



A PROSPECTIVE STUDY OF OUTCOME OF EARLY(2nd POD) CATHETER REMOVAL IN 50 CASES OF TURP IN BPH PATIENTS

General Surgery

Dr Dinesh Prasad Professor, Department of General Surgery, SMIMER

Dr Yogesh Satani Assistant Professor, Department of General Surgery, SMIMER

Dr Girish Bochiya* 3rd year Surgery Resident, Department of General Surgery, SMIMER *Corresponding Author

ABSTRACT

Background: Transurethral resection of prostate has been reported to represent more than 30% of workload of urologist and remain dominant major procedure performed by urologist. Post operative complications are a part of it, prevention of post operative complication is as important as the surgery itself. **Aim:** To study the reduction in incidence of early and late complication in the patients of TURP in BPH in which the catheter is removed on second post-operative day. **Result:** There is significantly less early and late complications observed with improved IPSS score in post operative and follow up period. **Conclusion:** early catheter can be removed after TURP with reduction in early and late complication with maintaining the efficacy of procedure.

KEYWORDS

BPH, Prostatomegaly, TURP

INTRODUCTION

A number of method of treatment of bladder outlet obstruction have been proposed over the years, but trans urethral prostatectomy remains the gold standard by which all other must be judged.

Post-operative care of transurethral resection of prostate (TURP) includes prolonged bladder irrigation that immobilize the patients for long hours, the presence of catheter for many days increase the chance of infection, stricture formation and is also handicap for day to day activities of patients. This also places the patients on financial loss as the long hospital stay prevents him to attend to his work.

This study aimed to assess the feasibility as well as reduction in early and late complications following 2nd day catheter removal. The study outcome will be compared to published literatures.

AIM

To study the reduction in incidence of early and late complication (e.g Urinary Tract Infection, urinary incontinence, urethral Stricture, retrograde ejaculation) in the patients of TURP in BPH in which the catheter is removed on second post-operative day.

OBJECTIVES

1. To implement a better clinical practice offering the patients a more convenient therapy.
2. To find the ways of reducing the work load on healthcare personnel by terminating the therapy early, simultaneously with lesser risk of complications.

METHODOLOGY

This is a prospective study. The study was conducted over a period of 2 year from august 2019-August 2021 for 50 patient admitted at SMIMER hospital, Surat, Gujarat which is a tertiary care centre.

Inclusion Criteria

Patients with LUTS. IPSS score more than 11 with clinical and radiological evidences of BPH.

Exclusion Criteria

- 1) Patients with Stricture urethra
- 2) Patients with prostatic cancer.
- 3) Patients with coagulation disorder.

In this study 50 symptomatic patients of benign prostatic hypertrophy (BPH) attending to the department of surgery, SMIMER hospital are included with their proper written and informed consent. Once the patient is admitted they are evaluated for their symptom detail history and clinical examination is done then undergoes detail investigation like haemoglobin level, complete blood count, random blood sugar, renal function test, liver function test, serum P.S.A, urine routine and microscopic examination, ultrasound of abdomen and prostate size,

volume, post void residual volume and pre anaesthetic check up. TURP will be performed by surgeons of SMIMER hospital general surgery department by 24/26F resectoscope with routine precaution to achieve maximum haemostasis. At the end of TURP, a 20F/22F three way Foley catheter placed and bladder will be irrigated with normal saline (0.9%). Post operatively patients will be monitored for vital parameters, colour of catheter effluent and presence of clots. Patients are evaluated after removing of catheter on second Post operative day. Patients are discharged after passing urine 2-3 times successfully after catheter removal. During this period patients are watched for urinary retention, hematuria, incontinence and post void dribbling. After that regular follow-up at 7 day, 15 day, 1 month, 3 month. During each visit patient is examined for urinary tract infection, incontinence of urine, and urethral stricture, and IPSS score.

Procedure

All the patients selected for the study were fully evaluated before TURP, including an assessment of their symptoms using the IPSS symptom score, and routine investigations including renal function tests, a PSA estimate, urine analysis and culture, ultrasonography of urinary tract to estimate prostate size and post void residual volume, and for the presence of back pressure changes in the bladder and the kidneys and pre-anaesthetic check. The patients were admitted to the hospital on the previous morning of the procedure. They were advised to take an anxiolytic (diazepam) during the night. They were kept fasting for 6 hours. All patients were given spinal anesthesia 0.5% bupivacaine hydrochloride using a 25-27 gauge spinal needle at lumbar intervertebral space 2-3. Cystoscopy followed by TURP was performed using single chip camera. Throughout the procedure 1.5% weight per volume glycine was used as irrigation at a height of 60 cm above bladder level. An electrosurgical unit and standard loop electrode at a 150 W. pure cutting current setting and 45-60 W. coagulation current were used. All patients received parenteral antibiotic prophylaxis. TURP is performed with adequate removal of apical lobes, lateral lobes and bladder neck tissue ensuring widely open channel formation. One useful method to help identify significant bleeding points is to slow the irrigation input to a trickle. This allows even small bleeding points to be seen that otherwise are too quickly rinsed away by the irrigation fluid. After the completion of the resection, the resectoscope is withdrawn into the bulbous urethra so that the sphincter, verumontanum, and prostatic fossa can be observed. Some additional resection of apical tissue may be necessary.

The resectoscope is then reintroduced into the bladder and prostatic fossa to be absolutely certain that all bleeding sites have been controlled. All arterial and venous bleeders of significance are electrocoagulated, except for the venous sinuses, which cannot be controlled by cautery. Homeostasis is secured until effluent of the irrigation fluid from the bladder is totally free of any visible trace of blood. An Elik evacuator or similar device is then used to remove all the prostatic chips and large blood clots from the bladder. A 20Fr 3-way Foley catheter is kept. traction is given for 2-4hrs all the cases in study

Postoperatively the catheter is irrigated continuously with 0.9% saline solution and stopped once clear effluent is draining. The decision to remove the catheters is based on colour of the catheter effluent, absence of clots, normal vital signs and adequate urine output. Patients were discharged after 2-3 successful voiding patient is put on oral Antibiotic, for 7-14 day post operatively he is advice to avoid straining for at least 6 week to reduce chance of bleeding. Aspirin is avoid for 1 week post operatively.



Figure 1: Instruments used

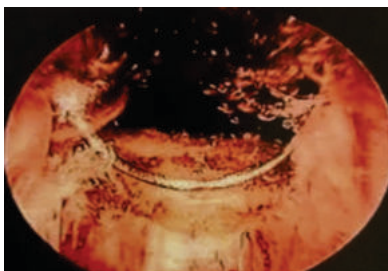


Figure 2: Resectoscope cutting prostate



Figure 3: prostatic fossa

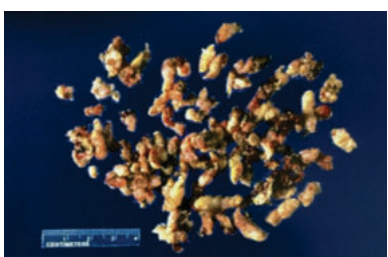


Figure 4: cut pieces of prostate

RESULT

Table No 1.

Mean age of patients	63.58 years
Mean pre-operative IPSS score	27.4/35
Mean volume of prostate	35.26cc
Mean catheter removal time	30.5 hrs
Mean hospital stay	35.68hrs
Complications	
1) Hematuria	Nil
2) Retention of urine	1
3) Urinary tract infection	1
4) Incontinence of urine	Nil
5) Urethral stricture	Nil
6) Retrograde ejaculation	Nil
Follow up	
1st month IPSS score	7.35/35
3rd month IPSS score	3.6/35

DISCUSSION

The study was conducted over a period of 2 years and following observations are recorded with comparison to published literature.

Table No 2. Comparison-mean Age

STUDY	MEAN AGE (Year)
Mebust et al (1)	69
McLoughlin et al (2)	70
Klimberg IW et al (3)	71
Present study	63.58

In our study The mean age of patients was 63.58 years, which was lower than that in previous studies. This is the demographic presentation of our area. But this may not be representative of actual disease incidence as per age, as we have selected a specific group patients.

Table No 3. Duration Of Catheterisation

Study	Mean duration of catheterisation	P value	Standard deviation	Significance
Mebust et al(1)	72h(3day)	0.0001	3.1	Significant
McLoughlin et(2)	96(4day)	0.003	2.0974	Significant
Klimberg IW et al (3)	48(2day)	0.00001	5.12	Significant
Quasi experimental study (4)	112(5day)	0.000003	1.40	Significant
Present study	30.5h(1.3day)	NA	2.4	Significant

As there was either a clear or slightly tinged effluent at end of TURP the duration of catheterisation was short at 30.5hrs (1.3 days) in 50 patients. This is comparably lower than the result in the study of TURP by Mebust et al (1), McLoughlin et al (2), Klimberg IW et al (3), Quasi experimental study (4) in which the mean duration of catheterisation was 72hrs (3day), 96hrs (4day), 48hrs (2day), 112hrs (5day) respectively. The probable reasons for having good results in form of a clear affluent postoperatively are well trained and well experienced operators, having advantage of a good setup simultaneously

Table No 4. Duration Of Hospital Stay

Study	Hospital stay in hrs & day	P value	Standard deviation	Significance
Mebust et al(1)	144hrs(6day)	0.000003	11.43	Significant
McLoughlin et(2)	130hrs(5.4 day)	0.00000001	12.434	Significant
Klimberg IW et al (3)	80 hrs (3.3 day)	0.00000001	18.342	Significant
Quasi experimental study (4)	202 hrs(8.4day)	0.00000002	19.329	Significant
Present study	36 hrs(1.5day)	NA	2.1	Significant

The mean hospital stay was 36hrs with 49 patients discharge within 48 hr of surgery. One of our patient was discharged after 48hr as he was recatheterised due to inability to void following catheter removal. In various previous studies mean hospital stay was 3.3-8.4 day.

Table No 5. Early Complications: Retention Of Urine

Study	Retention of urine	P-value (T-test)	Standard deviation	Significance
Chander et al(5)	0%	NA		
Gordon NSI (6)	17.5%	0.00004	11.1254	Significant
Dodds et al (7)	12-14%	0.000032	9.3254	Significant
Present study	2%	NA	0.1414	

The were no significant early complication except for 1 patient who developed retention of urine after catheter removal for that recatheterisation was done (2%).

The predominant complication in previous studies was re insertion of catheter which was reported 17.5% of patients in Gordon NSK(6)

study, and 12% - 14% patients in Dodds et al (7) study. No patients in Chander et al (5) study required reinsertion of catheter after removal.

Table No 6. Early Complications: Urinary Tract Infection:

Study	Urinary tract infection Urine culture positive	P-value (T-test)	Standard deviation	Significance
Quasi experimental study (4)	12%	0.0001	11.342	Significant
Present study	2%	NA	0.1414	

In present study only 1 patient (2%) out of 50 developed urinary tract infection which show positive urine culture for microorganism with colony count more than 1 lakh that was managed by antibiotics. Which is very much less as compared with Quasi experimental study (4) in which total 12% rate of urinary tract infection reported in study.

Table No 7. Late Complication : Urethral Stricture

Study	Urethral stricture	P value (t-test)	Standard deviation	Significance
Muzzonigro et al (9)	1.8%	0.002	9.235	Significant
Venrooij GE et al (10)	2.27%	0.001	10.236	Significant
Present study (early catheter removal)	0	NA		

No patients in present study developed a late complication like urethral stricture. Muzzonigro et al (9) reported a 1.8% stricture rate after TURP and Venrooij GE et al (10) reported a 2.27% stricture rate after TURP. Late complication of TURP like urethral stricture and bladder neck stenosis are also reduced due to early catheter removal.

No patients in present study developed retrograde ejaculation, erectile dysfunction, bladder neck stenosis.

Table No 8. Follow-up : Ipss Score

Study	1 month IPSS score	3 month IPSS score
Muzzonigro et al (9)	11/35	7/35
Present study	7.35/35	3.6/35

Patients were followed up on 1st month and 3rd month after surgery. IPSS Score improved from 27.4/35 pre-operatively to 7.35 at 1st month and 3.6 at 3rd month which is comparable to study by Muzzonigro et al (9), 11 at 1st month and 7 at 3rd month.

CONCLUSION

Early catheter removal had a dramatic impact on hospital stay. Surgeon can be reassured that early catheter can be removed after TURP with reduction in early and late complication with maintaining the efficacy of procedure.

Acknowledgments

Author would like to thank to Dr. Jitendra Darshan (HOD general surgery, SMIMER) for guidance and general support.

Funding: No funding sources

Conflict of interest: None declared

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

REFERENCES

1. Mebust WK, Holtgrewe HL, Cockett AT, Peters PC. Transurethral prostatectomy. Immediate and postoperative complications. A Cooperative Group study of 13 participating institutions evaluating 3885 patients. J Urol 1989; 141: 243-7
2. McLoughlin MG, Kinahan TJ. Transurethral resection of the prostate in the outpatient setting. J Urol 1990; 143: 951-2.
3. Klimberg IW, Locke DR, Leonard E, Madore R, Klimberg SR. Outpatient transurethral resection of the prostate at a urological ambulatory center. J Urol 1994; 151: 1547-9.
4. Quasi experimental study, Dr. Shafique-Ur-Rehman Memon
5. J. Chander, V. Vanitha, P. Lal and V.K. Ramteke: Transurethral resection of the prostate as catheter-free day-care surgery. Brit. J. Urol., 92: 422-425.
6. Gordon NSI. Catheter-free same day surgery transurethral resection of the prostate. J Urol 1998; 160: 1709-12.
7. Dodds L, Lawson PO, Crosthwaite AH, Wells GR. Early catheter removal. A prospective study of 100 consecutive patients undergoing transurethral resection of the prostate. Br J Urol 1995; 75: 755-7.
8. Barford JMT, Coates ARM. The pathogenesis of catheter-associated urinary tract infection. J Infection prevention 2009; 10(2): 50-6.

9. Giovanni Muzzonigro, Giulio Milanese, Daniele Minardi, Mammoud Yehia, Andrea Benedetto Galosi and Marco Dellabella: Safety and efficacy of transurethral resection of Prostate glands up to 150 ml: A Prospective Comparative Study with 1 year of follow up. J Urol August 2004; 172, 611-615
10. Ger E. P. M. van Venrooij, Harm H. E. Van Melick, Mardy D. Eckhardt and Tom A. Boon: Correlations of urodynamic changes with changes in Symptoms and well-being after transurethral resection of the prostate. J Urol. August 2002, 168, 605-609.