

# A Comparative Study of Abdominal Versus Non Descent Vaginal Hysterectomy

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## ABSTRACT

**Introduction:** Both Abdominal and Vaginal are not competitive procedures but each has its own place in the operative armamentarium of the gynecologist. Guidelines incorporating uterine size, mobility accessibility, and the pathology confined to the uterus (no adnexal pathology or known or suspected adhesions) have been proposed as selection criteria for vaginal hysterectomy. This study was performed to evaluate the appropriate route of hysterectomy (abdominal or vaginal) in our hospital population for women with benign disease by comparing peri-operative and post-operative complications.

**Material and Methods:** As per the Inclusion and Exclusion criteria, 100 cases admitted to the gynecology unit requiring hysterectomy for benign diseases were randomly selected out of which 50 cases underwent NDVH and 50 cases underwent TAH. Operating time, Blood loss, Post-Operative pain and other Postoperative complications were the parameters noted.

**Results:** The results were indicative towards Vaginal Hysterectomies being a better Surgical modality with lesser Operating time, Blood loss, Postoperative pain and other Postoperative complications like Febrile Morbidity, Wound Infection, Burst Abdomen, Wound Gape, Paralytic Ileus.

**Conclusion:** 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. Hence, allowing us to conclude it to be a better surgical option amongst Hysterectomies.

**Keywords:** Gynaecology, Total Abdominal Hysterectomy, NDVH, Burst Abdomen, Operating Time.

## INTRODUCTION

Hysterectomy are easily the most common elective surgeries in Gynecology; with both Abdominal and Vaginal hysterectomies holding their own positions in the Gynecological universe and certainly not at loggerheads with each other.<sup>1</sup> Charles Clay in Manchester performed the first abdominal hysterectomy in 1843. Vaginal hysterectomy was performed first by Soranus of Ephesus in 120 AD.<sup>2</sup>

Criteria such as the uterine size, mobility, accessibility and the pathology confined to the uterus (no adnexal pathology or known or suspected adhesions) are mostly the incorporating factors for vaginal hysterectomy.<sup>3</sup>

Extra uterine disease such as adnexal pathology, severe endometriosis or adhesions may preclude vaginal hysterectomy.

Severe operative and postoperative complications are experienced much more by younger women undergoing hysterectomy for symptomatic fibroids (especially LAVH).<sup>4</sup> Following hysterectomy women might be at higher risk of depression, anxiety and psychosexual problems.<sup>5</sup> This study

was performed to evaluate the appropriate route of hysterectomy (abdominal or vaginal) in our hospital population for women with benign disease by comparing peri-operative and post-operative complications.

## MATERIAL AND METHODS

After clearance from ethics committee the study was undertaken over a period of 2 year in a Tertiary Care Hospital and Teaching Centre. Total number of 100 cases admitted to the gynecology unit requiring hysterectomy for benign diseases were randomly selected out of which 50 cases underwent NDVH and 50 cases underwent TAH. Patients were selected as per the following inclusion and exclusion criteria:-

### Inclusion criteria

- 1) Uterine size not exceeding 12 weeks of gravid uterus.
- 2) Adequate uterine mobility.
- 3) Fibroid Uterus.
- 4) Abnormal uterine bleeding(AUB)
- 5) Chronic cervicitis.
- 6) Adenomyosis.
- 7) Postmenopausal Bleeding.

### Exclusion criteria

- 1) Uterine size more than 12 weeks of gravid uterus.
- 2) Restricted uterine mobility.
- 3) Prolapsed uterus.
- 4) Patients with complex adnexal mass.
- 5) Patients with previous 2 or more LSCS.

After taking a thorough history and clinical examination, patients were subjected to routine investigations which included USG abdomen and pelvis, complete haemogram, urine analysis, blood grouping and Rh typing, random blood sugar, blood urea, serum creatinine, Liver Function Tests, Chest XRay, ECG, HIV, HBsAg and pap smear. Patients were selected according to exclusion and inclusion criteria.

Operating time for Non-descent vaginal hysterectomy was calculated from incision at cervicovaginal junction to the completion of closure of vault. Operating time for Total abdominal hysterectomy was calculated from incision on the abdomen to closure of skin incision.

Blood loss was estimated by preoperative and postoperative

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**How to cite this article:** Hemant Deshpande, S. Burute, Rachna Malik. A comparative study of abdominal versus non descent vaginal hysterectomy. International Journal of Contemporary Medical Research 2016;3(4):1153-1156.

(day 2) haemoglobin and haematocrit measurement and Intra operative complications such as injury to bowel/bladder or ureter and haemorrhage was noted.

Post-operatively all patients were given same antibiotic prophylaxis with adequate analgesia and fluid replacement. Complications like wound infection, vault hematoma, febrile morbidity, haemorrhage and death were kept into consideration, while hospital stay was calculated as number of days in hospital after the surgery including the day of surgery.

Post-Operative pain was documented as per the Visual Analogue Scale.

### STATISTICAL ANALYSIS

Data analysis was done using the SPSS (Statistical Package for the Social Science) Version 17 for window. The detail of previous surgery, indication, type of haemorrhage, ambulation, oral fluid and complication at follow up were calculated with no. The chi-square test, Z test, proportion test was used to find significance difference of age, parity, comorbidity, duration blood loss, intra op complication, anesthesia, post of complication, hospital stay between TAH and NDVH. MW test was used to find the significant difference of post of pain score between TAH and NDVH. A probability value of 0.05 was accepted as the level of statistical significance.

### RESULTS

The Mean age of women in our study was 48.74 in NDVH, which was higher when compared to TAH with a Mean age of 46.12. As it was expected with a higher age mean in NDVH patients, all comorbidity DM, HTN, Bronchial asthma, IHD were more than TAH.

The maximum number of patients who underwent the surgeries the underlying pathologies were very consistent with first being Fibroids followed closely by AUB the comparison of which have been demonstrated in Figure 1.

The Mean duration of surgery in both the procedures was kept and TAH was much lengthier a task than NVDH where it took 75.90 minutes in TAH which as compared to just 39.76minutes in NDVH. This was a statistically significant finding in our study.

TAH also measured higher when it came to intraoperative blood loss where it amounted to 138.80ml of blood loss than that of NDVD with on an average just 41.96ml. This also was statistically significant. It could majorly be amounted to the fact that all the patients with primary haemorrhage (16) were from the TAH group while Reactionary and Secondary haemorrhage didn't assert any significance in our observations as is seen in the Figure 2.

In the 100 surgeries performed the complications were as follows: 4 cases had Ureteric injury were in TAH, one cases with bladder injury was in NDVH and one cases with bowel injury was in TAH and this was not statistically significant. Post operatively pain was measured using the Visual Analogue Scale on Day 1,2 and 3 in which the scores for the patients who underwent TAH were always higher than that of NDVH as depicted in Figure 3, and were statistically significant too.

Post operative complications like febrile morbidity, wound infection, Burst abdomen, wound gape, Paralytic Ileus were

Bar diagram showing indication wise distribution of cases in TAH and NDVH group

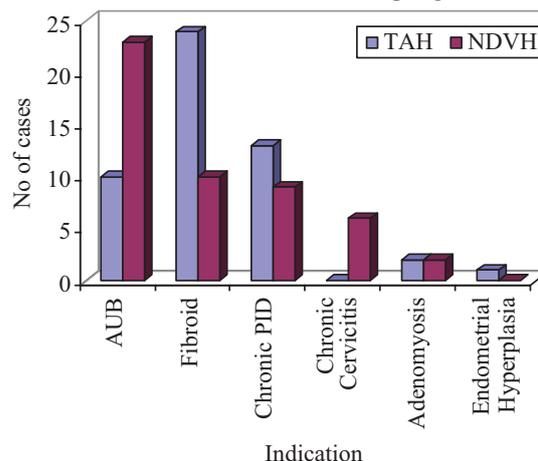


Figure-1: Comparison of Various Indications for both TAH and NDVH

Bar diagram showing comparison of type of haemorrhage in TAH and NDVH group

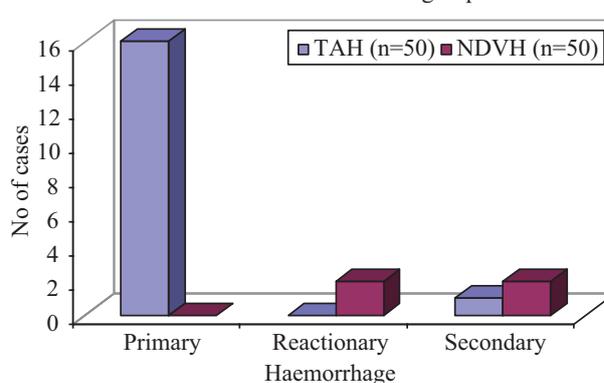


Figure-2: Comparison of type of Haemorrhage in TAH and NDVH

Bar diagram showing comparison of post of pain score in TAH and NDVH group

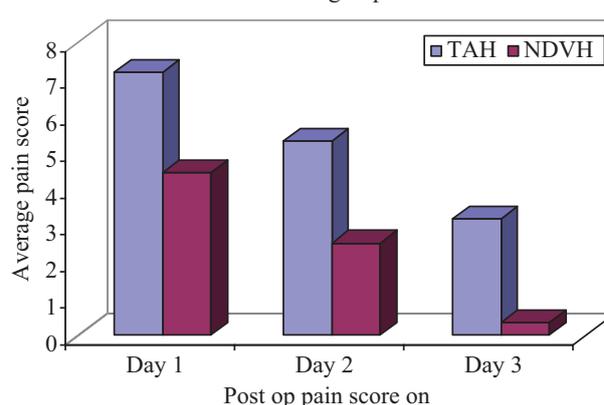
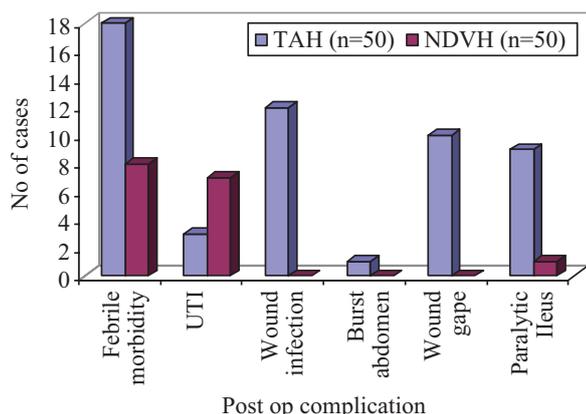


Figure-3: Comparison of Postoperative pain score in TAH and NDVH till Post-operative Day3.

also more in TAH but held no statistical significance have been demonstrated with the help of Figure 4. Even a comparative analysis of hospital stay showed TAH patients stayed for 7.14 days on an average in the hospital and NDVH patients stayed for just 3.18 days on an average. This indeed was highly significant statistically.

Bar diagram showing post op complication wise distribution of cases in TAH and NDVH group



**Figure-4:** Comparison of Postoperative complications in TAH and NDVH

## DISCUSSION

The non-randomized prospective cohort study was carried out to study the indication for abdominal and vaginal hysterectomy for non-descent uterus and to compare postoperative complications in vaginal and abdominal routes of hysterectomy. Advantage and disadvantage for abdominal and vaginal hysterectomy for non-descent uterus were also studied. Following were the important observations, which have been enumerated upon.

Mean age was more among the cases underwent Non-descent vaginal hysterectomy compared to Total abdominal hysterectomy in the study group. Mean age in Non-descent vaginal hysterectomy was 48.74 and in Total abdominal hysterectomy was 46.12 yrs. Similar finding was also observed in a study conducted by L. Benassi *et al* who did a prospective, randomized study. 60 vaginal hysterectomies (study group) were compared with 59 abdominal hysterectomies (control group). There were no major differences in patient age, weight, parity, and uterine weight between the two groups.<sup>6</sup>

Another study by Asnafi N, *et al* comparing the complications of vaginal versus abdominal hysterectomy also concurred with similar results with the mean age of the patients who had undergone vaginal hysterectomy was  $58.5 \pm 12$  years for vaginal hysterectomy and  $44.69 \pm 7.9$  years for abdominal hysterectomy.<sup>7</sup>

Comorbid condition like anemia, Diabetes mellitus, Hypertension, bronchial asthma and ischemic heart disease were not significantly associated with Total abdominal or Non-descent vaginal hysterectomy in study group and similar finding were also seen in a study conducted by Hoffman MS, DeCesare S, Kalter C in 1994.<sup>8</sup>

In our study AUB, fibroid and chronic cervicitis were common indications for hysterectomy. For fibroid, chronic PID and endometrial hyperplasia, Total abdominal hysterectomy was preferred and for chronic cervicitis and AUB Non-descent vaginal hysterectomy was preferred. Similar finding was observed in a study conducted by S Bharatnur (2010) where they studied the comparative risks of complications of abdominal and vaginal hysterectomies and concluded that DUB, Fibroid and chronic cervicitis were common indica-

tions for hysterectomy. Other indications were cervical dysplasia, adenomyosis and cervical polyp.<sup>9</sup>

The mean duration of surgery was significantly less among Non-descent vaginal hysterectomy as compared to Total abdominal hysterectomy cases in the study group. Mean duration was 39.76 min in Non-descent vaginal and 75.90 min in Total abdominal hysterectomy. Similar finding observed in a study conducted by Bing Chen, Dong-Ping Ren, Jing-Xuan Li, Chun-Dong Li where the operation time in Vaginal hysterectomy (Mean time 65.2 min) group was significantly shorter than in the abdominal hysterectomy (Mean time 95.6 min) group.<sup>10</sup> S Bharatnur also noted that mean operating time was more in abdominal hysterectomy than in vaginal hysterectomy (AH  $101 \pm 27.1$  min, VH  $65 \pm 26.2$ ).<sup>9</sup>

Mean blood loss was significantly less amongst Non-descent vaginal hysterectomy cases as compared to Total abdominal hysterectomy. Mean blood loss was 41.96 in Non-descent vaginal and 138.80 in Total abdominal hysterectomy. Bing Chen, Dong-Ping Ren, Jing-Xuan Li, Chun-Dong Li who compared outcomes of vaginal and abdominal hysterectomy procedures in women also concurred with their results showing intraoperative blood loss was significantly less in the Vaginal Hysterectomy (Mean 30.4 ml) group compared with the abdominal hysterectomy (Mean 70.3 ml) group.<sup>10</sup> Intraoperative complication showed ureteric injury was significantly high among Total abdominal hysterectomy cases as compared to Non-descent vaginal hysterectomy cases, while bladder injury was seen in one case in Non-descent vaginal hysterectomy and one case had bowel injury in Total abdominal hysterectomy. N. Fatima Shanthini, G. K. Poomalar, M. Jayasree, A. Bupathy found that Bladder injury occurred in 1 case in VH (1.9%) and in 4 cases in TAH (2.3%). Ureter injury occurred in 1(0.6%) case in TAH group. Authors concluded that vaginal hysterectomy is associated with quicker recovery, early mobilization, and shorter hospitalization, less operative and postoperative morbidity when compared to abdominal hysterectomy.<sup>11</sup>

Mean hospital stay in days was significantly less among Non-descent vaginal hysterectomy as compared to Total abdominal hysterectomy. Mean hospital stay was 3.18 days in Non-descent vaginal hysterectomy and 7.14 days in Total abdominal hysterectomy. Similar finding observed in a study conducted by Bing Chen, Dong-Ping Ren, Jing-Xuan Li, Chun-Dong Li with hospital stay length in the vaginal hysterectomy (Mean hospital stay 4.5 days) group being significantly shorter than in the Abdominal hysterectomy (Mean hospital stay 6.3 days) group.<sup>10</sup>

## 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. Hence, it can be elementarily

concluded that Non Descent Vaginal Hysterectomy triumphs over Abdominal Hysterectomy with patient favourable outcome and must be the choice of operative procedure amongst the two surgeries.

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 03-03-2016; **Published online:** 29-03-2016