

Transurethral Resection of Prostate with and without Traction- A Retrospective Comparative Study

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ABSTRACT

Introduction: The study aims to compare safety, efficacy and early outcomes in patients who underwent mono polar transurethral resection of prostate (TURP) with and without bladder traction.

Materials and Methods: A retrospective comparative study was conducted in the Department of Urology, Manipal Teaching Hospital from August 2018 to August 2020 among the patients who underwent Traction TURP (TT TURP) and Traction less TURP (TL TURP). Patients' demographic profile, preoperative investigations and perioperative parameters were noted. Postoperatively requirement of reapplication of traction, bladder washes, requirement of tranexamic acid for haematuria, Visual Analogue Score (VAS) score after 8 and 12 hours, length of hospital stay was compared between the two groups.

Results: There were total of 120 patients who underwent TURP. Among them 56 patients underwent Traction TURP (control group) and 64 patients underwent Traction less TURP (study group). There was no significant difference in terms of postoperative continuous haematuria, clot retention, blood transfusion or fall in haemoglobin. However there was significant difference in VAS after 8 hours (7.12 vs 3.18; p=0.00) and 12 hours (5.78 vs 1.71; p=0.00), requirement of additional analgesia (80.4% vs. 9.4%; p=0.00) and length of hospital stay (5.48 vs. 3.80; p=0.00).

Conclusion: Traction less TURP in patients undergoing mono polar TURP is safe and is associated with significantly lower morbidity.

Keywords: Traction; Prostate; Hypertrophy.

INTRODUCTION

Transurethral resection of prostate (TURP) is still the widely accepted surgical treatment for benign prostatic enlargement. However, this age old but highly effective method has both advantages and disadvantages.

Incomplete hemostasis during the operation makes post-surgical bleeding one of the major drawbacks of this technique. In comparison, the new methods like laser prostatectomy or bipolar-TURP involve great care to prevent this complication. Inducing pressure on the prostate neck using an indwelling

catheter for traction was one of the most important techniques to control post-prostatectomy bleeding. Placing an adhesive band between the catheter and the thigh to fix the catheter to the thigh is the most popular method for prostate traction. It can be applied for 30 minutes, 6 hours or overnight.

There is a paucity of studies in the literature about the role of traction which have mainly focused on the effect of traction in reducing blood loss but its effect



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on morbidity has been less studied.¹ Patients usually complain of pain and discomfort in the genital, supra pubic area and perineum as well as feeling of rectal fullness during traction after TURP.² The main aim of this retrospective study was to look for efficacy, safety and compare outcomes in patients who underwent TURP with and without traction at our institute.

MATERIALS AND METHODS

This was a retrospective comparative study conducted at Department of Urology, Manipal Teaching Hospital where patients operated from 1st August 2018 to 31st July 2020 for enlarged prostate were included. Two experienced urologists were involved in the operation where one surgeon gave bladder neck traction (TT TURP) and the other surgeon didn't use traction after surgery (TL TURP). An ethical clearance was obtained from Institutional Review Committee (IRC number 400) before carrying out the study. All the data were collected from the Medical Records Department of the hospital. As the nature of the study was record based and retrospective, consent was waived by the ethical committee of the institute, hence was not obtained and data too were anonymized.

Inclusion criteria:

All patients who underwent TURP with and without traction were included in this study.

Exclusion criteria:

Patient who underwent open prostatectomy.

The patients who underwent mono polar TURP were divided into two groups: a) control group: Traction TURP (TT TURP) and b) study group: Traction less TURP (TL TURP). Patients' demographic profile, international prostate symptom score (IPSS), quality of life (QOL), use of medications for benign prostatic hypertrophy, antiplatelet therapy were noted on a predesigned proforma. Besides, ultrasonography of the Kidney, Ureter, Bladder and prostate (prostate size, intravesical protrusion), post void residual urine (PVRU) and maximum flow rate (Qmax) of urine on uroflowmetry were also noted who were not on catheter. Digital rectal examination (DRE) findings and serum PSA were also noted. Relevant investigation reports and perioperative complications were also noted.

PROCUDURES

All the patients planned for elective TURP were admitted one day prior to surgery. Surgeries were performed under spinal anesthesia. All the

procedures were done by continuous irrigation rotatable resectoscope (Karl Storz, Germany). Resection was done by the electro cautery with the current settings of 130 w pure cutting and 80 w coagulating current. The duration of resection was taken as the time from the start of resection to the maintenance of hemostasis. During the end of procedure complete hemostasis was confirmed by absence of bleeding spurters suggestive of arterial bleed, clear color of effluent channel and observing any bleeders after stopping irrigation. After completion of the procedure, bladder washes were given followed by insertion of a three-way bard 22 Fr Foley catheter. In patients on whom traction was planned, 30 ml of distilled water was instilled into the balloon then traction was applied till the 'Y' of the catheter reached near the level of knee. Thereafter, catheter was fixed into the thigh with adhesive tape. Traction was applied till next morning according to the operating surgeon protocol even if the effluent was clear. It was released next day morning after the round. In patient where traction was not applied 30 ml of distilled water was instilled and then catheter was fixed into the thigh loosely without applying traction. Continuous postoperative irrigation with normal saline was started and continued till the 1st to 2nd postoperative day in both study and control groups. Pain scores were calculated 8 and 12 hours after the surgery using the VAS (Visual Analog Score) score. Pain score was calculated after 8 hours so that the analgesic effect of spinal anesthesia wears off and exact VAS score could be obtained. The patient requiring blood transfusion was also noted (the trigger for blood transfusion was 8 mg/dl). Duration of clearance of hematuria was noted. Postoperative hemoglobin level was measured 24 hours after surgery. Characteristics like requirement of catheter re- traction, bladder washes, administration of tranexamic acid and other additional surgical intervention due to continued hematuria in the postoperative period were noted. Duration of hospital stay was also noted and was compared between the two groups. Statistical analysis was done using SPSS software version 25. Categorical values were compared with paired t-test. Chi-square test was used to compare frequencies between two groups. A p value of <0.5 was considered significant.

RESULTS

There were total of 120 patients who underwent mono polar TURP during the study duration.

Among them 56 patients underwent Traction (TT) TURP and 64 patients underwent traction less (TL) TURP.

Table 1. Demographic profiles and baseline characteristics

Parameters	Traction TURP(n=56)	Traction less TURP(n=64)	P value
Mean Age(yrs.)±SD	71.40±7.1	71.30±9.3	0.749
Mean Prostate size(gm.)±SD	55.3±20.8	52±19	0.265
Catheter in situ	11(17.2%)	14(21.9%)	0.482
Anti BPH medication	29(51.8%)	34(53.1%)	0.757
Antiplatelet therapy	6(9.4%)	9(14.1%)	0.158
Mean IPSS score±SD	22.1±2.93	21.95±3.1	0.835
Mean Pre op Hb(gm.)±SD	12.2±1.37	11.98±1.1	0.478
Mean Resection time(min)±SD	62±15.77	59.84±13.9	0.316

The two groups were comparable in terms of demographic profiles and baseline characteristics.

Table 2. Perioperative outcomes

Parameters	Traction TURP(n=56)	Traction less TURP(n=64)	P value
Continuous hematuria	2((3.6%)	1(1.6%)	0.48
Clot retention	3(5.4%)	1(1.6%)	0.24
Blood transfusion	2(3.6%)	1(1.6%)	0.48
Mean Fall in Hb after 24 hrs±SD	0.73±1.34	0.80±0.7	0.723
Mean VAS after 8 hrs±SD	7.12±0.8	3.18±0.9	0.00
Mean VAS after 12 hrs±SD	5.78±0.9	1.71±0.62	0.00
Requirement of additional analgesia	45(80.4%)	6(9.4%)	0.00
Mean length of Hospital stay±SD	5.48±0.68	3.80±0.5	0.00

There was significant difference in terms of VAS score after 8 and 12 hours, requirement of analgesia and hospital stay between the traction

and traction less group. There was no significant difference in terms of hemoglobin fall, clot retention, blood transfusion or continuous hematuria between the two groups.

DISCUSSION

Catheter traction after prostatectomy has been a common practice for many years. The technique was useful in case of open prostatectomy.³ Whenever open prostatectomy was performed there was no direct means for hemostasis after the removal of adenoma. Hemostasis was done by packing of prostatic fossa followed by suturing of prostatic vesical junction² or traction of catheter³. Shiraziet al² found that urethral catheter traction diminishes bleeding compared with suturing at the prostatic vesical junction during supra pubic prostatectomy. We believe that the same technique and the principle has been carried forward in terms of transurethral resection of prostate though there is no documentation or literature available. But in TURP there is a direct possibility of hemostasis of bleeding vessels thus doubting the definite role of traction. Traction does not help with arterial bleeder which needs to be coagulated.¹ It can only provide tamponade effect for venous oozes which can itself stop after clot forms around those bleeding veins. Various authors have pointed out the definite role of traction after TURP but have not been able to address the morbidity to the patient caused by the traction.^{4,5,6} In mono polar TURP with the provision of direct coagulation of bleeders, spending few more minutes in hemostasis and confirming the hemostasis by stopping the irrigation we can actually avoid the traction in such patients thus the morbidity.

In our study there was no significant difference between the two groups in terms of bleeding parameters (Table 2) which is assessed by the incidence of continuous hematuria, clot retention, requirement of blood transfusion and fall in hemoglobin postoperatively. There was one (1.6%) patient in TL group with continuous hematuria who required reapplication of traction. In the same patient clot retention developed and clot evacuation was done the next day. When traction is applied, there is significant amount of pain and discomfort in supra pubic area, which is evident in our study (Table 2) by VAS after 8 hours and 12 hours. We gave opioid analgesia when there was requirement of additional analgesia (tramadol 50 mg plus ondansetron 4 mg intravenously). The requirement of additional analgesia in such patients was also significantly high (80.4% vs. 9.4%). Hospital stay

was also significantly different between the two groups (5.48 vs. 3.80 days). The reason for this could be patient without traction had catheter removed on second postoperative day and were discharged on the same day or next day depending upon presence or absence of lower urinary tract symptoms. Patient with traction were released from the traction on the first postoperative day after the round and catheter was removed on third postoperative day. They were discharged on the next day of catheter removal thus increasing the hospital stay. Besides in our study the surgery was performed by two different consultant urologist where they will have their own protocol of catheter removal. Our results are consistent with the study done by Badne A et al¹ where they also observed significant difference in terms of VAS score postoperatively and requirement of analgesia. There was no significant difference in terms of hospital stay in their study. Badne A et al did not mention whether surgery was performed by a single surgeon or different surgeons. In our study if a single surgeon had been involved then the hospital stay might not have been significantly different. That's why these results demand randomized study between the cases performed by a single surgeon which is also the limitation of our study.

CONCLUSION

Traction less TURP can be safely performed in all kinds of patients posted for elective monopolar TURP. Role of traction should be revised and should be reserved for only those patients where there is continuous hematuria post TURP.

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