Proceeding S.Z.P.G.M.I vol: 15(2) 2001. pp. 81-83.

Early Catheter Removal: a Prospective Study of 100 Consecutive Patients Undergoing Transurethral Resection Of Prostate (TURP) And Bladder Neck Incision (BNI)

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SUMMARY

To determine whether early catheter removal after transurethral resection of prostate or bladder neck incision leads to early hospital discharge with no increase in complications. One hundred patients who had undergone transurethral resection of prostate (97 patients) and bladder neck incision (3 patients) had their indwelling catheter removed on the 1st day after surgery. Patients were followed up to assess the frequency and extent of postoperative complications. Seven patients (7%) were unable to void, 1 patient had UTI, one patient had clot retention and five were unable to void because of poor bladder contraction (Detrusor failure). Ninty eight patients (98%) were discharged home on the 1st postoperative day (average hospital stay 2.55 days). Two patients, who had UTI and clot retention stayed for 5 days. Removal of catheter on the 1st day after transurethral resection of prostate and bladder neck incision is safe and leads to a shorter postoperative hospital stay and considerable savings.

Key words: *Transurethral resection of prostate, Bladder neck incision, Catheter removal.*

INTRODUCTION

Benign prostatic hyperplasia (BPH) is an endemic disease in the male population, causes symptoms of urinary obstruction and other complications, and is dealt surgically with transurethral resection of prostate (TURP). With an annual rate of 379,000 TURP in the USA (1987) and a crude rate of 1538 TURP per 100,000 men.[1] It is one of the commonest surgical procedures[1,2]. It has been estimated that there is a 30% probability that an 80 year old man will undergo TURP during his lifetime[3]. The efficacy of TURP is indisputable, with a recent survey reporting that 97.4% of patients are discharged without urinary catheters and that only 18% have immediate post-operative morbidity. In the review of 3885 patients by Mebust et al, 78% patients were discharged within 5 days and 82% of the catheters were removed within 3 days of transurethral resection of prostate[4]. James et al, reviewing 709 patients undergoing TURP in 4 hospitals, found the mean length of stay to vary depending on the operating urologist, and ranged from 2.7 to 4.9 days[5]. Other authors have concluded that the mean post-operative duration of urinary drainage should be 3 days[6].

Five small series have suggested that it is possible to remove urinary catheters earlier than traditionally taught[7-11].

PATIENTS AND METHODS

Hundred patients undergoing surgery from June 2000 till December 2001, for obstructive voiding symptoms were evaluated at Urology Department of the Shaikh Zayed Hospital, Lahore, of these 97 underwent TURP and 3 bladder neck incision. Most of the patients were admitted a day before surgery and the procedures performed under spinal anaesthesia. After surgery, the bladder was irrigated continuously through a three way catheter until 06:00 hours, the next day, when the irrigation was discontinued. At 08:00 hrs the foley's catheter

was removed if the urine was light pink to clear. After 2-3 voiding, if the urine was light pink to clear patient was discharged.

Haemostasis was more meticulous with ball electrode. The patients whose urine was not light pink to clear, after stopping irrigation, catheters, were not removed and were not included in the study. Patients having diabetes mellitus, hypertension, ischemic heart disease and chronic obstructive airway disease had their fitness for surgery assessed through out-patient clinic before admission.

RESULTS

Hundred patients were included in this study (mean age 66.6 years, SD $\pm$ 7.48). Prostate size on abdominal ultrasound ranged from 18-70 gms (mean 39 gms SD $\pm$ 11.92). Preoperative (post-micturition residual urine (PMRU) varied from 20-300 mls (mean 90.4 ml, SD $\pm$ 55.5). The mean weight of prostate resected was 21.78 gm (SD $\pm$ 5.96). In the study group 8 patients (8%) had diabetes mellitus, 6 patients (6%) had hypertension, 6 patients had ischemic heart disease, 4 patients (4%) had chronic obstructive airway disease, 14 patients (14%) had urinary retention. The postoperative complications occurred in 7 patients (7%) (Table 1). One patient had UTI, one had clot retention and 5 were unable to void because of poor detrusor contractions (detrusor failure). 98 patients (98%) were discharged home on the 1st postoperative day (average hospital stay 2.55 $\pm$ 0.35 days). Two patients, who had UTI and clot retention, stayed for 5 days.

Table 1: Postoperative complication (n = 100)

Complications	*Number*	*Percent*
Detrusor failure	5	5%
UTI	1	1%
Clot retention	1	1%
Without complications	93	93%
Total	100	100.0

DISCUSSION

In this study early catheter removal (one day) did not increase morbidity and significantly reduced hospital stay when we compared it with our routine practice of catheter removal in two days. Patients unable to void had high postmicturition residual urine (PMRU) pre-operatively, so they had an element of detrusor failure from the beginning. This practice requires meticulous haemostasis after operation.

The time that the catheter is left indwelling after TURP has progressively shortened. The advantages of removing the catheter early are in regard to improved quality of life and lower rate of infection and bladder irritability symptoms. Feldstein and Benson[7] reported a series of 100 patients in whom it was planned to remove the catheters on the first day after TURP, The mean time to removal was 1.2 days but 15 patients were recatheterized for haemorrhage or retention. Mamo and Cohen reviewed a cohort of 127 patients in whom urinary catheters were removed on the first or second day after TURP, with no difference in morbidity between groups but almost 10% of patients required recatheterization[8]. Mueller et al, compared the results of 119 patients (study group), whose catheters were removed on the 1st day after surgery, with 152 patients (control group), whose catheters were removed later. Postoperative complications occurred in 5% of study group, and 6.6% of controls; a transfusion was required in 2.5% and 1.3% respectively, clot retention developed in 1.7% and 3.3% respectively and the hospital stay was reduced from 3.1 to 1.28 days, in the study group[9]. Agrawal et al, conducted a study on 83 patients, who had TURP and catheters removed within 24 hours, only 2 patients went into clot retention. Total hospital stay was 3 days in 67 patients, there was no significant complication because of early catheter removal[10]. Koh et al. randomized 59 patients into two groups, catheter removed on day 1 in 1st group and catheters removed on day 2 in 2nd group, after surgery[11]. Early catheter removal group was discharged home early (2.3 days) vs delayed removal (3.3 days) without any added complications[11].

Dodds et al. randomized their patients into two groups, one catheterized for $<$24 hours, the other catheterized $>$36-48 hours after transurethral resection of prostate. They found no difference

regarding postoperative complications[12]. Mottola et al, removed catheters within 24 hours of surgery in 25 patients. Patients were followed up by means of urine culture, urinary flow studies and ultrasound, showed that there was no significant complications[13].

The patients who had uncomplicated TURP and did not have capsular perforation, bladder neck undermining, trigonal resection, considerable haemorrhage in the recovery room and postoperative fever, can benefit from this early catheter removal.

CONCLUSION

In conclusion we recommend that catheters can be removed early after TURP in selected patients with no increase in morbidity, resulting in early discharge with considerable savings for hospital and patients.

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