

**COMPARATIVE STUDY OF NON-DESCENT VAGINAL HYSTERECTOMY VERSUS TOTAL ABDOMINAL HYSTERECTOMY IN BENIGN UTERINE DISORDERS IN A TERTIARY CARE HOSPITAL OF BIHAR****Kanchan Sharma**

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ABSTRACT

OBJECTIVE: After caesaren section, hysterectomy is the second mostly performed operation by gynecologist[1]. Nowadays, there are three main ways of performing hysterectomy operations for benign diseases- Abdominal hysterectomy (AH), Laparoscopic hysterectomy (LH) & vaginal hysterectomy (VH). Vaginal hysterectomy for non-descent uterus is considered as an acceptable method of hysterectomy. The objective of this study was to compare the time taken during operation, intraoperative and postoperative complications of VH and TAH in non-descent uterus.

METHODS: This was a prospective randomized controlled trial performed on 100 consecutive patients requiring hysterectomy for benign diseases during period of 2 years (August 2019–July 2021). Group A (n = 50) underwent vaginal hysterectomy (non-descent vaginal hysterectomy, NDVH) which was compared with group B (n = 50) who had abdominal hysterectomy. The primary outcome measures were in terms of operative time, intraoperative blood loss, hospital stay, postoperative mobility & analgesia, blood transfusion, wound infection, postoperative systemic infections. Secondary outcome were measured in terms of conversion of vaginal to abdominal route and requirement of re-laparotomy.

RESULTS: Demographic characteristics were similar between both groups. There were no intraoperative complications in any group. In terms of operative duration, intraoperative blood loss, postoperative blood transfusion & pain, post operative ward mobilization, postoperative wound infection, duration of hospital stay, p-value was found to be significant in vaginal hysterectomy, as compared to abdominal hysterectomy. In terms of postoperative systemic infections, p-value was found to be not significant. None of any cases in the vaginal group needed to be converted to abdominal approach and none of the cases underwent re-laparotomy in either group.

CONCLUSION: From this study, it was found that NDVH is associated with lesser blood loss during surgery, quick recovery, less operative time, early mobilization and less postoperative morbidity as compared to TAH. NDVH is considered as less invasive technique with shorter hospital stay, lesser complications and faster recovery.

KEYWORDS : Abdominal hysterectomy, benign uterine disorders, Laparoscopic hysterectomy, non-descent vaginal hysterectomy.

INTRODUCTION

Worldwide, hysterectomy is one of the most commonly performed gynaecological surgeries. First abdominal hysterectomy was done by Charles clay in Manchester in 1843. Vaginal hysterectomy was first performed by soranus of Ephesus in 120 AD[2]. With Advancement in anaesthesia, transfusion facilities, surgical procedures and availability of antibiotics led to hysterectomy becoming the most common non-pregnancy related major surgical procedure in women[2]. Factors that may influence the route of hysterectomy for benign causes 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 training and experience; available hospital technology, devices and support; emergency or scheduled cases; and preference of the informed patient[3]. Currently, there are three main types of hysterectomy operations available for benign diseases-Abdominal hysterectomy (AH), vaginal hysterectomy (VH) and Laparoscopic hysterectomy (LH). AH is most commonly performed method for uterine removal. This route is used for malignancies, bulky uteri or when there are adhesions and removal of uterus is not possible through vaginal route[4]. Overall mortality rates for AH or VH are 0.1-0.2%[5]. Vaginal route for non-descent uterus is an acceptable method of hysterectomy despite previous belief that it is the contraindication in certain conditions[6]. Vaginal route of hysterectomy has distinct health and economic benefits in terms of fewer morbidities, better postoperative quality -of-life outcomes, reduced hospital stay and better patient satisfaction[7]. A Cochrane review of 34 randomized trials of abdominal, laparoscopic and vaginal hysterectomy, including 4,495 patients, concluded that vaginal hysterectomy has the best outcomes of these three routes. Cost analysis has consistently demonstrated that vaginal hysterectomy is the most cost-effective route[8]. The aim of this study was to evaluate and compare the most efficient route of hysterectomy in women with mobile non-prolapsed uterus of 12 weeks or lesser by comparing the intra and postoperative complications of vaginal and abdominal hysterectomies.

METHODS

This was a randomized prospective comparative study conducted at the Department of Obstetrics and Gynaecology, Patna Medical College and Hospital, patna, 212 patients requiring hysterectomy were selected from the Outpatient Department and detailed history elicited who satisfied inclusion criteria and general and systemic examinations performed. Of which, 75 did not meet the inclusion criteria, 27 patients declined to participate 10 patients did not come back to the hospital. Thus, 112 patients were excluded from the study and 100 consecutive patients requiring hysterectomy for benign uterine conditions were

analysed over a period of 2 years (August 2019–July 2021) and were randomly allocated to vaginal and abdominal groups. Group A (n = 50) underwent vaginal hysterectomy (non-descent vaginal hysterectomy, NDVH) which was compared with group B (n = 50) who had abdominal hysterectomy.

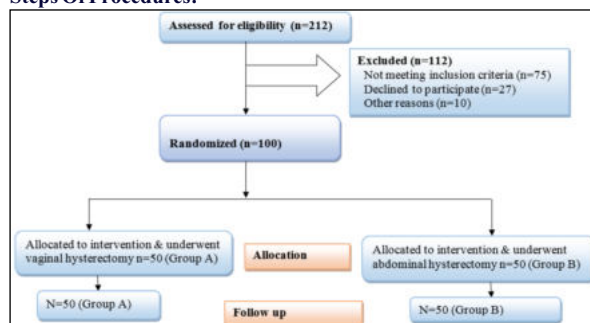
Inclusion Criteria

Women were included in the study only if the uterine size was 12 weeks or lesser uterus was mobile if the operation was being performed for a benign uterine condition.

Exclusion Criteria

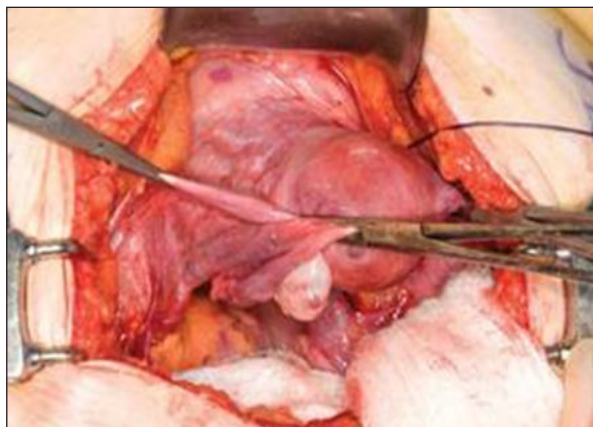
Women were excluded if their uterus was more than 12 weeks size restricted mobility uterovaginal prolapsed complex adnexal mass, previous 2 or more LSCS.

Informed, written consent was taken from all the patients after explaining the risks and benefits associated with the procedure. Approval of ethical committee was also taken.

Steps Of Procedures:-**Total Abdominal Hysterectomy**

- Pfannenstiel incision was made and abdomen opened in layers.
- Uterus was elevated out of the pelvis by applying Kocher's clamps to the side of uterine cornu bilaterally.
- Bilateral clamps were applied to the round and tubo-ovarian ligaments (to the infundibulo-pelvic ligaments if ovariectomy was planned or ovarian ligament if ovaries was planned to be preserved) then cut and ligated.
- Uterovesical fold was opened and bladder mobilized to the lower limit of cervix.

- Then subsequential clamps were applied to the uterine artery and mackenrodt's - uterosacral ligaments bilaterally, clamped, cut and transfixed.
- Uterus delivered out and vault closure done. After securing haemostasis, abdomen was closed in layers.



Vaginal Hysterectomy

- labial sutures were applied, bladder evacuated.
- Holding the cervix with vulsellum, transverse incision was made on anterior vaginal wall.
- Deepening the incision, the pubo-vesico-cervical ligament was reached and incised. Pushing the bladder up with steady traction, Uterovesical peritoneum was visualized and was incised and incision extended.
- After opening the Pouch of Douglas, bilateral Mackenrodt's-Uterosacral ligaments were clamped, cut and transfixed, the same procedure was followed for uterine artery and fundal structures followed by vault closure[9-10].



All patients were given prophylactic Inj. cefotaxime 1 gm half an hour before skin incision. The operating time was noted from time of incision till the end of the procedure. To measure intraoperative blood loss, weight of swab in the dry and blood soaked states was measured. Temperature was assessed and charted 4 hourly, Febrile Morbidity is defined as 38°C on 2 occasions 4 hours apart, excluding the first postoperative day. Patients were routinely given injectable analgesics on day 1 twice. After this, patients were given oral/injectable analgesics as per requirement and the total number of days of analgesic requirement was noted. Intraoperative blood loss and injuries, postoperative pain and mobility, blood transfusion, febrile morbidity, post operative infections, duration of hospital stay, conversion to abdominal route, re-laparotomy were recorded and the data was statistically analysed using Chi-square test and t-test and p-value was determined.

RESULTS

Table 1: Demographic And Clinical Characteristics

Characteristics	Non-descent vaginal hysterectomy (n=50)	Abdominal hysterectomy (n=50)
Age (years)	46.32	44.74
parity	3.42	2.92
Previous medial disorders	10%(n=5)	12% (n=6)
Previous surgical history	20% (n=10)	22% (n=11)

Table 2 : Indications Of Hysterectomies

Diagnosis	Non-descent vaginal hysterectomy (n=50)	Abdominal hysterectomy (n=50)
Fibroid	22	24
Adenomyosis	4	3
Chronic cervicitis	5	6
Endometrial hyperplasia/ polyp	9	8
Abnormal uterine bleeding	7	6
Cervical intraepithelial neoplasia	3	3

Table 3: Intraoperative And Postoperative Outcomes

Outcomes	Non-descent vaginal hysterectomy (n=50)	Abdominal hysterectomy (n=50)	p- value
Operation duration (mins)	41.09	62.61	<0.05
Average blood loss (ml)	121.1	267.3	<0.05
Hospital stay (days)	4.82	10.52	<0.05
Postoperative mobility (days)	3.12	4.29	<0.05
Blood transfusion (no. of units)	5	13	<0.05
Post operative wound infections	0	7	<0.05
Postoperative systemic infections	3	3	1
Febrile morbidity	4	9	<0.05

A total of 100 patients were included in the study. Fifty patients underwent vaginal hysterectomy and 50 patients underwent abdominal hysterectomy. Baseline demographic characteristics were comparable in both abdominal and vaginal hysterectomy groups. 20% (n=10) of the patients in the vaginal group had previous pelvic surgeries while 22% (n=11) of the patients in the abdominal group had history of one pelvic surgery (e.g. tubal ligation, ovarian cystectomy or laparotomy). 10% of patients in vaginal group and 12% in abdominal group had co-morbidities like hypertension, diabetes mellitus, bronchial asthma, ischemic heart disease and anemia. The Gynaecological diseases were diagnosed by pathological examination, and the results are also shown in [Table 2]. The diseases in each group were comparable. 22 out of 50 cases in vaginal group while 24 out of 50 cases in abdominal group had fibroid uterus as indication for hysterectomy which was comparable and insignificant.

None of the cases in the vaginal group were converted to abdominal route. There were no intraoperative complications such as bladder, rectum or urethra injuries or re-laparotomies in any groups. The mean duration of surgery was 41.09 minutes in the vaginal group, whereas, it was 62.61 minutes in the abdominal group, implying a significant difference ($p < 0.05$). Similarly, a significantly higher blood loss (267.3 ml) was noted in the abdominal hysterectomy group, compared to 121.1 ml in the vaginal group ($p < 0.05$). Postoperatively, the abdominal group required more analgesia in comparison to the vaginal group as measured by number of days requirement of analgesics postoperatively. The mean length of hospital stay was 10.52 days in the abdominal group while the duration was 4.82 days in the vaginal group. Mean time to postoperative mobility and mean maximum postoperative body temperature in the vaginal hysterectomy group were significantly shorter and less severe respectively than those in the abdominal group ($p < 0.05$). Significantly lesser number of patients required postoperative blood transfusion in the vaginal group (n=5) compared to the abdominal group (n=13). Significantly high postoperative wound infection rate was noted in (n=7) of patients in the abdominal group, compared to the vaginal group (n=0). However, there was no significant difference in the rates of systemic infection like respiratory tract infection, urinary tract infection, paralytic ileus

and acute gastroenteritis postoperatively in both the groups.

DISCUSSIONS

The vaginal approach for hysterectomy has been considered as mostly preferred method by gynaecological surgeon. Vaginal surgery allows the surgeon to operate in lesser time by the least invasive route of all, utilizing an anatomical orifice. Favourable factors for a Non-Descent vaginal hysterectomy are a mobile uterus with normal dimensions, large and roamy pelvis to allow manoeuvrability, single, large accessible fibroid, counselling for a tentative vaginal hysterectomy and experience. In case of uteri enlarged due to fibroids, techniques like bisection [11], myomectomy [12], wedge resection [13], slicing method [14], coring [15–17] and use of Ligasure Vessel sealing system [18], may be used either individually or in combination for successful removal of the uterus vaginally. In the absence of obvious contraindications, but with doubt concerning the route of hysterectomy, gynaecologists should consider scheduling patients for a tentative vaginal hysterectomy. In this study, statistically significant decrease in blood loss during surgery, duration of surgery, postoperative pain, time to postoperative mobility, wound infection, febrile morbidity, length of hospital stay and post operative blood transfusion was noted in the vaginal group when compared with the abdominal group.

Mistrangelo *et al.* reported that VH was safe and effective in cases of greater uterine weight or volume [19]. Guvenal *et al.* found that VH could be performed with less morbidity, even in patients with a large, immobile uterus and previous pelvic surgery [20]. Falcone *et al.* have confirmed the success of the vaginal approach in patients with these characteristics [21]. Rates of urethral and bladder injuries at the time of VH were 0.88% and 1.76%, respectively [22]. Consistent with this, in a recent large case series, the incidence of bowel injury was low in VH patients [22].

Garg *et al.*, conducted a study comparing vaginal hysterectomy with abdominal hysterectomy with 23 patients in each group and found a reduced operating time, lesser intraoperative blood loss, reduced postoperative morbidity and shorter hospital stay in the vaginal hysterectomy group [23]. Mc Cracken *et al.*, in their study concluded that intraoperative and postoperative morbidity were lesser in vaginal hysterectomy compared to abdominal hysterectomy and that vaginal hysterectomy should be the procedure of choice wherever possible [24]. Doucette and co-workers in their study on 250 patients challenged the common contra-indications to vaginal hysterectomy including large uteri, nulliparas, previous CS or laparotomies and concluded that the above mentioned factors are rarely contra-indications [25].

Nieboer *et al.*, in a systematic Cochrane review of nine RCTs in which studies by Ottosen, Benassi, Hwang, Miskry, Ribeiro, Garry, Silva Filho were included and Nasira and co-workers and Gayak *et al.*, summarized that Vaginal hysterectomy is better in terms of intraoperative and postoperative outcomes, when compared to abdominal, laparoscopic and laparoscopic assisted vaginal hysterectomies [26–35].

CONCLUSION

In this study, no intraoperative complications occurred in patients of the vaginal group, and no vaginal approach was converted to an abdominal approach. Results were comparable to other studies. All these studies indicate that VH is a safe and effective surgical treatment for benign gynaecological diseases and should be preferred over AH whenever possible, taking into account the low rate of complications and cost-effectiveness.

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