

## Original Research Article

DOI: <https://dx.doi.org/10.18203/2349-2902.ijssj20233681>

# A descriptive study on urethral catheter removal on 2<sup>nd</sup> versus 4<sup>th</sup> day after transurethral resection of prostate

Ravi Teja P.\*<sup>1</sup>, Kiron Krishnaprasad, Ravi Chandra K., M. Nazar

Department of Urology, GTDMCH, Alappuzha, Kerala, India

Received: 18 October 2023

Accepted: 22 November 2023

**\*Correspondence:**

Dr. Ravi Teja P.,

E-mail: Rteja1414@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** BPH refers to the benign age-related growth of the prostate. A number of treatment methods for BOO have been proposed over the years, but transurethral resection of the prostate (TURP) remains the standard by which all others may be judged. This study is intended to explore the feasibility and safety of catheter removal on day 2 after TURP as compared with 4-5th day catheter removal. Aims and objectives: To find percentage of patients who are able to void and compare duration of hospital stay in 2<sup>nd</sup> vs 4<sup>th</sup> day catheter removal after TURP.

**Methods:** It is a descriptive study on 52 patients who underwent TURP in the department of urology, GTDMCH, Alappuzha. Post operatively depending on surgeon's choice catheters are removed on 2<sup>nd</sup> /4<sup>th</sup> POD. Patients who void satisfactorily will be discharged after a 24 hour observation period.

**Results:** Mean age of study is 66.26. Patients who are able to void after catheter removal on POD 2 is 90.39% vs POD 4 is 91.18. Mean hospital stay in POD 2 is 3.87 vs POD 4 is 5.5, percentage of patients who had transient incontinence after surgery in POD 2 is 4.8 vs 5.8 in POD 4.

**Conclusions:** There is no difference in percentage of patients who are able to void in both groups. There is no difference in POD 2 and POD 4 groups in terms of complication. Whereas hospital stay reduced in POD 2 group, thus reducing cost burden to the patient and family.

**Keywords:** BPH, Transurethral resection of prostate, Catheter removal

## INTRODUCTION

Benign prostatic hyperplasia (BPH) refers to the benign growth of the prostate which develops as a strictly age-related phenomenon in nearly all men.<sup>1</sup>

A number of methods of treatment of bladder outflow obstruction have been proposed over the years, but transurethral prostatectomy remains the standard by which all others must be judged.<sup>2</sup> Open prostatectomy (OP) and monopolar TURP are still the procedures utilized by most urologists, however, laser therapy is emerging as a commonly used technique.<sup>3</sup>

The length of hospital stays of patients undergoing TURP, however, is longer. The presence of catheter for

many days increases the chances of infection, and is also a handicap for day to day activities of the patients. This also places the patient on financial loss as the long hospital stay prevents him to attend to his work.

This study is intended to explore the feasibility and safety of catheter removal on day 2 after transurethral resection of prostate as compared with the 3-4<sup>th</sup> day catheter removal.

### ***Aim and objectives***

Aim and objectives were to find out percentage of patients who are able to void urine in 2<sup>nd</sup> vs 4<sup>th</sup> day catheter removal after TURP without requiring catheterization and duration of hospital stay is compared

in 2<sup>nd</sup> vs 4<sup>th</sup> post op day catheter removal in patients after TURP.

## METHODS

It is a descriptive study for a duration of 24 months from Jan 2021 to Jan 2023 conducted at department of genitourinary surgery, TD medical college, Alappuzha. A total of 103 patients who underwent TURP in the department of genitourinary surgery, TD medical college, Alappuzha were included after obtaining consent

### Inclusion criteria

Patients had prostate volumes<80 ml as measured by pre op ultrasonography were included in study.

### Exclusion criteria

Patients with prostate cancer with channel TURP, patients with bleeding diathesis or on anticoagulant therapy, neurogenic component of bladder, co-existent stricture urethra, those who were subjected to a simultaneous endoscopic procedure like cystolithotripsy or internal urethrotomy and cases where only one lobe is resected/surgeon feels where there is incomplete resection of lobes were excluded.

Participants are allotted to 2<sup>nd</sup>/4<sup>th</sup> post op day catheter removal depending on surgeon's choice after obtaining consent. Patients who have indications for surgery will be planned for TURP. A 26 French Karl Storz continuous flow resectoscope using monopolar cautery and glycine as irrigation fluid was used with routine precautions taken to achieve maximum haemostasis without undue prolongation of resection time. After surgery, all patients will have a 3 way 20 French Foley urethral catheter placed with saline irrigation. Post operatively patients will be monitored for vital parameters, color of catheter effluent and presence of clots, depending on surgeon's choice patient catheter will be removed on 2<sup>nd</sup> /4<sup>th</sup> POD after TURP. Patients who void satisfactorily discharged after a 24 hour observation period. Factors such as patient age, the length of post-operative stay, urinary retention requiring re catheterization, hematuria requiring re catheterization, return for surgery are studied. Re catheterization for the inability to void or bleeding were

discharged with catheter, postoperative complications will be noted. All variables are evaluated and compared in the 2<sup>nd</sup> vs 4<sup>th</sup> day urethral catheter removal after the TURP.

The data entered in Microsoft excel and further statistical analyzed using statistical package for social sciences (SPSS) software version 16. The categorical variables are summarized using frequencies and proportions. The quantitative data are summarized with mean and standard deviation for normally distributed data. Data of both subgroups were compared and analyzed.

## RESULTS

### Age distribution

The age group which had maximum incidence of benign prostatic hyperplasia was 61-70 years range. This group contained 45 patients which comprised 43.6% of total patients. The youngest patient in the study was of 53 years and oldest was 82 years

**Table 1: Age distribution.**

Age (In years)	POD 2	POD 4	Total
<b>50-60</b>	12	13	25
<b>61-70</b>	25	20	45
<b>71-80</b>	14	17	31
<b>&gt;80</b>	1	1	2
<b>Total</b>	52	51	103

### Study results

The study results are tabulated as follows-47 of 52 from POD 2 arm and 45 of 51 from POD 4 arm voided after catheter removal. Those patients who were unable to void were catheterized again. Among the patients who voided after catheter removal 24 from POD 2 arm and 25 from POD 4 arm had transient irritative symptoms after catheter removal and 20 from POD 2 arm and 21 from POD 4 arm had transient incontinence after catheter removal. Mean postoperative PVR was 17.88 ml and 18.39 ml in POD 2 group and POD 4 group respectively. Mean hospital stay was 3.87 days and 5.5 days in POD 2 group and POD 4 group respectively.

**Table 2: Study results.**

Variables	POD 2, (n=52) (%)	POD 4, (n=51) (%)	P value
<b>Percentage of patients who are able to void after catheter removal</b>	47 (90.38)	45 (88.23)	0.78
<b>Percentage of patients who had retention requiring catheterization</b>	5 (9.6)	6 (11.7)	0.78
<b>Patients who had transient irritative symptoms after catheter removal</b>	24 (46.15)	25 (49.01)	0.71
<b>Patients who had transient incontinence/ urge incontinence after catheter removal</b>	20 (38.4)	21 (41.1)	0.63
<b>Mean postoperative PVR</b>	17.88	18.39	0.554
<b>Mean hospital stays in days</b>	3.87	5.5	<0.001

## DISCUSSION

This is hospital level descriptive study done in department of genitourinary surgery, govt. T. D. medical college, Alappuzha for 24 months. Study group consist of 103 patients, diagnosed as BPH who underwent TURP. In study found that there is no statistically significant difference in their baseline characteristics.

The youngest patient in the study was of 53 years and oldest was 82 years. Mean age group is similar in Gordon et al, Vedamurthy et al and our study.<sup>2,4</sup>

Percentage of patients who are able to void is 88.24% in Srinivasan et al, 100% in Chander et al, 82.5% in Gordon et al, 86-88% in Dodds et al which is comparable with our study which is 90.36%. From above studies we can conclude that percentage of patients who are able to void is similar in both groups.<sup>2,5-7</sup>

There were no significant early complications noted in our study, except for re-catheterization. Re-catheterization was needed in 9.61% patients in our study, which was comparable with 11.76% of patients in a study by Srinivasan et al, 12-14% of patients in the study by Dodds et al, and was significantly lower in comparison to 17.5% in another study by Gordon.<sup>5,7</sup> No patient in series of Chander et al required reinsertion of the catheter after removal. There were no cases of TUR syndrome or capsular perforation in our study.<sup>6</sup>

There was no significant difference among both groups with respect to transient irritative symptoms and transient incontinence/urge incontinence after catheter removal.

Average PVR in Srinivasan et al is 18.38 ml in POD 2, 19.46 ml in POD 4 which is similar to our present study.<sup>5</sup>

In study by Manjuprasad et al the mean duration of hospital stay was  $3.72 \pm 0.82$  days (POD 2) and  $5.23 \pm 1.03$  days (POD 4) and in Dodds et al it was 2.7 days (POD 2) and 5.3 days (POD 4).<sup>7,8</sup> The mean duration of hospital stay in our study was 3.87 days (POD 2) and 5.5 days (POD 4). Hence, we can conclude that early removal of the catheter and reduced lengths of hospitalization will be safe for the majority of patients.

The main limitation of this study is that it included only patients who underwent monopolar TURP but not by other methods.

## CONCLUSION

This is a descriptive study done in 103 patients, presented with benign prostatic hyperplasia who underwent TURP during period of 12 months to study regarding urethral catheter removal on 2<sup>nd</sup> vs 4<sup>th</sup> post-op day after TURP.

Youngest person in this group is 53 years oldest person in group is 82 years. Mean age of study is 66.26. Patients who are able to void after removal of catheter is similar in both groups (POD 2 and 4). There is no increased complication rate in POD 2 group than POD 4 group patients. Average PVR done after 2 weeks of surgery is identical in both group of patients. Duration of stay in hospital is shorter in POD 2 group than POD 4 group.

There is no difference in percentage of patients who are able to void in both groups. There is no difference in POD 2 and POD 4 groups in terms of complication. Whereas hospital stay reduced in POD 2 group, thus reducing cost burden to the patient and family.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. Roehrborn C, McConnell J. Etiology, pathophysiology, epidemiology and natural history of benign prostatic hyperplasia. In: Walsh P, Retik A, Vaughan E, Wein A, editors. Campbell's Urology. 8<sup>th</sup> ed. Philadelphia: Saunders. 2002;1297-336.
2. Gordon NS, Hadlow G, Knight E, Mohan P. Transurethral prostatectomy: Still the gold standard. Aus NZ J Surg. 1997;67:354-7.
3. Lee NG, Xue H, Lerner LB. Trends and attitudes in surgical management of benign prostatic hyperplasia. Can J Urol. 2012;19:6170-5.
4. Pogula V, Galeti E, Bharali M, Kanchi B. Post-operative day 2 versus post-operative day 4 foley catheter removal after trans urethral resection of prostate. Int J Adv Med. 2021;8(8):1127.
5. Srinivasan BK, Radhakrishnan R. Prospective Study on Removal of Urethral Catheter on Post Op Day 2 Vs Conventional Day 4 after TURP. J Dental Med Sci. 2015;14(5):30-32.
6. Chandler J, Vanitha V, Lal P, Ramteke VK. Transurethral resection of the prostate as catheter-free day-care surgery. Brit J Urol. 2003;92:422-5.
7. Dodds L, Lawson PS, Crosthwaite AH, Wells GR. Early catheter removal: a prospective study of 100 consecutive patients undergoing transurethral resection of prostate. Bri J Urol. 2015;75(6):755-7.
8. Manjuprasad GB, Jadhav R, Betageri S. A comparative study of early removal versus conventional practice of Foleys catheter removal after transurethral resection 53 of prostate. J Evolution Med Dent Sci. 2018;7(19):2313-6.

**Cite this article as:** Teja RP, Krishnaprasad K, Chandra RK, Nazar M. A descriptive study on urethral catheter removal on 2<sup>nd</sup> versus 4<sup>th</sup> day after transurethral resection of prostate. Int Surg J 2023;10:1971-3.