

Original Article

Retrospective Review of TURP Done in One Year and Report on Postoperative Outcome.

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Abstract

To assess the short-term clinical outcome of transurethral resection of prostate (TURP) at Khwaja Yunus Ali Medical College & Hospital (KYAMCH). This is a retrospective study performed in the urology department of our hospital for a period of one year. For all patients conventional monopolar resection was performed. Glycine was used as irrigant. Usually patients were admitted 1 day before surgery. TURP was performed under spinal anesthesia. All patients received intravenous prophylactic antibiotic. In most patients we have removed indwelling catheter on 2nd postoperative day. In one year, we have performed 45 TURPs. The median age of the patient was 67.0(48-85) years. Most common indication was acute retention of urine (62.2%). Median prostatic volume was 52.3mls on transabdominal ultrasound. The median weight of resected prostatic tissue was 24.25gm (5-60 gms), with a median resection time of 63.5 min. There was no mortality. Five patients (11.1%) received blood transfusion during or immediate post operative period of TURP. No patient develop TURP syndrome, one patient developed post-TURP febrile UTI. No patient developed permanent incontinence in our study. TURP is safe and effective in reducing the symptoms and complications related to benign prostatic hyperplasia. Advances in techniques, instrumentation, surgical and perioperative management, careful selection of patients and early catheter removal policy might increase the efficiency of TURP with acceptable complication rates.

Key words: Transurethral resection of prostate (TURP), benign enlargement of prostate (BPH).

Introduction

Lower urinary tract symptoms (LUTS) are a common problem affecting older men, and prevalence of LUTS related to benign prostatic hyperplasia (BPH) increases with age, approaching 50% by age 60 years and 90% by age 85 years^{1,2}. Transurethral resection of the prostate (TURP) is the gold standard in the treatment of symptomatic BPH. By 1986, TURP accounted for over 90% of prostatectomy procedure performed in all over the world, surpassing the open technique by far in

frequency. Yet some retrospective studies have raised concerns about the safety and effectiveness of TURP^{3,4}. Up to 25% of men older than 60 years old require surgical treatment for troublesome lower urinary tract symptoms or urinary retention⁵. Despite advances in minimally invasive therapy, TURP remains the reference standard to which all other surgical therapies are compared. TURP is a safe procedure, and in the last three decades, the mortality rate has decreased substantially to 0.25% in contemporary series⁶.

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The morbidity of TURP however, has remained unchanged in the range of 15% to 18%^{7,8}. Although TURP is the gold standard surgical treatment, up to 13% of patients require blood transfusion preoperatively or postoperatively, 80% have retrograde ejaculation and up to 15% become impotent. In the longer term, 10% of patients require a further operation within 5 years and up to 5% may have bladder neck stenosis or urethral stricture. In this study, we have reviewed all the TURPs (monopolar resection) done in one year and would like to report the immediate results and outcome.

Patients and methods

This retrospective study was performed at urology department of Khwaja Yunus Ali Medical College & Hospital, Enayetpur, Sirajgonj, Bangladesh, between February 2012 to January 2013. The study included 45 men with BPH-related LUTS or complications that required TURP. The indications for TURP was acute retention of urine (ARU) with failed trial without catheter (TWOC); chronic urinary retention; BPH with complications, like recurrent UTI, recurrent haematuria, vesical calculus and severe lower urinary tract symptoms (LUTS) with post void residual volume > 100 ml or maximum urinary flow rate (Qmax) < 10 ml/sec. Patients with neurologic illness, previous prostate or urethral surgery and suspicion of prostate cancer were excluded from the study.

The latter included, men with a PSA > 4 ng/ml or a suspicious digital rectal examination for prostate (unless biopsies were negative for cancer). For the preoperative data, we have collected the International Prostate Symptom Score (IPSS), maximal flow rate (Qmax), prostate volume, bladder capacity, bladder change, intraoperative resected tissue volume, amount of irrigation fluid used and operation time, which were recorded and analysed. We also have checked serum PSA, serum creatinine and electrolytes, urine culture and Echocardiogram 2D & M Mode for evaluation of cardiac function. Most patients received 1 gm IV ceftriaxon as prophylactic antibiotic. TURP was performed under spinal anesthesia and a single urologist performed all the resections. Conventional monopolar TURP was performed using a 26F resectoscope and an electrosurgical generator (Valleylab, Boulder,CO), with glycine as irrigation fluid. Generator settings were 110 and 70 for cutting and coagulation, respectively. Detection of electrolyte imbalance by measurement of Na⁺ before the procedure and 2 and 24 hours after; and blood loss by indirect measurement through comparison

of haemoglobin levels before and 24 hours postoperatively. The TUR syndrome was considered if the concentration of serum sodium was < 130 mmol/L. The procedure was terminated by insertion of an 18 or 20 Fr tri-channel foley catheter. It was used to provide continuous irrigation with normal saline postoperatively.

Gentle traction was applied at the bladder neck in most patients for 1 to 2 hours postoperatively. In most cases continuous bladder wash out (CBWO) was kept till next morning. As the urine was clear in absence of irrigation, the catheter was removed on the second postoperative day and the patient was discharged on the same day if he could pass urine spontaneously and the PVR <100 mls on bedside ultrasound. Discharge medications were a short course of oral ciprofloxacin, mild laxative and paracetamol. All patients were seen in the outpatient department 6 weeks later to review the histology and voiding function. Results were analysed for hospital stay, need for readmission and re-catheterization, blood transfusion requirement, complications during and after TURP. Patients were assessed at baseline for safety and efficacy and at 6 weeks and 3 months' follow-up. Data were retrieved from medical records and were entered and analyzed using the Statistical package for social sciences (SPSS) for windows.

Results

We have studied 45 men with a median age of 67 years (ranges 48-85 years). The median preoperative peak flow was 7 ml/s, and the residual volume was 109 ml. Other preoperative variables are listed in Table 1.

	Median	Range
Age	67	48-85
Flow (ml/s)	7	3-18
Volume of prostate(ml) measured by transabdominal USG	52.3	22-115
Post- voidal residual urine (ml)	109	36-210
Serum prostate- specific antigen (PSA)	1.2	0.2-13
No(%) with urinary retention	37	82.2%

Table I. Preoperative measurements

Urinary retention was the most common (82.2%) indication for TURP in our study, although patients with severe voiding type of lower urinary tract syndromes

other complications related to BPH were included. (Table II).

Indications	No
Acute retention of urine (ARU) with failed trial without catheter (TWOC)	28(62.2%)
Chronic urinary retention due to BPH	09(20%)
BPH with complications, like recurrent UTI, recurrent haematuria, vesical calculus	03(6.7%)
Severe lower urinary tract symptoms (LUTS) with post void residual volume > 100 ml or maximum urinary flow rate (Qmax) <10 ml/sec	05(11.1%)
Total	45

Table-II: Indications for TURP in BPH

Size of the prostate gland in transabdominal ultrasound was large (> 60 gm) in 40% cases (Figure I).

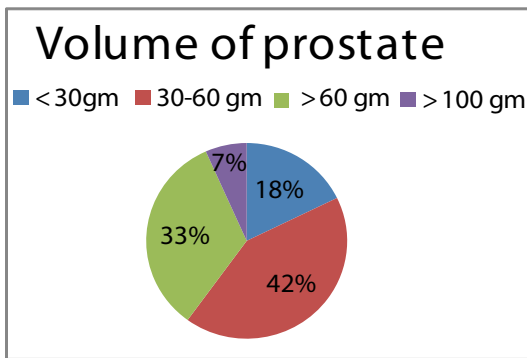


Figure I: Preoperative prostate volume

The median operating time was 63.5 min and the median weight of the removed tissue was 24.25 gm. (Table III).

Parameter	Median
Resection time (min)	63.5 (25-90)
Weight of prostate tissue resected (gm)	24.25 (5 -60)
Inflow of Glycine (L)	23 (9 -37)
Mean variation in Hb level at 24-hr follow -up(g/dl)	-1.0
Mean variation in serum Na ⁺ at 2-hr follow -up (mg/dl)	-1.3
Hospital stay (days)	3.2 (3-8)

Table III: Perioperative measurements

Median irrigation fluid requirement was 23 L of glycine. None of the patients developed the TURP syndrome and no patients have died. The mean hospital stay was 3.2 days. Our re-catheterization rate was 15.5% and most of

them had chronic retention of urine. Patients with decompensated bladder were sent home with indwelling catheter for 2 weeks and were on CISC (clean intermittent self catheterization) thereafter. Five (5) patients (11.1%) received blood transfusion during or immediate post TURP. Early post operative complications are shown in Table IV.

Complications	No of patients	% of patients
Major capsular perforation	2	4.4%
Urinary tract infection	1	2.2%
Haematuria needing manual bladder washout	2	4.4%
Recatheterization due to inability to void	7	15.5%
Temporary incontinence (> 4 weeks)	1	2.2%

Table IV. Number (%) of patients with early complications

Transient mild irritative urinary symptoms and dysuria was common (25%) and settled within a week or two in most patients. Two patients had fibrous prostate and inadvertent deep resection caused venous bleeding. Gentle catheter traction settled the problem in one patient, but other patient needed manual bladder wash out and cystodiathermy followed by catheterization for 2 weeks. The later patient developed short bulbous urethral stricture at 6 weeks' follow-up, which was managed by optical urethrotomy. One patient developed febrile UTI, although his preoperative urine culture was negative. He was treated with V Meropenem for 7days for multidrug resistant E.coli. One patient complained of stress incontinence persisting at 6 weeks' follow-up. We have advised him Kegel exercise and in last follow-up at 3 months, he was dry. 31patients (68.8%) attended our clinic at 3 months after TURP, which has included all seven patients on CISC. Most patients had benign histology (86.7%) and six patients (13.3%) had focal incidental adenocarcinoma.

Six weeks after operation	Median
Flow (Median)	23 ml/s (12 -35)
Urinary tract infection	2 (4.4%)
Urethral stricture	1 (2.2%)

Table V. Number (%) of patients with postoperative complications at 6 weeks

Discussion

Today, urologists around the world are encountering greater numbers of larger prostate glands, probably because of an initial trial of pharmacotherapy. Alpha-1 adrenoceptor blockers and 5-alpha -reductase inhibitors are of mainstay of treatment for BPH and have been shown to have a higher cost-efficiency than TURP⁹. However, the most effective treatment modality is known to be the surgical resection of prostatic adenomas, which causes obstruction. Previously, open prostatectomy was considered when the prostate gland is too large (> 75 gm) to be resected endoscopically^{10,11}.

Concomitant bladder pathologies such as bladder diverticulum, bladder stones, urethral strictures, and a patients inability to be in dorsal lithotomy position are other indications for open prostatectomy¹². Park and Chung reported that when comparing TURP with open prostatectomy, open prostatectomy renders better postoperative IPSS and a higher Qmax than TURP, a low reoperation rate due to complete excision of adenomas, which leads to wider width and symmetry of the proximal prostatic urethra¹³. However, risks of incontinence, retrograde ejaculation, perioperative haemorrhage, longer hospital stay are disadvantages of open prostatectomy. 12 In our study, 40% of the glands were > 60 gm in size and all were managed endoscopically. Despite new advances and promises in minimally invasive therapy for BPH-related LUTS, TURP remains the gold standard for surgical therapy¹⁴. Nonetheless, significant improvements in TURP technique have not often been reported, and TURP is still associated with significant morbidity^{15,16}.

The most frequent complication of conventional monopolar TURP is perioperative bleeding, which, in a significant number of cases, may necessitate blood transfusion^{17,18,19}. Five of our patients (11.1%) needed blood transfusion, although in large series, the blood transfusion rate has been reported to be 2.5 to 8.6%.^{6,17} The most dreaded complication of conventional TURP is TURP syndrome, the frequency of which varies considerably in the literature, ranging from 0.18% to 10.9%²⁰. None of our patients developed TURP syndrome. The stricture rate was 2.2%, which may not reflect the real incidence, since the follow-up was short and only 68.8% patients completed our follow-up protocol. We have always used Otis urethrotomy before proceeding with TURP, which might be associated with low stricture rates²¹. The AHCPR 5 reported a mean incidence of post-prostatectomy urethral strictures of

3.1%, which is similar to the 3.8% rate reported by Madersbacher 6 after a follow-up of 14 months. The important aspects of this study includes, the indications for TURP were urinary retention in 82.2% cases; size of the prostate was > 60 gm in 40% cases, short hospital stay of average 3.2 days, low transfusion rate (13.3%) and reasonable short term complications (13.2%). Our high re-catheterization rate (15.5%) was due to number of chronic retention patients (9) we have treated. Limitations of this study include, the population was relatively small, follow-up was short and transrectal ultrasound (TRUS) was not available for measurement of prostate size. Because of the retrospective nature of the study, we have inadequate data of IPSS score, erectile and ejaculatory function of the patients at 3 months follow-up.

Conclusion

It is a fact that almost one-third of men over the age of 50 years will develop symptoms caused by BPH. Among the several options, watchful waiting is appropriate for many men; medical therapy is effective and appreciated by both patients and physicians; however, approximately, one-fourth of men in this age group will eventually require a surgical intervention due to significant obstruction. TURP is still the therapy of choice in the management of symptomatic BPH. The incidence of blood transfusion and morbidity in patients undergoing TURP has decreased because of advances in techniques, instrumentation, and surgical and perioperative management, including anaesthesia.

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