



## EARLY VERSUS DELAYED REMOVAL OF URINARY FOLEY CATHETER FOLLOWING TRANSURETHRAL RESECTION OF PROSTATE- OUR INSTITUTIONAL EXPERIENCE

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### ABSTRACT

#### Introduction:

Transurethral resection of prostate(TURP) is the gold standard procedure for prostatic hyperplasia. This study will assess early catheter removal at 2nd postoperative day(POD2) as against 4th postoperative day(POD4).

#### Materials and Methods:

This study was conducted on 100 patients undergoing TURP in the Institute of Urology, Madras Medical College, from January 2017 to January 2018. Patients were randomised into two groups on basis of catheter removal on POD 2 and POD 4 post TURP.

#### Results:

Postoperative retention developed in 12% of patients in both groups. Botherome irritative symptoms developed in 10% and 12% respectively and transient urgency with urge incontinence in 6% and 8% respectively in POD2 and POD4 groups. Postvoid residual urine was 19.45ml and 18.78ml respectively in POD2 and POD4 groups. The p value for all the results was found to be insignificant.

#### Conclusion:

Early catheter removal following TURP seems to be a cost effective and safe practice.

**KEYWORDS :** TURP-Transurethral resection of prostate, Catheter removal, prostatic hyperplasia

#### Introduction:

Prostatic hyperplasia is one of the most common disease involving the prostate. Though newer modalities of treatment have come up, transurethral resection of prostate is still considered the gold standard form of surgery against which all other treatment options are compared. Lengthy hospital stay as compared to other newer modalities has been one of the factors increasing the morbidity as well as the overall cost effectiveness of the procedure [1]. Shortening the duration of postoperative catheter placement can overcome this shortfall. Traditional practices advocated catheters to remain indwelling for 3–5 days postoperatively [2].

Foley catheter kept post operatively after TURP provides a means for bladder drainage, tamponade and bladder irrigation to tackle post operative retention, bleeding and clot formation respectively.

Recently several studies have questioned this traditional practice and studies to evaluate the feasibility of early catheter removal have cropped up [3–5].

In view of this we tried to evaluate the feasibility of early catheter removal and have pitted a post operative day 2 versus a day 4 removal of foley catheter.

#### Materials and Methods:

The study was done on 100 patients with benign prostatic hyperplasia (BPH) of age 45-85 years who presented to Rajiv Gandhi Government General Hospital between January 2017 – January 2018. Patients with coexisting stricture urethra, carcinoma prostate, diabetes mellitus, CVA, simultaneous internal urethrotomy or vesicolithopathy were excluded from study. The patients were evaluated and worked up for TURP and informed consent was obtained. The patients were randomly divided into two groups. Group I included the patients in whom the catheter was removed on POD – 2 and Group – II included the patients in whom catheters were removed on POD-4.

Factors such as age, size of the prostate (sonographically), per rectal

grade of prostate,

cystoscopic grade during TURP were recorded. Standard monopolar TURP was performed for all patients. 24fr resectoscope with glycine irrigation was used. Precautions were taken to limit resection time without compromising on proper hemostasis. At the end of surgery, all patients had a 3 way 22 fr foley urethral catheter placed with saline irrigation and traction applied with thigh strapping. Post operatively the thigh strapping traction was removed on POD 1, with a loop dressing applied till the time of catheter removal. Irrigation with saline was continued till the urine cleared.

Catheter removal was done in patients with normal vital signs, without clots and acceptable character of the catheter effluent. If these were not met, catheter was retained and such patients were excluded from study. After removal of catheter, patients were observed and outcomes recorded. Parameters like uroflowmetry and PVR were recorded post-op, evaluated and compared.

#### Results :

Our study reviewed 100 patients following TURP. 6 patients (12%) in the POD-2 group and 6 patients (12%) in the POD-4 group had urinary retention following catheter removal which required re-catheterisation. These re-catheterised patients were discharged with foley catheter in situ and were followed up in outpatient with removal of the catheter at 7th post op day. No patient in the study had to be on catheter beyond this period.

There was no statistically significant increase in re-catheterisation rate between the two groups.

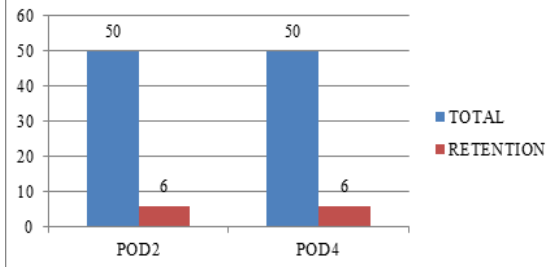
The average Postoperative PVR (post void residual urine) was 19.45 ml in the POD-2 group and 18.78 ml in the POD-4 group. There was no statistical difference. 6% of patients developed transient urgency/ urge incontinence in POD-2 group and 8% of patients in the POD-4 group. Again there was no statistical difference.

Some patients reported bothersome increased frequency after catheter

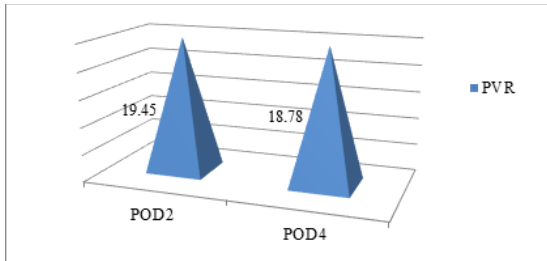
removal post- TURP. This parameter too was not reported at any higher rate in POD-2 group (10%), than the POD-4 group (12%).

A question “on a scale of 0-100, how satisfied are you with the treatment for your condition?” was asked to all patients in the study. The POD-2 group patients reported higher scores than the POD-4 group. This probably reflects to lesser patients discomfort, lesser requirements for analgesia and earlier discharge from hospital in this group.

**Figure 1: Retention after catheter removal**



**Figure 2: Average Post void residual urine**



## Discussion

Studies have shown that catheter removed at an earlier time reduces the length of hospital stay, which would be beneficial in terms of overall health care cost [1, 6]. Shorter term of catheterisation also reduces the risk of UTI associated with an indwelling catheter [7].

Transurethral resection of prostate is the most effective method for relieving bladder outlet obstruction caused by enlargement of prostate (8). The procedure cost is an important factor in management option and in choosing between surgery and other treatment options (9). Length of stay is a major factor determining cost of TURP (10), and this is invariably related to the catheter removal. Our study showed the beneficial effect of removing urinary catheter at an earlier date without affecting the patient adversely. The following data supports this as follows: 12.0% of patients in group POD 2 and 12.0% patients in group POD 4 group had urinary retention after removal of catheter requiring re-catheterisation. They were discharged on catheter and the catheter was removed at POD7. Poor contractility of the aged detrusor, caused by axonal and muscular degeneration (11), is assumed to be the primal cause, but each case has to be handled individually.

No statistical significant increase in re-catheterisation rate was observed in the POD-2 versus POD-4 group, thereby suggesting that late removal of catheter did not have any added benefit.

Following catheter removal, some patients developed transient urgency/urge incontinence.

With an occurrence of 6% in POD2 group and 8% in the POD4 group, the difference is not statistically significant. Average Post-Op PVR was 19.45ml in group POD2 and 18.78ml in the POD-4 group. This variance is not statistically significant.

Few patients reported bothersome irritative features after removal of catheter following TURP. This parameter too was not reported at any higher rate in POD-2 group than the POD-4 group.

A QOL questionnaire “on a scale of 0-100, how satisfied are you with the treatment for your condition?” was asked to all patients in the study. POD-2 group patients reported higher scores than the POD-4 group. This probably relates to lesser patients discomfort, lesser requirements for analgesia and earlier discharge from hospital in this group.

## Conclusion

The question often facing the surgeon following TURP is when to remove the urinary catheter, often requiring a fine balancing act. With a host of studies at the surgeon's disposal an increasing trend to early removal is becoming the norm. Our study conforms to this. With analysis of various parameters like post op retention, bothersome LUTS, post op PVR, we find that earlier removal of urinary catheter at POD2 as compared to POD4 is not detrimental to the patient and had a better patient satisfaction rate.

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