

# Abdominal Versus Vaginal Hysterectomy In Non-Descent Uterus

Robina Mirza, Poonam Malhotra, Dinesh Kumar, Surinder Kumar

## Abstract

This longitudinal study to evaluate operative and post-operative complications in patients undergoing vaginal and abdominal hysterectomy for Non-descent uterus was conducted in SMGS Hospital, Jammu. It included 150 patients requiring hysterectomy for conditions other than uterine prolapse. Of those 150 patients, 75 females who were subjected to vaginal hysterectomy were assigned as Group A. The remaining 75 females who underwent abdominal hysterectomy were taken in as group B. Patients with uterine size > 18 weeks, immobile uterus, prolapsed uterus, complex adnexal mass, suspected malignancy were excluded from the study. After informed consent, all the patients included in the study were subjected to detailed history, clinical examination and investigations. Patients in group A were undergone non descent vaginal hysterectomy (NDVH) and patient in group B were undergone total abdominal hysterectomy (TAH). The main parameters used for comparison in two groups were duration of surgery, Intra-operative blood loss, ambulation, Postoperative Blood transfusion requirement, fever, pain score on day 3, Postoperative infections, duration of hospital stay. Duration of surgery, amount of blood loss, pain score on day 3, Postoperative blood transfusion requirement, incidence of wound infections, febrile morbidity, UTI, RTI and paralytic ileus are less in NDVH as compared to TAH group. Non-descent vaginal hysterectomy is easy to perform and is associated with quicker recovery, early mobilization, shorter hospitalization, less operative and postoperative morbidity.

## Key Words

Non-Descent Vaginal Hysterectomy, Total Abdominal Hysterectomy

## Introduction

Hysterectomy is one of the most frequently performed gynecological operative procedures all over the world. A large scale survey has shown that 70-80% of hysterectomies are performed by abdominal route in the absence of uterine prolapse probably because most gynecologists prefer abdominal to other accepted routes of hysterectomy.(1) Hysterectomies are performed vaginally, abdominally or with laparoscopic assistance. Factors that influence the route of hysterectomy for benign diseases include the size and shape of the vagina and uterus; accessibility to the uterus; extent of extra uterine disease, the need for concurrent procedures, surgeon's training and experience, available hospital technology, devices and support.(1)

The ease and convenience offered by a large abdominal incision have led to preponderance of abdominal hysterectomy over other types of hysterectomy. The suggested advantages of abdominal route are that the tubo-ovarian pathology can be tackled effectively and simultaneously when needed and the operation can be performed by relatively less experienced surgeon while the disadvantages are a higher incidence of postoperative complications like fever, pain, abdominal wound infection that results in prolonged hospitalization, greater hospital charges and delayed resumption of routine life. It is also difficult to perform in obese patients with still higher complication rates. (2) Use of laparoscopic hysterectomy has recently been reported as alternative

From the Postgraduate Department of Obstetrics and Gynaecology SMGS Hospital, Government Medical College, Jammu  
Correspondence to : Robina Mirza, Lecturer, Obst and Gyane, Govt. Medical College Jammu, J&K- India

to traditional abdominal hysterectomy and is gaining popularity because superior post-operative recovery and shorter hospital stay. Laparoscopic surgery is associated with higher cost, longer duration of operation, requirement of specially trained personnel and risks associated with laparoscopy. (3,4) The vaginal approach is usually reserved for uterovaginal prolapse. The usually assumed contraindications for vaginal hysterectomy are absence of significant uterovaginal prolapse, presence of uterine enlargement, previous pelvic surgery, adhesions and the need for oophorectomy.<sup>3</sup> This results in a high proportion of abdominal or laparoscopically assisted hysterectomies being performed when the procedure could be performed by the vaginal route. Therefore, the general contraindications to vaginal route must be re-evaluated on the basis of currently available data as explained below:

Several strategies such as bisection, wedge morcellation and coring have shown to facilitate vaginal hysterectomy in the presence of an enlarged uterus, with no increase in morbidity.<sup>(5)</sup> A number of studies have confirmed that it is safe to perform a vaginal hysterectomy in the presence of minimal or no uterine descent.<sup>(5)</sup> Most ovaries are visible and readily accessible during vaginal surgery. It is generally safe to perform BSO at the time

of vaginal hysterectomy. Up to 97.5% of prophylactic oophorectomies can be completed vaginally.<sup>(5)</sup> In practice previous pelvic surgery is cited as the reason for choosing abdominal over vaginal hysterectomy. Caesarean section is commonly recorded as the reason for performing abdominal rather than vaginal hysterectomy. Contrary to the belief, the damage to the bladder in women with a previous caesarean section is usually easier to avoid during vaginal hysterectomy than during abdominal hysterectomy because the initial dissection plane is below bladder scarring from Caesarean section.<sup>(5)</sup> Extrauterine diseases such as adnexal pathology, severe endometriosis or adhesions may preclude vaginal hysterectomy. However, in these cases, it may be prudent to visualize the pelvis by with a laparoscope before deciding on the route of hysterectomy. (6) A Cochrane review of 34 randomized trials and ACOG committee on Gynecologic Practice concluded that NDVH is the approach of choice whenever feasible, based on its well documented advantages and lower complication rates.<sup>(7)</sup>

The objective of the present study was to compare the outcome and complication rates of vaginal and

abdominal hysterectomy done for similar indications i.e., benign and premalignant conditions of uterus in a non prolapsed uterus.

### **Material and Methods**

The present study was conducted in the post-graduate department of Obstetrics and Gynaecology, SMGS Hospital, Government Medical College, Jammu over a period of one year. 150 patients who required hysterectomy for conditions other than uterine prolapse were included in the study. Of those 150 patients, 75 females who were subjected to vaginal hysterectomy were assigned as Group A. However, in two patients in group A uterus could not be removed vaginally and were converted into abdominal route. Hence both of them were excluded from the study and the remaining 73 patients were included in the study Group A. The remaining 75 females who underwent abdominal hysterectomy were taken as Group B. Women with Uterine Size > 18 weeks, immobile uterus, prolapsed uterus, complex adnexal mass, contracted bony pelvis with narrow vagina, suspected or diagnosed malignancy were excluded from the study. The particulars of the patient were noted according to the prescribed proforma. Written and informed consent was taken from the patient for evaluation. All the patients included in the study were subjected to detailed history and clinical examination including both general physical and systemic. All the investigations including Hb, BT, CT, complete blood counts, renal and liver function tests, PT, PTI, TSH, HIV, HbsAg, VDRL, pap smear, urine routine examination, Chest X-ray, ECG, USG abdomen and pelvic organs were done. All the patients received prophylactic antibiotic Cefotaxime 1 gm intravenously after sensitivity testing prior to surgery. Group A patients were undergone non descent vaginal hysterectomy (NDVH) whereas group B patients were undergone abdominal hysterectomy (TAH).

*The main parameters used for comparison in two groups were:*

- 1) Duration of surgery: The time required for surgery was calculated from the first incision till the end of procedure and was noted by the assistant.
- 2) Intraoperative blood loss: Blood loss was calculated by noting the number of mops used during surgery. The measurement of the mops used was 34x24 cm. On an average one-fourth soaked mop contained 20 ml, one half soaked 40 ml and fully soaked 100 ml.

**Table 1. Intra and Post Operative Observations**

Factors	GROUP A		GROUP B		P Value
	No.	±SD	No.	±S.D	
<b>Duration of Surgery</b>	47.07 minutes	13.287	65.77 minutes	12.14	0.000
<b>Blood loss</b>	190.68 ml	33.54	243.33 ml	40.38	0.000
<b>Uterine Volume</b>	207 cc		180 cc		
<b>Pain Score on Day 3</b>	2.82 cm	1.147	3.41 cm	1.175	0.002
<b>Ambulation</b>	1.30 days	0.46	2.36 days	0.81	0.000
<b>Duration of</b>	3.1 days	1.04	7.2 days	1.63	0.000

**Table 2. Postoperative Blood Transfusion**

Surgery	Blood Transfusion Given (%)	Blood Transfusion Not Given (%)	P Value
<b>GROUP A</b>	6(7.2)	67(91.78)	<b>Chi-square value=3.45 p=0.003</b>
<b>GROUB B</b>	14(18.67)	61(81.33)	

**Table 3. Wound Infection**

GROUPS	Without Infection (%)	With Induration (%)	With Frank Infection (%)	P Value
<b>A</b>	72(98.6)	0(0)	1(1.3)	<b>Chi-square value=8.77 p=0.003</b>
<b>B</b>	64(85.3)	3(4)	8(10.6)	

**Table 4. Febrile Morbidity**

GROUPS	With Fever (%)	Without Fever (%)	P Value
<b>A</b>	3(4)	70(96)	<b>Chi-square value=109.62 p=0.000</b>
<b>B</b>	14(18.67)	61(81.3)	

3) Uterine volume: It was estimated by the volume of water displaced by the removed uterus in a graduated jar.

4) Ambulation: The number of days required by the patient for unaided ambulation was recorded.

5) Postoperative Blood transfusion if required was noted.

6) Fever: The temperature more than or equal to 100.40 F on two occasions 4 hrs apart excluding the first post-operative day was noted. The temperature was assessed and charted 4 hourly.

7) Pain score on Day 3: The women scored their postoperative pain on a 10 cm visual analogue scale and

the results were compared.

8) Wound infection: The presence of wound induration or evidence of any frank infection if present were assessed and compared.

9) Any evidence of infections like Respiratory or urinary tract infection in the two groups were observed and compared.

10) Duration of hospital stay: The number of days spent in the hospital after surgery excluding the day of surgery was noted. The patients were called for follow up at two and six weeks.

Results were expressed as mean ( $\pm$  standard deviation). The data was analysed statistically using Chi

square test and t-test wherever applicable. The difference was considered significant at  $p < 0.05$ .

## Results

In the present study patients undergoing surgery (NDVH/TAH) were divided into two groups- Group A (NDVH group) comprising of 73 patients and Group B (TAH) comprising of 75 patients. Mean age in group A was 43.6 years and mean age in group B was 43.2 years. Mean parity in group A was 3.70 whereas Mean parity in group B was 3.49.

The most common indication of hysterectomy was fibroid in both the groups followed by DUB and adenomyosis. Mean duration of surgery in group A was 47.07 minutes ( $\pm 13.287$  SD) whereas, mean duration of surgery in group B was 65.77 minutes ( $+12.14$  SD). The difference in the duration of surgery in the two groups with the p value of 0.000 was found to be statistically significant (*Table 1*). Mean blood loss in group A was 190.68 ml ( $\pm 33.54$  SD) whereas mean blood loss in group B was 243.33 ml ( $\pm 40.38$  SD).

The difference in the blood loss was statistically significant with p value of 0.000 (*Table 1*). Mean uterine volume in group A was 207 cc where as in group B mean uterine volume was 180 cc (*Table 1*). Mean pain score in group A was 2.82 cm where as mean pain score in group B was 3.41 cm. The difference in the postoperative pain score was found to be statistically significant with p value of 0.002 (*Table 1*). The time required by the patients for unaided ambulation in group A was 1.30 days whereas, in group B, it was 2.36 days.

The difference in the duration of ambulation in the two groups was statistically significant with p value of 0.000 (*Table 1*). Mean duration of hospitalization in group A was 3.1 days whereas, it was 7.2 days in group B. The difference in duration of hospital stay in the two groups was found to be significant with p value of 0.000 (*Table 1*). The postoperative blood transfusion was required in 6 (7.2%) patients in group A as compared to 14 (18.67%) in group B.

On comparing the two groups, the p value of 0.003 was found to be statistically significant (*Table 2*). The incidence of wound infection was higher in group B as compared to group A (*Table 3*). The two groups were compared with the p value = 0.003 which was statistically significant. 3 (4%) patients in group A while 14 (18.67%) in group B were febrile in the postoperative period. While

comparing the two groups, p value obtained was 0.000 which was statistically significant ( $p < 0.05$ ) (*Table 4*).

In group A two patients developed UTI and two RTI during postoperative period. In group B, 3 patients had UTI, 7 RTI and 3 had paralytic ileus in the postoperative period. No case of paralytic ileus was reported in NDVH group. The difference in the incidence of postoperative complications was statistically significant ( $p = 0.03$ ).

## Discussion

In the present study TAH was found significantly more time consuming as compared to NDVH with p value of 0.000. This is in accordance with studies by Pardeep KG, *et al* (8) and Mehta ST, *et al* (9) who also found TAH more time consuming as compared to NDVH.

In the present study, there is significantly more blood loss in TAH group as compared to NDVH group with p value = 0.000. This corresponds to studies by Bharatnur S (10), Mittal P, *et al* (11) and Saha R, *et al* (12).

In the present study, the mean uterine volume removed vaginally was 207 cc and those removed abdominally was 180 cc. The largest uterus removed vaginally in the present study measured 600 cm<sup>3</sup>. Volume reduction was required for uterine volume exceeding 200 cc while Ray A, *et al* (3) required volume reduction for uterine volume more than 250 ml.

In the present study the pain score on visual analogue scale on third postoperative day was found significantly less in NDVH group as compared to TAH group with the p value of 0.002. Various studies by Pradeep KG, *et al* (8), Dewan R *et al* (13) and Ray A *et al* (3) have proved the fact that postoperative discomfort is much less in NDVH as compared to TAH.

In the present study patients in NDVH group become ambulatory in significantly less time as compared to TAH group with the p value = 0.000. This was proved by several authors in their study like Ray A *et al* (3), Bhadra B *et al* (14) and Chakraborty S *et al* (15).

In the present study duration of hospital stay was significantly less in NDVH group as compared to TAH group with a p value of 0.000. As the patients were more comfortable after operation through the vaginal route, it was possible to discharge them from the hospital earlier. Similarly this was found by Pradeep KG *et al* (8), Kumar S *et al* (16), Gayak K *et al* (17), Ray RN

*et al* (18) and Begum S *et al* (19) in their study.

In the present study need of blood transfusion was significantly more in group B as compared to group A with the p value equivalent to 0.003. This is in accordance with the study by Chakraborty S *et al* (15).

On analysis one case of vaginal vault infection was found in group A, whereas 8 patients with frank wound infection and 3 with wound in duration without any discharge were noted in group B. When the two groups were compared, the p value=0.003 was found to be statistically significant. This is in accordance with study by Bharatnur S (10) and Iftikhar R (20), who also found more cases of wound infection in abdominal group as compared to NDVH.

In the present study Febrile morbidity was significantly more common in group B as compared to Group A with p value=0.000. Similar inference were made in other studies by Pradeep KG *et al* (8) and Iftikhar R (20). In our study it was found that in group A two patients developed UTI and two had RTI and no case of paralytic ileus while in group B three patients had UTI, Seven RTI and three had paralytic ileus. This is in accordance with study by Iftikhar R (20) and Bharatnur S (10) who observed that the incidence of UTI was more in TAH as compared to NDVH. Similarly Iftikhar R (20) found paralytic ileus in only abdominal group.

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