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A RANDOMISED CONTROLLED TRIAL COMPARING INDWELLING BLADDER CATHETER DRAINAGE VERSUS NO CATHETER FOLLOWING NON DESCENT VAGINAL HYSTERECTOMY

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ABSTRACT A prospective, randomized study was used to assess whether the placement of an in-dwelling catheter after NDVH affects post-operative urine culture, rate of re-catheterization and febrile morbidity. We randomly assigned 60 women who underwent NDVH to two groups. The in-dwelling catheter was removed after 24 hours of operation. Data regarding post-operative morbidity were recorded and a clean voided urine specimen for urine culture was obtained at 48 hours and 2 weeks after operation. There was no statistically significant difference between two study groups with respect to demographic characteristics. There was no statistically significant difference with respect to intra-operative findings in both the study groups. Positive post-operative urine culture occurred in 11 patients on day 2 and in 3 patients two weeks after operation in group 1, compared with 9 patients on day 2 in group 2, however no patient in group 2 had positive urine culture two weeks after operation. Re-catheterization occurred in three patients of group 1. All patients in the group 2 could spontaneously void the bladder. In group 1, four patients had febrile morbidity, while in group 2 only one patient had febrile morbidity. There was no significant difference between both the groups with respect to post-operative urine culture (36.7 and 30%, p = 0.785 on day 2, 10% and 0, p = 0.237 after 2 weeks), rate of re-catheterization (10% and 0, p = 0.237) and febrile morbidity (13.3 and 3.3%, p = 0.353).: Keeping the urinary catheter for 24 h following NDVH does not offer any additional benefit.

KEYWORDS : In-dwelling catheter, NDVH

INTRODUCTION

Hysterectomy is a commonly performed major gynecological surgery.[1] The traditional vaginal and abdominal hysterectomies represent the least and most invasive techniques, respectively.[1] NDVH has been associated with decreased cost, shorter lengths of stay, and lower complication rates relative to abdominal hysterectomy and laparoscopic assisted vaginal hysterectomies.[2,3] Insertion of an indwelling urinary catheter is a routine preparatory step in hysterectomy as keeping the urinary bladder empty during the operation improves surgical field exposure and eases the different operative steps along with prevention of iatrogenic injury of the urinary bladder.[4]The placement of foley's catheter before gynecologic surgery is a standard method of practice. It has been established that urinary catheterization increases the risk of infection by 5% to 10% per day of use. At the same time, foley's catheterization is associated with an increased UTI in patients with gynecologic surgery.[5] Hence the present study is conducted to assess the potential differences in post-operative outcomes of women planned for NDVH with or without indwelling foley's catheter.

MATERIAL AND METHODS

This randomized controlled study was conducted in the Department of Obstetrics and Gynecology at Dr. Rajendra Prasad Government Medical College and Hospital, Kangra at Tanda, H.P. After taking informed consent sixty women undergoing NDVH, were recruited in the study provided they fulfill following criteria:

Inclusion Criteria

- NDVH for benign gynecological indications

Exclusion Criteria

- Pelvic inflammatory disease
- Extensive vaginal discharge
- Local vaginal or cervical infection
- Positive pre-operative urine culture
- Known history of neurological disorder
- Patient with recurrent UTI

A total of sixty women were randomized to either of the two groups:

Group 1

A total of thirty women were randomized to this group and indwelling foley's catheter was inserted for 24 hours post-operatively.

Group 2

A total of thirty women were randomized to this group and no indwelling catheter was inserted post-operatively.

Pre-operatively all the women underwent following investigations:

- Complete hemogram
- ABO Rh typing
- Fasting and post-prandial blood sugar
- Renal function tests (blood urea nitrogen, serum creatinine)
- Liver function tests (total serum bilirubin, alkaline phosphatase, lactate dehydrogenase, SGOT, SGPT)
- Thyroid function tests (if indicated)
- HIV
- HBsAg
- HCV
- Urine routine and microscopic examination
- Urine culture and sensitivity (a clean voided midstream urine specimen was obtained for culture and sensitivity at least 7 days before surgery)
- Chest X Ray
- ECG
- USG pelvic organ (uterus, bilateral adenexa and ovaries)
- Pap smear
- Dilatation and curettage or fractional curettage (if indicated)

Type of anesthesia was left to the discretion of the anesthesiologist in consultation with the patient. After preparation of the lower abdomen, vagina and perineum with povidine-iodine solution, the perineum was draped with sterile towels. Labial sutures were applied.Urinary bladder (UB) was emptied by metallic catheter. Hydrodissection was done with normal saline mixed with adrenaline 1:2,00,000 dilution.

Circular incision was given on the cervix. Anterior and posterior vaginal walls were dissected. Uterovesical fold and

pouch of douglas were opened, respectively. Bilateral uterosacral and transverse cervical ligaments were clamped, cut, ligated and transfixed. Bilateral uterine arteries were clamped, cut and ligated, uterus was bissected. Bilateral cornual structures were clamped, cut, ligated and transfixed. Uterus delivered. Internal and external McCall sutures were applied. Vagina was closed. No vaginal packing was used. Intra-operative findings were noted, including operating time and estimated blood loss.

If the patient could not void within six hours of completion of surgery or after two attempts to void, foley's catheter was inserted for 24 hours, defined as ***"re-catheterization"***.

Febrile morbidity and other post-operative complications were recorded.

A clean voided midstream urine specimen was obtained on the second post-operative day for culture and sensitivity. A second clean voided midstream urine specimen for culture and sensitivity was obtained two weeks after surgery.

"Positive urine culture" was determined by quantitative urine culture yielding $\geq 10^5$ colony forming units of an identified single uropathogen per ml.

RESULTS

Post-operative Urine Culture

36.7% (11/30) women in group 1 and 30% (9/30) women in group 2 had positive urine culture on post operative day 2 (after NDVH), while 10% (3/30) women in group 1 and no woman in group 2 had positive urine culture after 2 weeks of NDVH. There was no statistically significant difference with respect to post-operative urine culture on day 2 and after 2 weeks, with p value = 0.785 and 0.237 respectively.

Table 1: Post-operative Urine Culture Of Women After NDVH

Post-operative urine culture	Group 1 (n=30)	Group 2 (n=30)	p value
Day 2# (n)	11	9	0.785
After 2 weeks# (n)	3	-	0.237

#Data expressed as frequency

Need Of Re-catheterization

In group 1, 10% (3/30) women required re-catheterization, while no woman in group 2 required re-catheterization. There was no statistically significant difference with respect to the need of re-catheterization between both the groups, (p value = 0.237).

Febrile Morbidity

In group 1, 13.3% (4/30) women had febrile morbidity, while in group 2, 3.3% (1/30) women had febrile morbidity. There was no statistically significant difference in both groups with respect to febrile morbidity, (p value = 0.353).

Table 12: Febrile Morbidity In Study Groups

	Group 1 (n=30)	Group 2 (n=30)	p value
Fever# (n)	4	1	0.353

#Data Expressed As Frequency

DISCUSSION

Our observations show no statistically significant difference with respect to post-operative urine culture on day two and two weeks of NDVH, in both the study groups (p = 0.785 and 0.237 respectively). Foley's catheter has been found to be associated with increased chance of UTI. Urinary catheterization increases the risk of infection by 5% to 10% per day of use.

Need of re-catheterization was not statistically significant in the study groups (p = 0.237). Summitt et al.[6] and Dunn et al.[7] also had similar findings. So, on the basis of available evidence and our findings we suggest that immediate post-operative removal of foley's catheter after NDVH is not associated with increased chances of re-insertion of foley's catheter.

Febrile Morbidity

Febrile morbidity was not statistically significant in our study groups (p = 0.353). This observation is similar to that of Dunn et al.[7] (p = 0.768). Though Summitt et al.[6] reported higher febrile morbidity in foley's catheter group (p = 0.031), however UTI accounted for fever in only one women in their study. All other women had fever due to vaginal cuff cellulitis, infected vaginal haematoma and atelectasis. These complications were not seen in our study groups. Hence we can safely suggest that non insertion of foley's catheter post-operatively after NDVH is not associated with febrile morbidity.

CONCLUSION

Post-operative foley's catheter use in women undergoing NDVH offers no distinct advantage when compared with respect to symptomatic UTI, post-operative urine culture on day two and two weeks, febrile morbidity and need of re-catheterization.

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