

A Comparative Study of Trans Urethral Resection Versus Trans Urethral Incision for Small Size Obstructing Prostate

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ABSTRACT

Objective To compare the results of transurethral resection of prostate (TURP) with transurethral incision of prostate (TUIP) for small size obstructing prostate.

Study design Comparative study.

Place & Duration of study Department of Urology, Peoples University of Medical and Health Sciences for women Hospital Nawabshah, from 2008 to 2010.

Methodology Patients were divided in TURP and TUIP groups with fifty patients in each. Patients of any age with small size (thirty grams or less) prostate needing surgical intervention were included. TURP was done with conventional technique. In TUIP two deep incisions were made at 5 and 7'O clock positions of the bladder neck using Collings knife. Pre-per and postoperative variables were observed and recorded. All patients were followed up to six months post operatively.

Results A total of 100 patients were included in the study. Mean operative time was 12.4 minutes in TUIP and 22.6 minutes in TURP. Retrograde ejaculation and blood transfusions were less in TUIP than TURP. The improvement in maximum flow rate improved in both the groups.

Conclusion TUIP is as effective as TURP in achieving maximum flow rate but TUIP was superior in terms of shorter operative time, less retrograde ejaculation and less need of blood transfusion.

Key words Benign prostate enlargement, Transurethral incision, Trans urethral resection.

INTRODUCTION:

The term benign prostatic hyperplasia (BPH) has very different connotations to the pathologist, radiologist, urodynamicist, practicing urologist and patient. BPH to pathologist is a microscopic diagnosis.¹ BPH to practicing urologist represents a constellation of signs and lower urinary tract symptoms (LUTS) that develop in the male population in association with ageing and prostatic enlargement

presumably caused by bladder outlet obstruction (BOO). This is supported by ultrasound imaging.²

In recent years a number of new treatment options for BPH have been developed, investigated and used. These include not only medications but also minimally invasive procedures, such as visual laser ablation of the prostate (VLAP), electrovaporization of the prostate (EVP), transurethral incision of prostate and transurethral resection of prostate.³⁻⁶ Most often, these approaches are reserved for men with small to medium sized enlarged prostate gland.

In 1932 Joseph McCarthy performed the first series of transurethral resection of prostate in a manner similar to what we are doing today. Transurethral resection of prostate as a treatment modality for

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obstructing benign prostatic hyperplasia gained popularity and considered as gold standard. Transurethral resection is the treatment of choice for the prostate sized 30-80ml.⁷

Transurethral incision of prostate is an endoscopic surgical procedure which is relatively simple, quick and technically easier. Kietzer was the first to introduce endoscopic incision of bladder neck and prostate.⁸ However Orandi published first significant series on transurethral incision of prostate. Classically the patient were younger men when compared with those having a transurethral resection of prostate.⁹ This procedure was limited to the treatment of smaller prostates thirty (30) ml or less with no middle lobe.¹⁰ Transurethral incision of prostate (TUIP) found to be an effective and useful alternative to TURP in those patients who have small prostates with obstructive bladder outflow symptoms.¹¹ There is consensus that a patient, whose estimated prostate gland size is thirty grams or less, is an ideal candidate for transurethral incision of prostate.¹² In this study the results of TUIP as a treatment modality were compared with that of TURP.

METHODOLOGY:

This comparative study was conducted in the Department of Urology at Peoples Medical College and Hospital Nawabshah from 2008 to 2010. One hundred patients with lower urinary tract symptoms due to benign prostatic enlargement with clear urodynamic evidence of bladder outflow obstruction, were included in the study. Those patients who had AUA score more than 7, prostate size thirty grams or less, post voiding residual urine volume more than 70 milliliters, maximum flow rate less than 10 milliliters/second and failure to medical treatment were enrolled. Those patients who had prostate size more than 30 grams, suspected malignancy, raised PSA, neurogenic bladder, urethral stricture and other urethral diseases were excluded.

Detailed history was taken. Family and sexual history was recorded. General physical condition was assessed and DRE performed. Urine analysis, CBC, blood urea, serum creatinine, ultrasound KUB with full bladder, pre and post residual urine volume measurement and uroflowmetry were done. Formal written consent was taken from all the patients and permission from hospital ethical committee was obtained.

Patients were divided into TURP and TUIP groups with fifty patients in each. Vitals were monitored throughout the procedures. Operative time, amount of fluid used for irrigation (in liters), blood transfusion

need catheterization period and hospital stay were recorded. 5% dextrose water was used for irrigation during the procedure. In TURP group resection was done circumferentially up to anatomic capsule of the prostate, using conventional technique. In TUIP group two deep incisions at 5 and 7 O'clock positions were made, using Colling's knife. Continuous bladder wash with normal saline was done as long as washout was blood stained.

All patients were followed up at three months and six months interval. Follow-up included subjective evaluation of outcome, detailed AUA symptoms score, ultrasound for post voided residual urine, uroflowmetry for maximum flow rate, retrograde ejaculation and sexual history. All the collected data were recorded in the pre designed data collection sheets and subjected to statistical analysis SPSS version 10. T test was applied to compare mean difference between groups for variables and P-value lower than 0.01 was considered as significant. Comparison of efficiency of both procedures in relieving symptoms was recorded.

RESULTS:

One hundred patients were included in this study. Fifty patients underwent TURP and fifty patients had TUIP. There was no statistically significant difference between groups in pre-operative variables ($P > 0.1$). Preoperative data of both groups is shown in table I. Mean age was 61.24 year in TUIP group, while 61.74 year in TURP group. In TUIP survey mean prostate size was 25.5 grams while in TURP group 26.52 grams. Mean AUA total symptoms score in TUIP group was 23.50, while 24.88 in TURP group.

Mean operative time in TUIP group was 12.4 minutes while in TURP group 22.6 minutes. The mean AUA total symptom score, maximum flow rate (Q. Max) and post voiding residual volume were generally improved significantly ($P < 0.001$) after both procedures as shown in table II. Mean duration of postoperative catheter 12mm was 3.9 days in TURP group, while 2.4 days in TUIP group and mean postoperative hospital stay was 4.9 days in TURP group and 3.3 days in TUIP group (table III).

DISCUSSION:

Management of small sized obstructing prostate refractory to medical treatment remained issue of debate.¹³ The accepted treatment modality for small size obstructing prostate are transurethral incision and transurethral resection of prostate.¹¹ In this comparative study there were no statistically significant differences in most of the variables between the two groups pre operatively. However

Table I: Preoperative Variables of TURP and TUIP Groups

Preoperative variable	TURP Group	TUIP Group	P value
Age Range Mean	45-75 year 61.74 year	45-75 year 61.24 year	P>0.1
Prostate Size Range Mean	20-30 gms 26.32 gms	20-30 gms 25.5 gms	P>0.1
Total Symptom Score Range Mean	17-25 24.88	17-25 23.50	P>0.1
Uroflowmetry Q-Max Range Mean	5-9 mls/sec 6.00	5-9 mls/sec 6.93	P>0.1
Post voiding Residual Urine Volume Range Mean	80-180 mls 110.5 mls	80-180 mls 100.5 mls	P>0.1
Ejaculation Anti-grade Retrograde	50 00	50 00	No difference
Potent	50	50	No difference

Table II: Pre and Post-Operative Comparison of TURP and TUIP Variables

Variable	Pre-operative		Post-operative		P value
	TURP n=50	TUIP n=50	TURP n=50	TUIP n=50	
Total Symptom Score Range Mean	17-25 Score 24.88 Score	17-25 Score 23.50 Score	0-4 Score 2.0 Score	0-5 Score 2.4 Score	P<0.001
Uroflowmetry Q-Max Range Mean	5-9 mls/sec 6.9 mls/sec	5-9 mls/sec 6.93 mls/sec	16-20 mls/sec 18.00 mls/sec	15-20 mls/sec 17.68 mls/sec	P<0.001
Post Voiding Residual Volume Range Mean	80-180 mls 110.5 mls	80-180 mls 100.5 mls	10-35 mls 22.2 mls	10-25 mls 17.68 mls	P<0.001
Ejaculation Anti-grade Retrograde	50 patients 0 patients	50 patients 0 patients	35 patients 15 patients	48 patients 2 patients	P<0.05

there were statistically significant differences noted between the two groups in favor of TUIP procedure postoperatively. Transurethral resection of prostate which is the gold standard to compare with, is

reported to cause impotency in 3-35%, retrograde ejaculation in 50%, incontinence 1% and 20-25% are not satisfied with the outcome of the procedure.^{14,15} Transurethral incision of prostate is

Table III: Comparison of Operative and Post-operative Variable TURP and TUIP Group

Variable	TURP Group	TUIP Group	P value
Operative time Range Mean	20-25 minutes 22.6 minutes	10-15 minutes 12.4 minutes	P<0.001
Amount of irrigation fluid Range Mean	10-12 liter 10.84 liter	5-7 liter 5.96 liter	P<0.001
Duration of postoperative catheterization Range Mean	3-5 days 3.9 days	2-3 days 2.4 days	P<0.001
Hospital Stay Range Mean	4-6 days 4.9 days	3-4 days 3.3 days	P<0.001
Blood transfusion No. of Patients	15 (30%)	01 (2%)	P>0.05

good alternative to TURP due to lower rate of complications in well selected patients.¹³

In our study preoperatively there was no statistically significant difference in total symptoms score between TUIP and TURP groups. Postoperatively there was significant improvement of symptoms in both the groups (P<0.001). This is also reported in the other studies.¹⁶⁻¹⁹ The mean maximum flow rate (Q-Max) improved significantly following TURP and TUIP. The same findings were supported by others.²⁰ In our study all patients of both ungroups were sexually potent pre and post operatively. In TURP group fifteen patients while in TUIP group two patients developed retrograde ejaculation. There was significant difference between two groups. In our series mean operative time was 22.6 minutes in TURP group while 12.4 minutes in TUIP group. There was significant difference (P<0.001) between the two groups.

Mean postoperative hospital stay was 4.9 days in TURP group and 3.3 days in TUIP group. The difference is statically significant (P<0.001) and is in favor of TUIP group and is comparable with reported literature.¹⁹ The results show that TUIP is as good as TURP regarding the improvement in maximum flow rate and much superior with regards to retrograde ejaculation. It is associated with short operative time, less use of irrigation fluid, less blood loss and transfusion needs, postoperative catheterization period and hospital stay.

CONCLUSIONS:

TUIP is effective in treating small sized enlarged prostates. It is technically easy, simple and quick procedure with less morbidity. It has an important role in the management of sexually active younger patients. The disadvantage of TUIP is that, no tissue for histological examination is available. This limitation can be addressed by getting tissue through needle biopsy.

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