysterectomy was performed. In one mentally retarded patient AH was performed for complain of menorrhagia and request from legal guardian. It was included in DUB as no definite aetiology traced.

Adenomyosis uterus is 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 leads to the common presenting complaint of heavy menses.

Mode of previous delivery

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, amongst cases of this study.

Surgery outcome

Duration of surgery

The weighted average duration of vaginal hysterectomy is 57 minutes, and abdominal hysterectomy is 75 minutes, Figure 4.

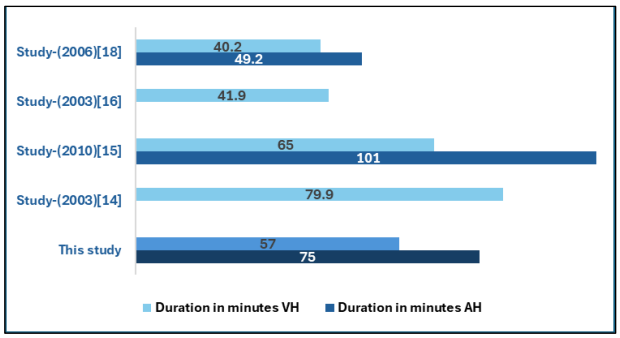

Figure 4: Duration of the surgery of various studies: AH vs. VH.

Blood transfusion

Total 23 (only 19%) cases out of 120 cases of hysterectomy were offered blood transfusion in this study. As there is a significant association between anaemia and hysterectomy, nearly 70% of the patients out of the total 23 blood transfusion cases, were given blood to all preoperatively & to some intra-operative to reduce the intra-operative and post operative complication. Net Intraoperative cases were only 14% and balance cases were given at post operative stage (Figure 5).

Operative complications

In this study overall 4% of the cases had significant restricted mobility on bimanual palpation and hence abdominal hysterectomy was offered to them and subsequent adhesiolysis performed. Total 3 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 (Figure 6).

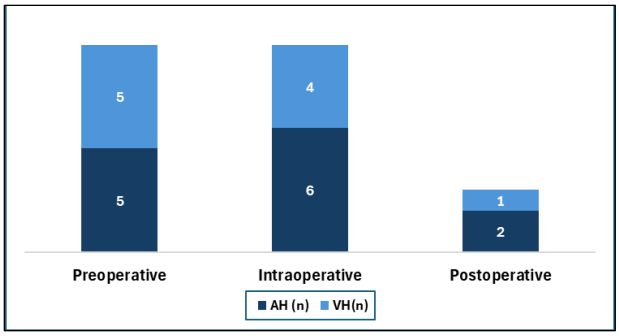

Figure 5: Cases of blood transfusion of this study: AH vs. VH.

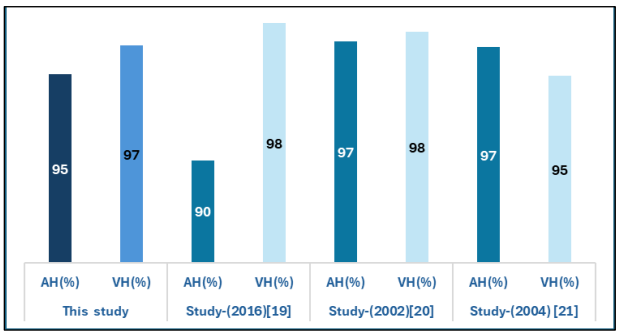

Figure 6: No operative complications - comparison of various studies.

Post operative complications

In this study post operative complications like fever, UTI or wound infection are more in the AH group as compared to VH group. There was 1 case 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 (Figure 7).

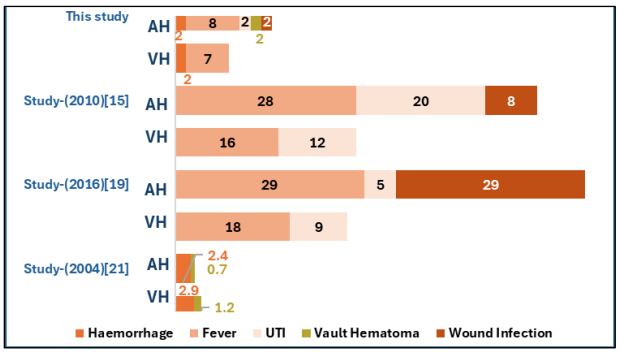

Figure 7: Comparison of post-operative complications of various study: AH vs. VH.

Ambulation

Majority of the patients in the VH group ambulated within 24 hours, while patients in the AH group ambulated in >24 hrs are nearly same as that of ambulated within 24 hours, which could probably be due to the discomfort/pain of the abdominal wound (Figure 8).

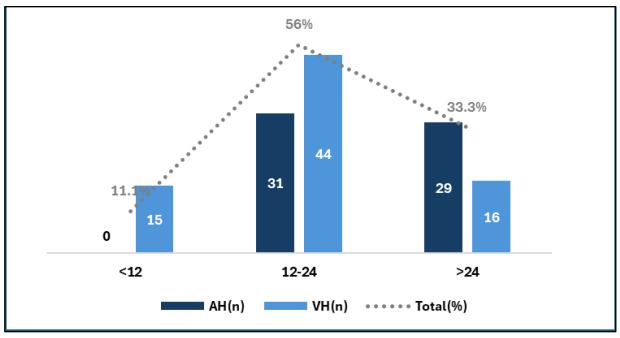

Figure 8: Comparison of ambulation time of this study: AH vs. VH.

Post operative hospital stay

Mean post operative stay in the vaginal group was 4.1 days and in the abdominal group, was 5.1 days. Overall post operative hospital stay is 4.6 days, for this study (Figure 9).

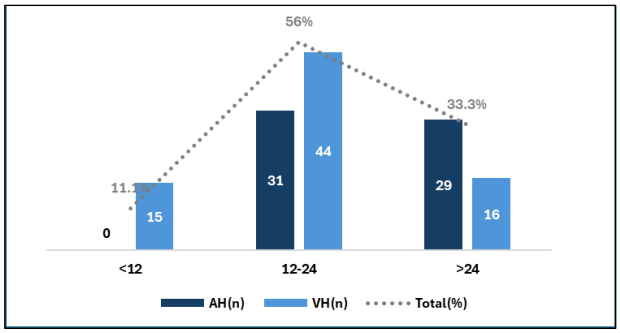

Figure 9: Comparison of post operative hospital stay of various study.

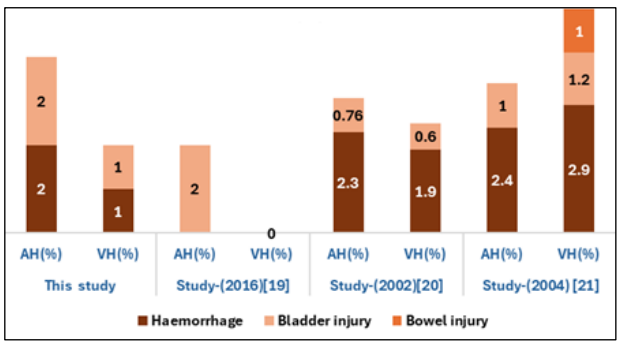

Figure 10: Comparison of operative complications (various studies): AH vs. VH.

Type of anaesthesia

Nearly 97% of the surgery operated under spinal anaesthesia with less anaesthesia related complication. General anaesthesia was given to nearly 3 % of total cases.

The most common anaesthetic complication was spinal headache in this study (Figure 10).

DISCUSSION

Age distribution

The average age for AH and VH in this study, as is comparable with different studies as shown in Figure 1.[10-13]

Parity

Further it is evident from this study and other studies that, Nulliparity is not a contraindication for VH. According to one study VH was successfully performed in 96.2% of the nulliparous patients.[14]

Effect of previous delivery type of outcome of hysterectomy

Doucette and co-workers in their study on 250 patients challenged the common contra-indications to vaginal hysterectomy including nulliparous patients, h/o previous CS or laparotomy and concluded that the above-mentioned factors are rarely contra-indications.[17] However, in our study, history of previous surgery affected the selection of route for hysterectomy.

With adequate vaginal access and good uterine mobility, vaginal hysterectomy can be easily performed. The uterosacral and cardinal ligaments, situated near the vaginal vault once clamped and cut produce first degree descent. Multiparity, lax tissues following multiple deliveries and decreased tissue tensile strength provide comfort to vaginal surgeon even in the presence of uterine enlargement. The other important reason for the lower proportion of hysterectomies performed vaginally is the presence of uterine enlargement with leiomyomas or adenomyosis. However, bulky uterus can be dealt with techniques like bisection, releasing incisions on uterus, myomectomy or debulking.

Indications

While comparing the findings of various studies in terms of indications for hysterectomy in terms of indication for hysterectomy (Figure 3), in this study, DUB is the most common indication of the surgery, whereas in the last three studies fibroid uterus is the most common indication.[9,10,15,16] As this study was conducted in a hospital attached with academic institute, the cases of DUB were comparatively more in this study and abdominal hysterectomy was more commonly performed in such institutes for teaching purpose.

Duration of surgery

The comparison with different study, is also shown in the earlier Figure 4.[14-16,18] 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.

Operative complications

The comparison of operative complication was made between different studies.[19-21] The incidence of bladder injury & haemorrhage in this study was comparable to these studies. The percentage of bladder injury was slightly more in this study. Although the incidence of bowel and ureteric injury was comparable in all studies. As the study conducted at tertiary care hospital, many surgeries performed by resident doctors under guidance of professors still majority of the cases were operated without any intra-operative complications.

Post-operative complications

As presented in Figure 7 earlier, overall, most common post operative complication is fever followed by urinary tract infection which is comparable to Study-(2004).[15] Incidence of haemorrhage in this study is lower as compared to the Evaluate trial. The rate of vault hematoma was comparable with the Study-(2004).[21] There was no incidence of mortality due to adequate intra-operative and postoperative care.

Post-operative hospital stay

This study shows that in patients without genital tract prolapse, vaginal hysterectomy is associated with significantly shorter hospitalization than abdominal hysterectomy. It is not surprising that patients reported less discomfort and faster recovery after vaginal hysterectomy in the immediate post-operative period. The results of this study are comparable with that of other such studies, as can be seen as Figure 9.[11,22,23]

CONCLUSION

The present study was undertaken to provide objective evidence to assist Gynaecological Surgeons in their selection of the most appropriate method of hysterectomy and to provide data to permit patients to make an informed decision about their preferred type of hysterectomy.

With adequate vaginal access, good uterine mobility and technical skill, vaginal hysterectomy can safely be performed on a non-prolapsed uterus, with an additional advantage of shorter duration of surgery, intraoperative complications, post-operative morbidity and shorter hospital stay.

Although we did not include economical parameters, there should be a potential economic advantage with VH because of shorter duration of surgery, reusable instruments, and less need for high tech equipment. Classic vaginal surgery for hysterectomy should not be regarded an exquisite but a basic gynaecological skill. Newer

technique for hysterectomy like total laparoscopic hysterectomy and robot assisted hysterectomy require more skill and monetary resources compared to vaginal and abdominal hysterectomy.

Thus, 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.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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