MEDICAL CHANNEL

Original Article

TRANSURETHRAL INCISION VERSUS TRANURETHRAL RESECTION OF PROSTATE FOR SMALL SIZED BENIGN PROSTATIC HYPERPLASIA

1. **Nazimuddin Jat**
2. **Abdul Qayyum Ghauri**
3. **Pir Bakhsh Khokhar**
4. **Muhammad Asif Qureshi**
5. **Muhammad Ahmad Azmi**

1,2,3 and 5: Isra University, Karachi Campus, Malir Karachi
4: SOM Fauji Foundation Hospital, Karachi

Correspondence:
DR. NAZIM JAT
Old Thana Gadap, Malir town, Karachi
Email: nazimjat@gmail.com
Cell: 0334-3449364

ABSTRACT:

Objective: The aim of the study was to investigate the TransurethralIncision of prostate (TUIP) and Transurethral resection of prostate (TURP) in small sized benign prostatic hyperplasia regarding their outcome and complications.
Study Design: Retrospective comparative study.
Place and duration of study: This study was conducted at Shaukat Omar Memorial (SOM) Fauji Foundation Hospital Karachi from October 1997 to December 2009.
Methodology: A total of 167 cases were included in this study. Patients were divide in two groups. Group A included 80 cases who were operated by TUIP and group B included 87cases who were operated by TURP (n=167). Patients with large prostate i.e. weight > 35 g, neurogenic bladder and urethral strictures were excluded from the study. In TUIP two (02) incisions at 5 and 7 O'clock position with Colling's knife were made and TURPs done with standard procedure. All cases were performed under spinal or epidural anaesthesia. Patients were followed till 6 months.
Results: Mean operative time was 30.8 min for TUIP and 47.3 min for TURP. The improvement in peak flow rate was significant post operatively in both groups ($p<0.001$)while there was no statistically significant difference found between the two groups regarding their peak flow rate(Q max). Retrograde ejaculation was also noted much less in TUIP group as compared to that in TURP group($p<0.05$).Other complications like Urinary tract infection, haematuria,post operativeorchitis and post TURP syndromewere not statistically significant ($p>0.05$)
Conclusion: The study suggests that both TUIP and TURP showed almost equal maximum flow rate improvement but as compared to TURP, TUIP proved to be much superior in retrograde ejaculation, so it should be considered as the treatment of choice in relatively young sexually active patients.

Key Words: Transurethral Incision, Transurethral Resection, Retrograde ejaculation, Benign Prostatic Hyperplasia

INTRODUCTION:

Benign Prostatic Hyperplasia is a disease of ageing males but quite a few patients are affected in much earlier age i.e. around forty years with typical symptoms of Benign Prostatic Hyperplasia. This is because of hormonal imbalance and genetic predisposition[1]. Symptoms are due to urinary out flow obstruction resulting in bladder hypertrophy and increased intra vesicle pressure leading to poor urinary stream and frequency of micturation. Management of benign prostatic hyperplasia ranges from expectant therapy i.e. wait and see to medical manipulation to minimal invasive surgery(TUIP&TURP) to open prostatectomy. Next to cataract extraction, surgical treatment of benign prostatic hyperplasia is the second most prevalent surgical procedure in the United States, with an estimated 400,000 transurethral resection procedures performed annually[2]. Transurethral Incision of Prostate is not a new procedure, however more modified and new technique was described by Guthrie[3] in 1834. Usually two incisions, one at 5 o'clock and the other at

7 o'clock positions are given during this procedure but in this respect instead of two incisions only one incision is also effective as reported byTurner-Warwick (1979)[4]. Endoscopic incision of prostate and bladder neck was first introduced by constructing a cold-cutting knife that fits into the universal resectoscope which made incision of the bladder neck under direct vision possible[5]. Management of small prostates is under debate these days, so in this conectionit has been reported that TUIP is as effective as TURP for prostate up to size of 30 gms[6]. This study was conducted inShaukatOmar MemorialFauji Foundation Hospital (SOMFFH) Karachi to compare the results of TUIP and TURP specially maximum flow rate (Q max) and retrograde ejaculation.

METHODOLOGY:

This is a retrospective comparative study. A total of 167 cases were included in this study. The study was conducted at SOMFauji Foundation Hospital, Karachi from the period of January 1997 to December 2009. All the cases i.e those with < 35 g which underwent Transurethral Resection or Trans urethral Incision of Prostate were included in this study. Out of these 167 cases 80 underwent TUIP and 87 underwent TURP. All investigations were reviewed from the case files of patientse.g complete blood picture, fasting and random blood sugar, electrolytes, Urea/creatinine, Prostate Specific Antigen, digital rectal examination, ECG, ultrasound prostate and X-rays KUB and Chest.Patients with bigger prostate (>35g), increased PSA level, doubtful rectal examination, urethral strictures and neurogenic bladder were excluded from this study. Patients were operated randomly by TURP or TUIP.Those who were operated by TUIP were included in group A and those who underwent TURP were included in group B. Uroflowmetry was also done pre and post operatively and patients were followed for 6 months. All these patients were operated under spinal or epidural anesthesia.TURPs were performed by the standard procedure. Circumferential incisions were made upto the anatomic capsule. In TUIP two incisions with Colling's knife at 5 and 7 o'clock positions were made starting from urethral orifice to verumontanum (Fig 1).Operative time was noted from the files. Patients were transferred after the surgery to surgical ward and continuous irrigation was done with 0.5% Glycine solution for 24 to 48 hours depending upon haematuria. Patients were discharged after the settlement of haematuriaand removal of catheter.

RESULTS:

A total of 167 patients were included in the study. Out of these TUIP was done on 80 patients (group A)while 87 patients (group B) were operated by TURP.Table 1 shows the preoperative variable in both the groups. In Group A mean age was 52.9 years while in Group B mean age was 58.6 years. Mean prostate size was 31.7 gms in Group A and 33.4 in Group B. Mean peak flow rate (Q max) during uroflowmetrywas 5.9 ml/sec in Group A and 6.3 ml/sec in Group B. Mean operation time in Group A was 30.8 min while in Group B it was 47.3 min. Table 2 shows the outcome of operations and complications noted up to 6 months of follow up. Uroflowmetry shows that the mean peak flow (Q max) after 6 months was 15.7 ml/sec in Group A and 16.1 ml/sec in Group B. The complications noted in both groups are also mentioned in the table. Total complications in Group A were noted in 26 out of 80 cases and 75 out of 87 in Group B. Repeated UTIs were observed in 8 % cases in Group A and 13% cases in Group B. Haematuria occurred 8 % in Group A and 6.1 % in Group B.

FIG 1:
Incisions at 5 and 7 o'clock positions in TUIP

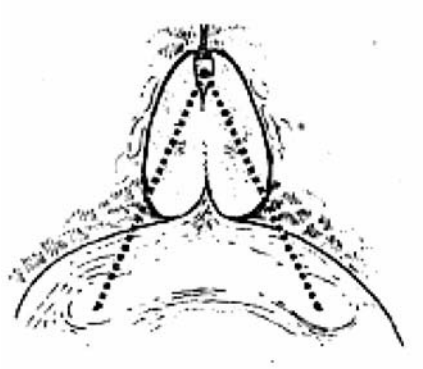


TABLE 1:
Preoperative variables of Group A and Group B

VARIABLES	Group A (TUIP)	Group B (TURP)
Age in years(mean)	52.9	58.6
Prostate size in gms (mean)	31.7	33.4
Q max ml/sec(mean)	5.9	6.3
Operation Time in min (mean)	30.8	47.3

TABLE 2:
Postoperative variables at 6 months follow up

VARIABLES	Group A (TUIP) N=80	Group B (TURP) N= 87
Q max ml/sec	15.7	16.1
UTI	10 (8%)	15 (13.0%)
Haematuria	10 (8%)	7 (6.1%)
Orchitis	1 (8.7%)	0 (0%)
Retrograde ejaculation	6 (4.8%)	51 (44.4%)
Post TURP Syndrome	0 (0%)	1 (8.7%)

Orchitis was also observed in only one case i.e. 8.7% in Group A and one case of Post TURP Syndrome in group B was noted. Retrograde ejaculation was observed in 4.8% cases in Group A while 44.4% in Group B.

DISCUSSION:

Although Trans Urethral Resection of Prostate (TURP) is considered the gold standard for the treatment of Benign Prostatic Hyperplasia[6] (BPH), other treatment modalities such as Tran Urethral Incision of Prostate(TUIP) and non operative treatments are also under consideration these days[7,8]. In this study of 167 patients 87 patients were treated with TURP while 80 patients were treated with TUIP randomly.The results of the surgery indicated that there is no statistically significant difference between the two groups in terms of improvement of symptoms. Less operative time in TUIP group is a good indication, as it gives a decreased systemic stress response[9]. The mean peak flow rate in both groups is comparable i.e.15.7

ml/sec in TUIP and 16.1ml/sec in TURP at 6 months follow upwhile pre operatively it was 5.9 ml/sec and 6.3 ml/sec respectively ($p < 0.001$ which is highly significant statistically).The difference between the two groups is statistically insignificant ($p>0.1$). The same finding is also supported by Orandi (1985)[10] These results are also congruent with other studies like GolamRobbani et al (2006)[11], Larsen et al (1987)[12], Christensen(1990)[13] andSoonawalaet al (1992)[14]. In TUIP two incisions at 5 and 7 o'clock positions are given, however John (2007)[15]has argued that a single incision is also effective. In our study there was a significant difference between the two groups regarding retrograde ejaculation. In TUIP group only 6 patients reported retrograde ejaculation while in TURP group 51 cases reported retrograde ejaculation.GolamRobbani et al(2006)[11] also reported a higher incidence of retrograde ejaculation in TURP patients in comparison to TUIP patients. Riehmann et al (1995)[7]also reports more post operative retrograde ejaculation in TURP patients. The low incidence of retrograde ejaculation with TUIP makes it suitable for patients of younger Age group[15].The mean age of the patients in TUIP group was 52.9 years while in TURP group it was 58.6 years. The mean size of the prostate in TURP group was 33.4g while in TUIP group it was 31.7 g with insignificant p value ($p>0.1$).Yang et al (1999)[16] have described a consensus that a patient with a prostate weight of 30 gms or less is an ideal candidate for TUIP.In our study post op UTI was reported in 10 out of 80 patients in TUIP group while 15 out of 87 patients in TURP group.Nadeem et al (2010)[17]also reports higher incidence of UTI in TURP group than in TUIP group.Post operative hematuria was more in TUIP group in our study i.e. 10 /80 in comparison to 7/87 in TURP group. Nadeem et al (2010)[17]further reported the same trend i.e more cases of post op hematuria in TUIP than in TURP group while GolamRobbani et al (2006)[11] show that 50% patients in TURP group required post op transfusion while 5% of TUIP group required transfusion.In our series one patient in TUIP group developed orchitis and another one patient in TURP group developed post TURP syndrome and was managed successfully.None of the patients developed any serious complication or perforation, although incision in TUIP is deep enough to reach circular fiber of the prostate capsule. On histopathology none came out to be malignant while Ahmed et al[18] mentioned 6% cases turned out to be malignant on histopathology in their series of 1200 cases. Orandi[19] has also observed that the advantage of TUIP over TURP is shorter operative duration, less blood loss and simpler post op course. These results show that TUIP is as good as TURP regarding improvement in maximum flow rate and much superior regarding retrograde ejaculation($p>0.05$) although haemturia is slightly more in TUIP.

CONCLUSION:

TUIP should be procedure of choice for small prostates in relatively young sexually active patients. It is quicker technically, simple with less morbidity and having advantage of taking the biopsy of prostate for excluding the Carcinoma of prostate.

REFERENCES:

1. Presti J.C. Neoplasm of Prostate Gland. In: TanghoEA;McAninch JW. Editors. Smith General Urology, 16th ed. Singapore:McMinn Hill:2004. p-367-86.
2. Reginald C; Bruskewitz M.D; Mads M; Christensen. The Prostate: Supplement: New Approaches in the treatment of Benign Prostatic Hyperplasia.1990;17 (S3): 27-38
3. Hedlund H; Ek A. Ejaculation and sexual function after endoscopic bladder neck incision. B J Urol. 1985; 57: 164-67.
4. Turner-Warwick R. A urodynamic review of bladder outlet obstruction in the male and its clinical implications. UrolClin North Am. 1979; 6: 171-92.
5. Riehmann M; Bruskewitz R. Transurethral Incision of the Prostate and Bladder Neck. J Androl. 1991; 12: 415-22.
6. Edwards LE; Bucknall TE; Pittam MR; Richardsson DR; Stanek J. Transurethral resection of Prostate and Bladder Neck Incision: a review of 700 cases. B J Urol.1985: 57:167-71
7. Riehmann M; Knes. J.M; Heisey. D; Madsen.P.O; Bruskwitz.R.C. Transurethral resection versus incision of the Prostate; A Randomized perspective study. Urology, 1995 May: 45:768-75.
8. Jahnson. S; Dalen.M; Gustavson. G; Pedrsen J. Transurethral Incision versus resection of the prostate for small to medium benign prostatic hyperplasia. B J Urol. 1998;81:276-81
9. Ruzic B; TomaskovicI; Tmski D; KrausO; Bekavac-Beslin M; Vrkic N. Systemic stress response in patients undergoing surgery for benign prostatic hyperplasia. BJU Int. 2005; 95:77-80
10. Orandi A. Transurethral Incision of Prostate (TUIP): 646 cases in 15 years – A Chronological Appraisal. B J Urol.1985; 57 (6):703-7
11. GolamRobbani. A.B.M; Tranurethral Resection (TURP) versus Transurethral Incision (TUIP) of the Prostate for small sized Benign Prostatic Hyperplasia: A Prospective Randomized Study.TAJ 2006. 19(2):50-56
12. Larsen E.H; Dorffinger,T. Gasser, T.C; Gaversen, P.H; Bruskewitz, R.C: Transurethral incision versus resection of the Prostate for the treatment of benign prostatic hyperplasia. ApreliminaryReport . Scan J UrolNephrol. Suppl.1987; 104:83-86.
13. Christensen, M.M; Aagaard, J; Medson P.O. Transurethral resection versus transurethral incision of Prostate: A Prospective Randomized Study. Urol. Clin. North.Am.1990.17(3):621-30.
14. Soonawala, P.F; Pardanani, D.S: Transurethral incision versus resection of the Prostate. A subjective and objective analysis. Br. J. Urol. 1992; 70(2): 174-7.
15. John m Fitzpatrick. Minimally invasive and endoscopic management of benign prostatic hyperplasia. In: Wein AJ.;KavoussiLR;NovickAC;Partin AW; Peters CA. editors. Campbell- Walsh urologuy. 9th ed. Philadelphia: Saunders Elsevier. 2007. P 2841-2
16. Yang Q; Abrams P; Donovan J; Mulligan S; William G. Transurethral Resection or Incision of the Prostate and other Therapies: A survey of treatment for Benign Prostatic Obstruction in the UK. BJU Int.1999; 84: 640-5
17. Nadeem, A; Ahmed, H; Rana, S.M; Mahmood A; Alvi, M. S;Akmal, M.Transurethral Incision of Prostate (TUIP) for minimally Enlarged Prostates. JCollPhysician SurgPak.2010.20 (1):51-54
18. Ahmed M; Hussain S; Abbas S; Iqbal N; Tahir M; Nasrullah F. Transurethral resection of Prostate (TURP) – A treatment Modality for Benign Prostatic Hyperplasia (BPH). Ann King Edward Med Coll. 2004; 10 (2): 152-4
19. Orandi A. Transurethral Incision of Prostate compared with Transurethral resection of Prostate in 132 matching cases. J Urol. 1987. 138: 810-15.
20. Keitzer WA, Cervantes L, Demaculangan A, Cruz B. Transurethral incision of Bladder Neck for Contracture. J Urol.1961; 86:242-246