



Original Research Article

A comparative study between total abdominal hysterectomy and non-descent vaginal hysterectomy

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ARTICLE INFO

Article history:

Received 29-12-2019

Accepted 17-02-2020

Available online 15-06-2020

Keywords:

Total abdominal hysterectomy

Non descent vaginal hysterectomy

ABSTRACT

Objective: To analyze the intra operative complications, postoperative morbidities and complications between abdominal and non descent vaginal hysterectomy.

Materials and Methods: This prospective study was conducted over a period of one year in the Department of Obstetrics and Gynaecology. Out of 162 hysterectomies, 102 underwent Total abdominal hysterectomy and 60 underwent Non descent vaginal hysterectomy. Baseline characteristics, duration of surgery, intraoperative blood loss, duration of hospital stay, intra and post operative complications were recorded and compared between the two groups.

Result: Patients who underwent TAH had a mean operating time of 63.44 +/- 11.94 minutes while those who underwent NDVH had mean operating time of 54.21 mins ($p < 0.001$). The mean blood loss in the NDVH group was 86.41 +/- 17.54 ml while in TAH was 185.70 +/- 60.73 ml ($p < 0.001$). The duration of hospital stay in the TAH arm was 7.19 +/- 1.17 days, whereas in the NDVH arm was 4.06 +/- 1.10 days ($p < 0.001$). The overall complications encountered with TAH was significantly more than NDVH ($p = 0.01$), but there were no significant major complications encountered in both the groups.

Conclusion: NDVH is safe and practical as compared to TAH with decreased cost, per operative blood loss and hence no need for blood transfusion, very less per operative complications, less post operative pain and morbidity and of course no scar. The duration of hospital stay is also reduced hence economical for the patient as well.

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1. Introduction

Hysterectomy is the most common surgical procedure performed for non pregnant women, while cesarean section still remains the most common surgical procedure performed in the Obstetrics and Gynecology department.¹ The most common indication for hysterectomy are symptomatic uterine leiomyoma, abnormal uterine bleeding, endometriosis, adenomyosis and uterine prolapse. There are three main approaches to perform hysterectomy, namely, abdominal, vaginal and minimally access surgeries including laparoscopic or robotic surgeries. Vagina is the natural route to access the uterus and with good anesthesia

facility, adequate light and exposure, better suture materials and operative technique the vaginal approach to explore the uterus has gained popularity. Vaginal route offers cosmetic benefit as it leaves no disfiguring visible scar. Thorough review of literature for comparison of the risks and benefits of hysterectomy shows that vaginal approach has potential health and economic benefits of greatly reduced post-operative complications, morbidity and pain. It offers shorter hospital stay which lowers the economic burden over the patients. They return to normal day to day activities faster, as the recovery time is shorter than those undergoing abdominal surgeries.² It also offers better functional capacity and improved pain assessment. The American college of Obstetricians and Gynecologists committee opinion recommends the vaginal

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approach as the route of choice of hysterectomy for benign disease whenever feasible.³ The selection of the route of hysterectomy is mainly influenced by the factors like size and shape of uterus and vagina, accessibility to the uterus, extent of the extrauterine disease, need for concurrent procedures and the expertise of the surgeon.³

The once thought contraindications of vaginal hysterectomy like narrow pubic arch, immobile uterus, previous cesarean section, enlarged uterus can be successfully attempted by non descent vaginal hysterectomy.²

The aim of the current study was to compare Total abdominal hysterectomy (TAH) and Non-descent vaginal hysterectomy (NDVH) with respect to duration of surgery, intra and post operative complications, hospital stay in women with benign disorders.

2. Materials and Methods

This prospective case-control study was conducted in the Department of Obstetrics and Gynaecology, Bokaro General Hospital, Bokaro Steel City, Jharkhand, over a period of one year from January 2009 to January 2010. Total 162 patients requiring hysterectomy were selected randomly from the outpatient department after detailed history including patient's age, parity, weight, menstrual history and presenting complaints were noted. General, systemic and pelvic examination was performed and proforma maintained.

Those fulfilling the inclusion and exclusion criteria defined below were assigned for the study. Out of 162 patients, 102 were selected for total abdominal hysterectomy while 60 patients were assigned to the NDVH cohort.

2.1. Inclusion criteria

1. Women having benign pathology.
2. Uterus < 16 weeks size.
3. Mobile uterus.

2.2. Exclusion criteria

2.2.1. Uterine prolapse

1. Pelvic malignancy.
2. Endometriosis / pelvic adhesion.

Required pre operative investigations were performed along with ultrasonography to assess the size of fibroid and any adnexal pathology. All the patients were also explained about the conversion from NDVH to TAH if needed. Data regarding indication for surgery, duration of surgery, estimated blood loss, length of hospital stay and complications were collected and analyzed.

2.3. Statical analysis

The obtained data were checked and entered in MS Excel 13 and proceeded for analysis in SPSS version 23. The data

were analyzed statistically by calculating the descriptive and inferential statistics viz, Mean SD, frequency table, cross table, percentage for all continuous variables and the significance was tested in 95% confidence interval. The difference in mean was tested using independent sample student 't' test and ANOVA test, the measures of association between the qualitative variables were assessed using chi square test. The inference was considered statistically significant if the p value was <0.05.

3. Result

Out of total of 162 hysterectomies, 102 patients underwent total abdominal hysterectomy while 60 cases underwent NDVH. The age group of those operated by abdominal route ranged between 42 to 59 years with a mean of 50.14, while the NDVH arm aged between 40 to 53 years (mean=47.81). Parity was also comparable in both abdominal and vaginal hysterectomy groups. (Table 1).

Table 1: Baseline demographic characteristics

| Baseline characteristics | TAH (n=102) | NDVH (n=60) |
|--------------------------|----------------|----------------|
| Age (in years) | 50.14 +/- 3.32 | 47.81 +/- 2.48 |
| Parity | 2.97 | 2.38 |

The most common indication in both the arms were abnormal uterine bleeding, 82 in TAH versus 54 in NDVH group, followed by fibroid uterus (13 in TAH vs 2 in NDVH) while chronic pelvic pain (4), adenomyosis (2) and chronic cervicitis (1) were the other indications for surgery in TAH cohort while adenomyosis (2) and chronic cervicitis (2) were the remaining indications for NDVH (Table 2).

Table 2: Indications of surgeries

| Indications | TAH (n=102) | NDVH (n=60) |
|---------------------|-------------|-------------|
| AUB | 82 (80.3%) | 54 (90%) |
| Fibroid | 13 (12.7%) | 2 (3.3%) |
| Adenomyosis | 2 (1.96%) | 2 (3.3%) |
| Chronic cervicitis | 1 (0.9%) | 2 (3.3%) |
| Chronic Pelvic Pain | 4 (3.9%) | 0 (0%) |

We observed significant difference in the duration of surgery between the two groups where the mean time to perform TAH was 63.4 minutes and NDVH in 54.2 minutes (Table 3).

The mean blood loss in total abdominal hysterectomy was 185.70 ml (100 ml-300ml) and non descent vaginal hysterectomy was 86.41 ml (60-150 ml) which was significantly less in NDVH arm (Table 4).

The difference in the duration of hospital stay was significantly less with NDVH than TAH where the mean hospital stay was 7.05 days for TAH and 4.06 days for NDVH (Table 5).

Table 3: Comparison of duration of surgery (in minutes)

| Parameter | Route of surgery | Mean +/- SD | p value |
|----------------------------------|------------------|---------------|---------|
| Duration of surgery (in minutes) | TAH (n=102) | 63.44+/-11.94 | <0.001 |
| | NDVH (n=60) | 54.21+/-9.01 | |

Table 4: Comparison of Blood loss (in ml)

| Parameter | Route of surgery | Mean +/- SD | p value |
|--------------------|------------------|----------------|---------|
| Blood loss (in ml) | TAH (n=102) | 185.70+/-60.73 | <0.001 |
| | NDVH (n=60) | 86.41+/-17.54 | |

Table 5: Comparison of hospital stay (in days)

| Parameter | Route of surgery | Mean +/- SD | p value |
|-------------------------|------------------|-------------|---------|
| Hospital stay (in days) | TAH (n=102) | 7.19+/-1.17 | <0.001 |
| | NDVH (n=60) | 4.06+/-1.10 | |

Table 6: Comparison of complications

| Complications | TAH (n=102) | NDVH (n=60) | p value |
|-----------------------------|-------------|-------------|---------|
| Over all | 35 (34.3%) | 10 (16.6%) | 0.01 |
| UTI | 10 (9.8%) | 5 (8.3%) | 0.75 |
| Paralytic ileus | 6 (5.8%) | 0 (0%) | 0.01 |
| Febrile morbidity | 6 (5.8%) | 2 (3.3%) | 0.45 |
| Respiratory tract infection | 4 (3.9%) | 3 (5%) | 0.74 |
| Vault hematoma | 3 (2.9%) | 0 (0%) | 0.09 |
| Bladder injury | 2 (1.9%) | 0 (0%) | 0.17 |
| Bowel injury | 1 (0.9%) | 0 (0%) | 0.33 |
| Blood transfusion | 3 (2.9%) | 0 (0%) | 0.09 |
| Wound infection | 2 (1.9%) | 0 (0%) | 0.17 |

We observed that overall complications (Table 6) with TAH was significantly more than NDVH, where minor complication like paralytic ileus was significantly higher with TAH. Three patients developed vault hematoma necessitating blood transfusion with TAH arm while none were found with NDVH, but was statistically insignificant. Other minor complications like UTI (10), paralytic ileus (6), febrile morbidity (6) and respiratory tract infections (4) were encountered more in the TAH group but not significant. Two patients of TAH sustained bladder injury and one had bowel injury, but none detected while performing NDVH. UTI(5), RTI (3) and febrile morbidity(2) were the other minor complications seen with NDVH and no major complications were dealt after performing the same.

4. Discussion

Earlier, vaginal hysterectomies were indicated for prolapse uterus or uterine inversion, but nowadays it can be easily performed for enlarged uterus due to fibroid or adenomyosis. The techniques like bisection myomectomy, wedge resection, slicing method, coring and use of Ligature vessel sealing system, used either individually or in combination has made the per vaginal removal of uterus feasible and safe.¹ The mean age of the subjects (Table 1)

in TAH was 50.14 +/- 3.32 and 47.81 +/- 2.48 in NDVH, which is in line with the observation of Dr Suman Lata et al (2017).⁴

We observed that NDVH was less time consuming than TAH where time taken to perform NDVH was 54.21+/-9.01 and TAH was 63.44+/-11.94 (p<0.001). Rohidas P. Chavhan et al² and other studies^{4,5} have shown similar results where NDVH was performed in significantly lesser time. This result depends upon the size of the uterus, any previous pelvic surgery leading to adhesion and the experience of the operating surgeon.⁶ In our study, the amount of blood loss was comparatively more with TAH than NDVH (185.70 ml vs 86.41ml, p<0.001). Balakrishnan D et al¹ and Abrol S et al(2017)⁵ observed similar findings where the amount of blood loss was significantly less in the NDVH group. The patients were discharged from the hospital after assuring their physical stability and those who were medically fit. We observed that the NDVH arm had shorter hospital stay than TAH arm (p<0.001) indicating that those in the NDVH arm were medically fit earlier than the subjects in the TAH arm. Hence the financial burden was also considerably reduced on the patients. Rosy N et al (2017)⁷ also found similar results in their case control study of non descent vaginal hysterectomy versus total abdominal hysterectomy

conducted on one hundred and fifty patients. Alike the findings of Abrol S et al(2017),⁵ while comparing the overall complications between the two group, we found that TAH had significantly more complications than NDVH ($p=0.01$). We did not observe any major complications like bowel or bladder injury in the NDVH group while these were encountered in TAH, although statistically insignificant. Vault hematoma was encountered in three cases of TAH which further required blood transfusion, but was statistically insignificant.

In the present study, no intraoperative complications occurred in the vaginal group and also no conversion of vaginal route to abdominal approach occurred. On extensive review of literature and comparison of all the parameters with other studies, our results were comparable to other studies.^{1,2,4-7} NDVH was found to be safe and effective operative technique for benign gynaecological conditions and should be offered whenever possible, considering safety, better operative outcome and cost effectiveness.

5. Conclusion

NDVH is safe and practical procedure when compared with TAH. The decrease in the blood loss reduces the need for blood transfusion. The intraoperative complications and post operative complications are relatively less with NDVH. The shorter hospital stay reduces the economical burden over the patients. Hence, in summary, NDVH is feasible, safe and effective procedure when comparing with TAH.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Cite this article: Priyadarshini M, Hansda R. A comparative study between total abdominal hysterectomy and non-descent vaginal hysterectomy. *Indian J Obstet Gynecol Res* 2020;7(2):153-156.