

Comparison of Complications Rate between Delayed Catheter Removal and Early Catheter Removal in Patients Undergone TURP

QADEER AHMED TARIQ¹, MUHAMMAD ASIF², MUHAMMAD ASAD QADEER³, KHALID KHAN⁴, NISAR AHMAD⁵

¹Associate Professor Urology, Sahiwal Medical College and Teaching Hospital, Sahiwal

²Assistant Professor Urology, D.G Khan Medical College, D.G Khan

³MBBS, CMH Multan Institute of Medical Sciences (CIMS)

⁴Assistant Professor Urology, Sahiwal Medical College and Teaching Hospital, Sahiwal

⁵Associate Professor, Department of Urology, Sahiwal Medical College Sahiwal

Correspondence to Dr. Qadeer Ahmed Tariq, Cell: 03006330538, Email: drqadeerch@gmail.com

ABSTRACT

Aim: To compare the complications rate between delayed catheter removal and early catheter removal in TURP.

Methods: This randomized controlled trial was conducted at Department of Urology, Sahiwal Medical College, Sahiwal from February 2019 to December 2019 over the period of 10 months. Total 144 patients with obstruction of bladder outflow due to benign prostatic enlargement having age 65-85 years were selected. At 6th day after TURP, catheter was removed from patients of group A and at 2nd day from patients of group B. Post-operative complications were compared between the both study groups.

Results: In present study total 144 patients were selected and TURP was performed. Mean age of patients was 83.62 ± 8.21 years, mean age of patients of group A and B was 84.25 ± 7.95 years and 82.99 ± 8.47 years respectively. Mean resected prostate tissue weight in Group-A and Group B was 45.83 ± 8.25 grams and 44.13 ± 6.58 grams respectively. Mean duration of resection was 52.35 ± 11.31 minutes. Complication was found in 30 (41.67%) patients of group A while in 18 (25%) patients of group B. Significantly higher rate of complications was noted in group A as compared to group B with p value 0.034.

Conclusion: Results of this study showed that most of the patients belonged to 8th decade of life. Higher rate of complications was observed. Significantly higher rate of complications was observed in delayed catheter removal group as compared to early catheter removal group. Re-catheterization, UTI and clot retention was the most common complications observed.

Keywords: Complications, UTI, prostate, TURP, BPH

INTRODUCTION

Older men commonly suffer from Benign prostatic hyperplasia (BPH)¹. Hydronephrosis is additional problem that bothers the doctor resulting from obstructive uropathy which is a greater concern with further morbid problem.² Irritative and obstructive symptoms which involves urethra, prostate, bladder and urinary sphincter are belonged to group of lower urinary tract symptoms (LUTS)¹. Obstructive symptoms result from impaired detrusor contractility and increased urethral resistance, whereas irritative symptoms are due to detrusor instability or decreased compliance³. The baseline assessment for the LUTS showed by men is recommended to be scored by IPSS (The International Prostate Symptom Score)⁴. Transurethral resection of the prostate (TURP) is gold standard for the management of lower urinary tract symptoms due to benign prostatic hyperplasia (BPH) after failure of medical management.⁵ Bipolar and monopolar are surgical methods of TURP which are less invasive⁶. Prevention from clot retention and haemorrhage after TURP, catheter indwelling and bladder irrigation are the routinely performed procedures⁷. Urologists usually choose to remove the catheter and conduct a trial of voiding for patients when they are discharged⁸. Long-term indwelling catheter is associated with higher rates of urinary tract infection (UTI), longer hospital stays and higher cost of

treatment⁹. Early catheter removal and discharge from hospital also benefit the patients¹⁰.

Present study is planned to compare the complications between delayed catheter removal and early catheter removal in cases undergone TURP. Results of this study may help us to choose the best treatment option with less complications. We may be able to reduce the morbidity related to it.

MATERIAL AND METHODS

This randomized controlled trial was conducted at Department of Urology, Sahiwal Medical College, Sahiwal from February 2019 to December 2019 over the period of 10 months. Total 144 patients with obstruction of bladder outflow due to benign prostatic enlargement having age 65-85 years were selected. Patients with large post void urine volume, urethral stricture, patients with diabetes mellitus, patients with problem of spinal cord, cerebro-vascular accident or any condition that might result in neurogenic urinary bladder were excluded from the study.

Selected patients were randomly divided into two equal groups i.e. group A and B. At 6th day after TURP, catheter was removed from patients of group A and at 2nd day from patients of group B. Physical examination and International Prostate Symptom Severity Score (IPSS) scoring of all the selected patients was done. Base line investigations was done, echocardiography, chest x-ray and ECG was done. Abdomen ultrasound was also

Received on 26-02-2020

Accepted on 16-06-2020

done. Trans-abdominal ultrasonography was done to calculate prostatic volume.

TURP was performed under spinal anaesthesia and third generation cephalosporin injection was administered intravenously at the time of induction of anaesthesia.

TURP was performed using continuous irrigation resectoscope, tungsten cutting loop and roller ball were used. Glycine solution was used during resection. Three way 22 Fr catheter was inserted at the end of the procedure and continuous bladder irrigation was started with normal saline. Traction was not applied in any case. Bladder irrigation was continued until the effluent was light pink in colour. The operative time was noted from the time of insertion of resectoscope to the insertion of catheter.

In group A, catheter was removed at 6th post operative day if patient void successfully. In group B, catheter was removed at 2nd post operative day (if the patients were stable with clear bladder wash and no clot retention) and patient was discharged if he could void urine normally.

Weight of resected prostatic tissue and duration of surgery was noted. After 6 weeks, all the patients were assessed for post operative complications. Findings were noted on pre-designed proforma along with demographic profile of the patients.

RESULTS

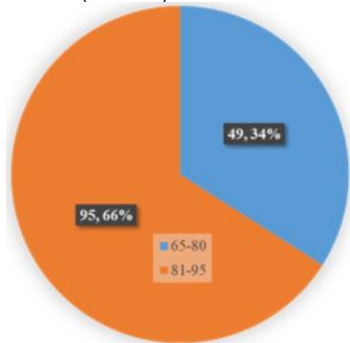
In present study total 144 patients were selected and TURP was performed. Mean age of patients was 83.62 ± 8.21 years, mean age of patients of group A and B was 84.25 ± 7.95 years and 82.99 ± 8.47 years respectively.

Mean resected prostate tissue weight in Group-A and Group B was 45.83 ± 8.25 grams and 44.13 ± 6.58 grams respectively. Mean duration of resection was 52.35 ± 11.31 minutes. Blood transfusion during peri-operative period was required in 10 patients.

Patients were divided into two age groups i.e. age group 65-80 years and age group 81-95 years. total 49 (34%) patients belonged to age group 65-80 years and 95 (66%) patients belonged to age group 81-95 years. (Fig. 1)

After 6 weeks follow up, out of 144 patients, complications was found in 48 (33%) patients. (Fig. 2) Complication was found in 30 (41.67%) patients of group A while in 18 (25%) patients of group B. Significantly higher rate of complications was noted in group A as compared to group B with p value 0.034. (Table 1)

Fig. 1: Age distribution (N = 144)



Re-catheterization was required in 8 (26.67%) patients of group A while in 4 (22.22%) patients of group B. Urinary tract infection was noted in 4 (13.33%) and 3 (16.67%) patients of group A and B respectively. Epididymoorchitis was found in 2 (6.67%) patients of group A and in 1 (5.56%) patients of group B. Clot retention was found in 6 (20%) patients of group A while in 3 (16.67%) patients of group B. Dilutional hyponatremia was noted in 2 (6.67%) patients and 1 (5.56%) patients of group A and B respectively. Total 4 (13.33%) patients of group A and 3 (16.67%) patients of group B found with Haemorrhage. Re-admission was required in 2 (6.67%) patients of group A and 1 (5.56%) patients of group B. Re-operation was done in 2 (6.67%) patients of group A while in 1 (5.56%) patients of group B. (Table 2)

Fig. 2: Frequency of complications (n = 144)

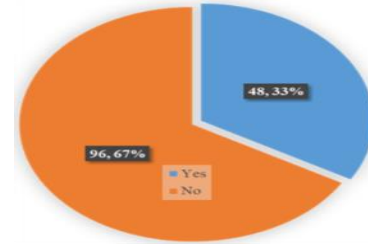


Table 1: Comparison of complication rate between both groups

Group	Complication		Total	P value
	Yes	No		
A	30 (41.67%)	42 (58.33%)	72	0.034
B	18 (25%)	54 (75%)	72	
Total	48 (33.33%)	96 (66.67%)	144	

Table 2: Complications of both groups

Post operative complications	Group A (%)	Group B (%)
Re-catheterization	8 (26.67%)	4 (22.22%)
Urinary tract infection	4 (13.33%)	3 (16.67%)
Epididymoorchitis	2 (6.67%)	1 (5.56%)
Clot retention	6 (20%)	3 (16.67%)
Dilutional hyponatremia	2 (6.67%)	1 (5.56%)
Haemorrhage	4 (13.33%)	3 (16.67%)
Atrial fibrillation and CCF	0	1 (5.56%)
Re-admission	2 (6.67%)	1 (5.56%)
Re-operation	2 (6.67%)	1 (5.56%)
Total	30	18

DISCUSSION

Old age patients quite often suffer from symptoms of enlarged prostate. Various modalities of treatment like conservative (watchful waiting, medical therapy) and invasive (minimally invasive treatment, TURP, open surgery) are available for BPH. For elderly patients, TURP has been considered as a gold standard therapy for LUTS resulting from Benign Prostatic Obstruction and Benign Prostatic Enlargement¹¹.

In present study mean age of the patients of BPH was 83.62 ± 8.21 years. In studies of Gordon et al¹² and Mamo GJ et al¹³, average age of patients of BPH was 68.7 years and 69.8 years respectively which is lower than our study because age range in our study was 65-95 years.

In present study, mean resected prostate tissue weight in Group-A (delayed catheter removal group) and

Group B (early catheter removal group) was 45.83±8.25 grams and 44.13±6.58 grams respectively. Mean duration of resection was 52.35±11.31 minutes. In one study by Durrani et al¹⁴, mean weight of resected prostate tissue was 46.67±9.133 grams and 45.22±7.532 grams respectively in delayed catheter removal group and early catheter removal group which is comparable with our study.

In our study re-catheterization was required in 8(26.67%) patients of group A while in 4(22.22%) patients of group B. Urinary tract infection was noted in 4(13.33%) and 3(16.67%) patients of group A and B respectively. Epididymoorchitis was found in 2 (6.67%) patients of group A and in 1 (5.56%) patients of group B. Clot retention was found in 6(20%) patients of group A while in 3 (16.67%) patients of group B. Dilutional hyponatremia was noted in 2 (6.67%) patients and 1(5.56%) patients of group A and B respectively. Total 4(13.33%) patients of group A and 3 (16.67%) patients of group B found with Haemorrhage. Re-admission was required in 2 (6.67%) patients of group A and 1 (5.56%) patients of group B. Re-operation was done in 2 (6.67%) patients of group A while in 1 (5.56%) patients of group B. In one study by Durrani et al¹⁴ re-catheterization was required in 4.7% patients of delayed catheter removal group and in 3.1% patients of early catheter removal group. UTI was noted in 1.9% patients and 0.9% patients respectively in delayed and early catheter removal groups. Clot retention was noted in 4.4% patients of delayed catheter removal group while in 2.5% patients of early catheter removal group.

In another study by Pervaiz et al,¹⁵ mean age of the patients of BPH was 66.28±9.16 years. Regarding complications, UTI was found in 6% patients of early catheter removal group while in 26% patients of delayed catheter removal group. Re-catheterization was required in total 14 patients (2 patients of early catheter removal group and 12 patients of delayed catheter removal group). In a study by Choudhury et al¹⁶ re-catheterization was required in early catheter removal group in 10% patients and in 3% patients of delayed catheter removal group. Significantly low UTI rate was noted in early catheter removal group as compared to delayed catheter removal group (6% vs 16%). In another study by Sahin et al¹⁷ re-catheterization rate was significantly high in early catheter removal group as compared to delayed catheter removal group (22.7% vs 0%). Manjuprasad et al¹ reported UTI after TURP in 8.57% patients in early catheter removal group and while in 17.4% patients delayed catheter removal group.

However, Nakagawa et al¹⁸ reported, reported high rate of (43.8%) re-catheterization in delayed catheter removal group while 2.2% patients of early catheter removal group required re-catheterization. Total 1.2% patients found with UTI of early catheter removal group as compared to 6.3% patients of delayed catheter removal group.

CONCLUSION

Results of this study showed that most of the patients belonged to 8th decade of life. Higher rate of complications was observed. Significantly higher rate of complications was observed in delayed catheter removal group as compared to early catheter removal group. Re-catheterization, UTI and

clot retention was the most common complications observed.

REFERENCES

1. Manjuprasad GB, Jadhav R, Betageri S. A comparative study of early removal versus conventional practice of Foley's catheter removal after transurethral resection of prostate. *J. Evolution Med. Dent. Sci.* 2018;7(19):2313-2316.
2. Abrams P. New words for old: lower urinary tract symptoms for "prostatism". *BMJ* 1994;308(6934):929-30
3. Najjar MS, Saldanha CL, Banday KA. Approach to urinary tract infections. *Indian journal of nephrology.* 2009 Oct;19(4):129.
4. Barry MJ, Fowler Jr FJ, O'Leary MP, Bruskewitz RC, Holtgrewe HL, Mebust WK, Cockett AT, Measurement Committee of the American Urological Association. The American Urological Association symptom index for benign prostatic hyperplasia. *The Journal of urology.* 1992 Nov 1;148(5):1549-57.
5. Nickel JC, Méndez-Probst CE, Whelan TF, Paterson RF, Razvi H. 2010 Update: Guidelines for the management of benign prostatic hyperplasia. *Canadian Urological Association Journal.* 2010 Oct;4(5):310.
6. Omar MI, Lam TB, Alexander CE, Graham J, Mamoulakis C, Imamura M, MacLennan S, Stewart F, N'dow J. Systematic review and meta-analysis of the clinical effectiveness of bipolar compared with monopolar transurethral resection of the prostate (TURP). *BJU international.* 2014 Jan;113(1):24-35.
7. Starkman JS, Santucci RA. Comparison of bipolar transurethral resection of the prostate with standard transurethral prostatectomy: shorter stay, earlier catheter removal and fewer complications. *BJU international.* 2005 Jan;95(1):69-71.
8. Yu JJ, Li Q, Zhang P, Shu B. Early catheter removal adds no significant morbidity following transurethral resection of the prostate: a systematic review and meta-analysis. *International Journal Of Clinical And Experimental Medicine.* 2018 Jan 1;11(3):1448-57.
9. Ibrahim AI, Rashid M. Comparison of local povidone-iodine antiseptics with parenteral antibacterial prophylaxis for prevention of infective complications of TURP: a prospective randomized controlled study. *European urology.* 2002 Mar 1;41(3):250-6.
10. Shum CF, Mukherjee A, Teo CP. Catheter-free discharge on first postoperative day after bipolar transurethral resection of prostate: Clinical outcomes of 100 cases. *International Journal of Urology.* 2014 Mar;21(3):313-8.
11. Starkman JS, Santucci RA. Comparison of bipolar transurethral resection of the prostate with standard transurethral prostatectomy: shorter stay, earlier catheter removal and fewer complications. *BJU international* 2005;95(1):69-71.
12. Gordon NS. Catheter-free same day surgery transurethral resection of the prostate. *J Urol* 1998;160(5):1709-12.
13. Mamo GJ, Cohen SP. Early catheter removal versus conventional practice in patients undergoing transurethral resection of prostate. *Urology* 1991;37(6):519-22.
14. Durrani SN, Khan S, urRehman A. Transurethral resection of prostate: early versus delayed removal of catheter. *Journal of Ayub Medical College Abbottabad.* 2014 Jan 1;26(1):38-41.
15. Pervaiz A, Islam S, Nasrullah F, Malik TahirMahmood Mt, Abart Joshi A et al. Comparison of Outcome of Removal of Three Way Foley's Catheter After Transurethral Resection of Prostate On 1st Versus 4th Post-Operative Day. *PJMHS* 2019;13(2):350-52.
16. Choudhury FR, Rashid M, Rumana R, Uddin AZ, Ava NN. Short Term Versus Long Term Catheterization after Urogenital Prolapse Surgery. *J Shaheed Suhrawardy Med Coll* 2012;3(2):41-3.
17. Şahin C, Kalkan M. The Effect of Catheter Removal Time Following Transurethral Resection of the Prostate on Postoperative Urinary Retention. *Eur J Gen Med* 2011;8(4):280.
18. Nakagawa T, Toguri A. Early catheter removal following transurethral prostatectomy: a study of 431 patients. *Med Principles Pract* 2006;15(2):126-30.