

## Post Operative Voiding Efficacy after Anterior Colporrhaphy

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**Abstract-** The aim of this study was to determine the most effective and suitable time to remove the urinary catheter (Foley) after anterior and posterior colporrhaphy surgery. Patients who experience anterior Colporrhaphy operation for genuine stress incontinence or pelvic organ prolapsed will have post operative voiding dysfunction. These patients need postoperative drainage. One of the methods preferred for this purpose is to apply Foley Catheter, but there is no particular regimen available for the exact time of catheter removal in these patients. We have tried to find out the best time to remove Foley catheter after which the repeated Foley catheter is not required or minimized. One hundred and eighty nine patients who have been undergone Colporrhaphy have been selected randomly and divided into three groups' as 1, 2 and 4 days of catheter removal. The number of patients in each group was 62, 63 and 64 respectively. In all three groups, before removing urinary catheter, it was clamped every 4 hrs, for 3 times. After removing of Foley, the patients were guided for urination; the voiding and residual volume was measured. In the patients with an increase of residual volume, the repeated Foley requirement was increased. However, 5.6 % of the patients with residual volume of  $\leq 33$  percent and 23.9% of the patients with residual volume between 33 to 68 percent, and finally 64.8% of the patients with residual volume of  $\geq 68$  percent had repeated Foley insertion. When considering the number of days, 85, 65 and 35.7 percent of the patients needed repeated Foley after 1, 2, and 4 days of catheter removal respectively. Interestingly, in the third group ( 4 days of the catheter removal ) with residual volume of  $\leq 33$  percent the repeated Foley requirement was nil, with no increase risk of urinary infection. We suggest that the best time to remove the urinary Foley catheter after anterior and posterior Colporrhaphy is the day four.

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**Key words:** Urinary incontinence, stress; urination

### Introduction

Approximately 2.5% to 24% of the patients who experience various operations for genuine stress incontinence or pelvic organ prolapsed will have post operative voiding dysfunction, in which they need postoperative drainage for few days till the resumption of their normal voiding (1). The bladder should be catheterized and the catheter left open to drain for at least 24 hrs before voiding is attempted. There might be bleeding and edema in the perivesical tissues; sometime there is direct trauma to the bladder.

The most important point in postoperative bladder care is making sure that the bladder should be drained adequately to avoid over distention (2). There are different approaches to use either Foley catheter or suprapubic drainage to monitor their urinary efficacy after vaginal

surgery. However, most of the surgeons prefer Foley catheter.

But if patients are drained with a Foley catheter, no particular regimen is available for the exact period of time after which the catheter should be removed. On the other hand there are still no exact consequences about normal voiding after colporrhaphy surgery. However, some experts believe that the voiding of 80% of the total intervesical volume is normal, whereas, other researchers resemble empirically a post void residual volume of  $\leq 50$  milliliter (3). Due to these contradictory reports and since there is no enough report on exact efficient period for the removal of catheter after anterior Colporrhaphy surgery, we have designed a study, to find out the efficacy of catheter Foley removal at different period of time (1,2 and 4 days) depending on voiding residual volume.

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## Patients and Methods

One hundred and eighty nine patients who had undergone anterior Colporrhaphy due to pelvic organ prolapsed and stress incontinency were selected randomly and divided into three different groups of ( 1, 2 , and 4 days) . The patients who had more than one surgery at the time of Colporrhaphy were omitted. The patient's history was collected through usual professional questionnaire including demographic data, physical and clinical examination, neurological and surgical history. In all three groups, the catheter Foley were clamped every 4 hrs for 3 times to keep bladder ready for urination. Finally, before opening the Foley clamp, the catheter was removed from the bladder and the patients were guided for immediate urinary evacuations. In the meantime, the residual urine was collected and measured. The ratio of the post void residual urine volume and the total urine volume of each patient were measured.

The patients were divided in three groups according to their post void residual volume of less than 33%, between 33 to 68% and more than 68%. Repeated Foley in each group was recorded; different groups were compared with each other according to their residual volume and repeated number of Foley requirement. The statistical analysis was carried out by using a SPSS soft wear (version 12).

## Results

As shown in table, out of 189 patients, 89 (47.1%) had residual volume (RV) of less than 33% and 54 ( 28.6 %) of the patients had a RV of more than 68% and 46 (24.3%) of the patients had RV of between 33% to 68% . Repeated Foley requirement in the patients with less than 33 percent of residual volume was as low as 5.6% (5 out of 89 patients), but with an increase in residual volume the repeated Foley requirement was also increased.

The patients with more than 33 to 68 percent of RV, 23.9% (11 out of 46) required repeated Foley , but in the group with more than 68% of RV 64.8% (35 out of 54) needed repeated Foley. Moreover, the results show that 85% of the patients (n=17) after one day and 65% (n=13) after 2 days and 35.7% (n=5) after 4 days of catheter removal required repeated Foley which was significantly reduced ( $P<0.05$ ) between the groups. However, required repeated Foley in the group with less than 33% of residual volume and after 4 days of the catheter removal was nil as compared with other groups. In addition, there was no increased risk of urinary tract infection in these three groups though there was a single case of urinary infection in each group.

**Table 1.** Number and percentage of patients needs repeated Foley in 3 different group of patients (1,2,and 4 days of Foley removal)

	Number of patients	Residual vol. above 68%	Required repeated Foley	%	Residual vol. less than 33%	Re- quired repeated Foley	%	Residual vol. between 33% and 68%	Re- quired repeated Foley	%
Group I re- moval of Fo- ley after one day	62	20 (32.3%)	17	85	27	2	7.4	15	5	33.3
Group II (re- moval of Fo- ley after 2 days)	64	20 (31.25%)	13	65	33	3	9.1	11	4	36.4
Group III (removal of Foley after 4days)	63	14 (22.2%)	5	35.7	29	0	0	20	2	10
Total	189	54 (28.6%)	35 (64.8%)		89 (47.1%)	5 (5.6%)		46 (24.3%)	11 (23.9%)	

## Discussion

The results obtained in this study revealed that the longer the period of Foley catheterization (four days), the less the repeated Foley catheterization, post operative voiding complications and urinary retention. In a study demonstrated by Gandhi *et.al.* (4). more rapid return of normal voiding was reported by using Foley catheterization as compared to self catheterization. In another study (5), a duration of about 4 to 5 days of post operative bladder drainage was reported after concomitant pelvic surgery. Moreover, Bergamen and Bhatia (6) reported that the preoperative abnormal uroflowmetry did not significantly influence postoperative voiding difficulties following colporrhaphy surgery (7,8). In our study, repeated Foley in patients with less than 33% of RV after four days of catheter removal were not required also after 1 & 2 days were considerably low as compared with other groups of the patients. In the group with RV between 33% and 68% of RV, and in patients with more than 68 % of RV after four days of catheter removal, repeated Foley was significantly lower than 1 and 2 days. In general, the shorter the period of the catheter removal, the more the number of repeated Foley requirement. However, we did not understand why higher the volume of RV more the number of repeated Foley. Though, this may be due to undetected preoperative complication, or advancing age, inadequate detrusor contraction etc. (9,10). In conclusion, we conclude that the best time to remove the urinary Foley catheter is 4 days after anterior and posterior Colporrhaphy, this will lead to the reduction of the self catheterization and an increase in the number of patients who do not need repeated Foley. Therefore, the cost, pain, stress, will be less and the patients will get more satisfied.

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