



A STUDY ON TRANS URETHRAL RESECTION OF PROSTATE FOR SYMPTOMATIC BPH PRESENTING IN A TERTIARY CARE HOSPITAL

Urology

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ABSTRACT

Introduction: Benign prostatic hyperplasia (BPH) is a common chronic progressive disease resulting in urinary obstruction in aging men. It is a pathologic process that consists of androgen-dependent increases in the number of epithelial and stromal cells in the periurethral area of the prostate. BPH contributes to, but is not the sole cause of, lower urinary tract symptoms in aging men. Many patients require surgical treatment and presently TURP (Trans Urethral Resection of Prostate) is considered the gold standard in surgical management of BPH. **Aim:** To observe and assess the outcome of TURP being done in Narayan Medical College and Hospital Sasaram, Bihar. **Materials and Methods:** The records of patients who presented to the surgical OPD with LUTS and were assessed to undergo TURP for prostatic hyperplasia. We present our experience with series of 47 patients and can say that TURP can be used for most patients presenting with BPH in peripheral areas. **Result:** In the study period 47 TURP procedures were performed for BPH. The mean age of the cohort was 67.9 years; (ranging from 56 to 84 years). The mean prostatic volume was 44.06 grams (range 32 to 76 grams) and mean operating time was 48 minutes (range 29 to 85 minutes). Blood transfusion was required in 3 patients (6.3%). No patients required open intervention and there were no mortalities. The common complications were bleeding (12%), UTI and clot retention. **Conclusions:** TURP is not available to majority of rural population having symptomatic benign prostatic hyperplasia (BPH) due to lack of facility but remains the treatment of choice provided trained surgeons and facilities are there. The overall cost of TURP is marginally higher for an average rural patient as compared to open surgery but is worthwhile in view of its inherent minimal trauma, short hospital stays and early recovery and huge cost advantage over newer therapies like HoLEP or PVP.

KEYWORDS

Benign prostatic hyperplasia, Transurethral resection of the prostate, TURP Safety.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is a common chronic progressive disease resulting in the enlargement of the prostate gland and bladder outlet obstruction in aging men¹. With the aging of society and extension of life expectancy, more and more patients are diagnosed with massive BPH². TURP has been the gold standard in treatment of prostatic hyperplasia requiring surgery against which all the newer modalities are compared as it provides durable treatment in follow up till 22 years. Since, the introduction of medical therapy for BPH and LUTS in the 1980s, there has been a well-documented increasing trend to manage BPH by medical means using alpha blockers and 5 α ARI³. Those having persistent symptoms or who have failed trial of catheter removal were taken up for surgery. Increasingly such treatment is being provided by laser ablation of prostate using HoLEP, Green Light or TUMT. Trans Urethral resection of Prostate (TURP) remains an effective treatment for bladder outlet obstruction due to prostatic growth⁴. TURP has a steep learning curve which is better supervised by a senior person reducing the incidence of complications and need for re-intervention⁵. In this study we review our experience with TURP as an alternative to open prostatectomy in properly evaluated patients to determine its efficacy and implement in centres where vapour prostatectomy or HoLEP is not possible.

MATERIALS AND METHODS

This is a retrospective study in Narayan Medical College and Hospital Sasaram, Bihar. The medical records of patients undergoing prostatic resection in the period of April 2022 to Feb 2023 were examined and taken up for analysis. The parameters included were age, size or volume of prostate as determined by transvesical ultrasound, preoperative Haemoglobin, serum PSA levels, post operative blood transfusion requirement if needed, duration of Surgery, length of stay and immediate and late complications along with overall outcome. Informed consent was routinely obtained from all the patients for use of records for research purposes. Clearance from the ethical review board was taken for the study. Patients presenting in OPD or Rural surgical Clinics with LUTS (Lower Urinary Tract symptoms) were evaluated for the cause and patients diagnosed to have BPH were further evaluated for prostatic size, associated co-morbidities and fitness for anaesthesia and to undergo TURP in lithotomy position. Patients assessed to have prostatic size more than 100 grams, those having associated vesical calculus or undergoing open prostatectomy were not included. In total 47 patients were included in the study.

Patients were anaesthetized using 3 ml of Bupivacaine Heavy with 0.5 ml of Clonidium as sub arachnoid block given under aseptic conditions. Cystourethroscopy was done using 19 Fr Sheath with 30-degree Karl Storz cystoscope to evaluate urethra, prostate and bladder mucosa. TURP was done using 26 Fr Karl Storz sheath and resectoscope with unipolar cautery removing prostatic tissues from median and both lateral lobes till just proximal to the verumontanum using cutting current at 150 w and coagulation at 100w till capsule was barely visible. 1.5% Glycine was used as irrigating fluid at a height of about 1 metre from the patient. Glycine is readily available here, though some have use 5% dextrose or sterile water for the same [7]. 20 or 22 Fr three-way Foley's catheter was inserted and inflated till 50ml with application of traction and irrigated using normal saline till the effluent was clear for a while. The traction was removed in 8 to 24 hours and in most cases the catheter was removed on the 2nd or 3rd day and patient was discharged if he could void freely. All tissues removed were sent for histopathological examination. The data gathered was tabulated and analysed.

RESULTS:

In total 94 patients had undergone TURP for BPH. The age range varied from 56 years to 84 years with an average of 67.94 years The weight of prostate varied from 32 grams to 76 grams with an average of 44.06 grams. On cystoscopy examination or ultrasound comment 24 patients had prominent median lobe while in the others there was enlargement of bilateral lateral lobes only. At presentation 14 patients had hemoglobin level less than 12 gm% and it varied from 9 to 16 gm%. The average Hb% in the group was 13.02 gm%. In the post operative period 6 patients had to be transfused blood of which 4 patients needed 2 units of packed RBC. Complications observed in the immediate post operative period were prolonged or excessive bleeding from the prostatic bed was seen in 12 patients necessitating longer irrigation and length of stay. Breach of prostatic Capsule or tear was observed in 4 patients and in 2 cases associated with leak of irrigating fluid into the peritoneal cavity. This resolved on conservative measures only. 8 patients had clot retention or leakage along the side of Foley's in the post operative period possibly due to dislodgement of clot (8.5%) or pause in irrigation. 8 patients had UTI or dysuria in the post operative period. 2 patient (2.12%) developed retention 10 days after removal of catheter and was resolved on dilatation of urethral tract. 6 patients (6.3%) had persistent dribbling in the post operative period due to weakness of sphincters. This improved over a month in 4

patients while 2 patients had leakage till about 4 months before resolution. None of them had any persistent urinary incontinence in this series. All patients had symptomatic and subjective improvement in urination following TURP. None of the patients had TUR Syndrome or erectile dysfunction. There was no mortality in this series. Among the 94 patients taken up for surgery 24 were under treatment for hypertension and 8 more were found to have raised blood pressure during workup and were started on medication. 8 patients in this series had diabetes mellitus. 12 patients had COPD or asthma but had no complication attributed to it during the operation. 4 patients having some ECG changes had no difficulty in undergoing the operation. Catheterization time varied from 18 hours to 7 days with an average of 2.8 days. The operating time for the series was 48 minutes varying from 29 to 85 min. Mean duration of hospital stay was 3.02 days varying from 48 hours to 7 days. Blood loss was estimated to vary from 0.8 units to 3 units with average of 1.6 units with 6 patients requiring transfusion (6.3%). The summary of complications encountered is summarized in [Table-1].

Table-1: Summary of complications faced in TURP

Complications	Numbers %	Outcome
Bleeding	12 (12.7)	Transfusion
Clot retention	8 (8.5)	Bladder wash
Dribbling of urine	6 (6.3)	Resolved on conservative treatment
Urinary retention	2 (2.1)	Needed dilatation
Dysuria	8 (8.5)	Improved on antibiotics
Capsular tear	4 (4.2)	Improved

DISCUSSION:

In recent times newer technologies like HoLEP and PVP are replacing TURP as the procedure of choice as treatment of choice for BPH in patients failing medical therapy⁸. However, in deprived areas of the world open prostatectomy is still being advocated in view of its safety profile⁹. Development of a urological service with availability of TURP facilities can be achieved with proper training and planning. This requires careful patient selection, expertise accumulation and development of supporting infrastructure^{9,10}. Studies have shown increasing proportion of patient undergoing TURP in comparison to open prostatectomy¹¹. The aim of therapy is to provide effective treatment of bladder outlet obstruction with reduced lifetime risk of adverse consequences. Open prostatectomy is associated with longer hospital stays, more blood transfusion, abdominal wound infections and longer recuperation though slightly lower complication rate overall^{5,10}. TURP has significant advantages over open prostatectomy having much shorter hospital stay and comparatively lower transfusion rate lower wound dehiscence and 4% rate of reoperation¹². The increase in size of prostate is associated with increasing blood loss with an average loss of 1.6 units. In a study of complication rates following open prostatectomy Oranusi et al.,¹³ observed an overall complication rate of 40.1% with bleeding being the most common-occurring in upto 20.8% of patients besides wound infections, UTI, clot retention. Late complication rates were 2.8% with stricture being most common. In this study, 6 patients (6.3%) of patients required transfusion which is similar to that observed by Bachmann et al.,¹⁴. Al Hasan et al., had a post op transfusion rate of 0.8% for all patients where as 30% patients had needed pre operative transfusion. In our study 6.3% of patients needed transfusion with bleeding seen in 12% of patients which is quite less as compared to those seen in open surgery¹⁵. Intra and postoperative blood loss is one of the concerns TURP. Studies have compared blood loss variation with types of anaesthesia or comparison with LASER resection¹⁶. Ceylan et al., had a total complication rate of 34.6% with 20.3% early complications comparable to results seen in our study^{16,17}. With improvement in technology there has been significant reduction in complications associated with TURP with a long-term morbidity of less than 1%^{19,20}.

Increasing experience with exposure to both open and TURP for larger prostatic size allows a flexible approach for TURP in ever larger size prostate as stated by urologist who regularly operate on larger size prostate. In our study we had an upper limit of 80 grams after which open prostatectomy is preferred²¹. Some workers have found increased size of prostate with greater incidence of LUTS in such patients²². In our study 8% of patients had associated diabetes which is similar to crude prevalence rate of up to 9% as per WHO data. In an Iranian study comparing postoperative outcomes of TURP on diabetics and non-diabetics found no significant differences in prostatic volumes. TURP was found to be safe and beneficial except retreatment rates were slightly higher in diabetics²³. No such differences were seen in this

study. HoLEP is an attractive alternative to TURP and useful in larger size prostate with less blood loss and early discharge²⁴.

CONCLUSION:

This is a small observational study with 94 patients undergoing TURP with good outcomes. TURP is typically an elective procedure used to treat prostatic enlargement resulting in symptomatic bladder outlet obstruction. Because of this, appropriate indications and discussion of the complications associated with the procedure require an integrated interprofessional team to communicate effectively and initiate treatment plans so the patient and family have appropriate expectations. This approach will ensure that patients are adequately prepared for their procedure and what to expect. Patients who are better informed are more invested in their decision and are happier with their outcomes. The procedure is elective and irreversible.

REFERENCES

- Chughtai B, Forde JC, Thomas DD, Laor L, Hossack T, Woo HH, et al. Benign prostatic hyperplasia. *Nat Rev Dis Primers*. 2016;2: 16031.
- Kim EH, Larson JA, Andriole GL. Management of benign prostatic hyperplasia. *Annu Rev Med*. 2016;67:137.
- Lu-Yao GL, Barry MJ, Chang CH, Wasson JH, Wennberg JE. Transurethral resection of the prostate among medicare beneficiaries in the United States: time trends and outcomes. Prostate patient outcomes research team (PORT). *Urology*. 1994;44(5):692-98; discussion 698-99. Review. PubMed [citation] PMID: 7526526.
- Reich O, Gratzke C, Stief CG. Techniques and long-term results of surgical procedures for BPH. *Eur Urol*. 2006 ;49(6):970-78; discussion 978. Epub 2006 Feb 6. Review. PubMed [citation] PMID: 16481092.
- Cumpanas A, Botoca M, Bucuras V, Claiici D, Boiborean P, Miclea F, & Dragan P. The learning curve in transurethral resection of prostate (TURP)-The experience of eight young urologists during a six-years period. *Timisoara Medical Journal*. 2004, 54, 15963.
- Cumpanas A, Botoca M, Bucuras V, Claiici D, Boiborean P, Miclea F, & Dragan P. The learning curve in transurethral resection of prostate (TURP)-The experience of eight young urologists during a six-years period. *Timisoara Medical Journal*. 2004, 54, 15963.
- Chukwujama N. O. Oguike T. & Azike J. Transurethral resection of the prostate: a 3 year experience. *Nigerian Journal of Surgery*. 2011, 17(1), 15-18.
- Harkaway RC, Issa MM. Medical and minimally invasive therapies for the treatment of benign prostatic hyperplasia. *Prostate Cancer Prostatic Dis*. 2006;9(3):204-14.
- Namdarian B, Willder S, Steele G, Leona R, Grills R. Establishment of a urology service in a developing country: an observational study of outcomes in transurethral prostate resection procedures in Vanuatu. *Lancet*. 2015 27;385 (Suppl 2):S26. doi: 10.1016/S0140-6736(15)60821-2. Epub 2015 Apr 26.
- Kiptoon DK, Magoha GA, Owillah FA. Early postoperative outcomes of patients undergoing prostatectomy for benign prostatic hyperplasia at Kenyatta National Hospital, Nairobi. *East Afr Med J*. 2007;84(9 Suppl):S40-44.
- Ibrahim AIA, el-Malik E, Ghali AM, Murad N, Saad M. Effect of age, comorbidity and type of surgery on perioperative complications and mortality of prostatectomy. *Br J Urol*. 1995;76(3):341-45.
- Ngugi PM, Saula PW. Open simple prostatectomy and blood transfusion in Nairobi. *East Afr Med J*. 2007;84(9 Suppl):S12-23.
- Oranusi CK, Nwofor A, Oranusi IO. Complication rates of open transvesical prostatectomy according to the Clavien-Dindo classification system. *Niger J Clin Pract*. 2012;15(1):34-37. doi: 10.4103/1119-3077.94094.
- Bachmann A, Schürch L, Ruszat R, Wyler SF, Seifert HH, Müller A, et al. Photoselective vaporization (PVP) versus transurethral resection of the prostate (TURP): a prospective bi-centre study of perioperative morbidity and early functional outcome. *Eur Urol*. 2005;48(6):965-71; discussion 972. Epub 2005 Jul 18. PubMed [citation] PMID: 16126327.
- Oranusi CK, Nwofor A, Oranusi IO. Complication rates of open transvesical prostatectomy according to the Clavien-Dindo classification system. *Niger J Clin Pract*. 2012;15(1):34-37. doi: 10.4103/1119-3077.94094.
- Chukwujama N. O. Oguike T. & Azike J. Transurethral resection of the prostate: a 3 year experience. *Nigerian Journal of Surgery*. 2011, 17(1), 15-18.
- Ceylan, K. Open prostatectomy the results of a series of 320 cases in rural area. *Eur J Gen Med*. 2006;3(1): 11-15.
- Ngugi PM, Saula PW. Open simple prostatectomy and blood transfusion in Nairobi. *East Afr Med J*. 2007;84(9 Suppl):S12-23.
- Rassweiler J, Teber D, Kuntz R, Hofmann R. Complications of transurethral resection of the prostate (TURP)--incidence, management, and prevention. *Eur Urol*. 2006;50(5):969-79.
- Wendt-Nordahl G, Bucher B, Häcker A, Knoll T, Alken P, Michel MS. Improvement in mortality and morbidity in transurethral resection of the prostate over 17 years in a single center. *J Endourol*. 2007;21(9):1081-87. PubMed [citation] PMID: 17941791.
- Persu C, Georgescu D, Arabagiu I, Cauni V, Moldoveanu C, Geavlete P. TURP for BPH. How Large is Too Large? *Journal of Medicine and Life*. 2010; 3(4): 376-80.
- Stamatiou K, Lardas M, Kostakos E, Koutsosias V, Michail E. The impact of diabetes type 2 in the pathogenesis of benign prostatic hyperplasia: a review. *Adv Urol*. 2009; 818965:1-3.
- Soleimani M, Hoseini SY, Aliasgari M, Dadkhah F, Lashay A, Amini E. Long-term outcome of trans urethral prostatectomy in benign prostatic hyperplasia patients with and without diabetes mellitus. *J Pak Med Assoc*. 2010;60(2):109-12. PMID: 20209696.