

Transurethral Resection of Prostate Without Traction: A Retrospective Observational Study

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ABSTRACT

Introduction: Application of traction after monopolar transurethral resection of prostate (TURP) is a common practice that causes significant discomfort to the patients. So can we avoid the morbidity of traction in a selected group of the patient where there is no significant hematuria after TURP? Hence we did a retrospective observational study to look for feasibility and safety of traction less TURP.

Methods: It is a retrospective observational study conducted in the Department of Urology, Manipal Teaching Hospital from August 2018 to August 2020 in patients who underwent traction less TURP. There was a total of 64 patients who fulfilled the inclusion criteria. All the demographic profiles, preoperative investigations, and perioperative parameters were noted. Postoperatively requirement of reapplication of traction, bladder washes, and application of tranexamic acid for hematuria, clot retention, and blood transfusion were noted. Statistical analysis was done by SPSS version 25.

Result: Mean age and prostate size were 71 yrs. and 52 g. Sixteen(25%) patients were on antiplatelet therapy, fourteen(21%) patients had a catheter in situ and 34(53%) patients were on anti-BPH (Benign Prostatic Hyperplasia) medication. There were no patients who require retraction, bladder washes, or application of intravenous tranexamic acid. There was one (1.56%) patient who had clot retention requiring evacuation and blood transfusion. VAS score after 8 hrs. and 12hrs. was 3.22 and 1.73. Mean hemoglobin fall was 0.81 g%.

Conclusion: Traction after monopolar TURP can be safely omitted in carefully operated patients but traction should be reserved for those patients with continuous hematuria.

Keywords: Benign Prostatic Hyperplasia; Hematuria; Transurethral Resection of Prostate

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INTRODUCTION

Transurethral Resection of Prostate (TURP) is the gold standard treatment for Benign Prostatic Hyperplasia (BPH). Since the time it was first described the techniques of resection have evolved but the protocol of applying traction to the catheter after TURP and subsequent immobility and morbidity have continued. The routine practice is to apply traction in every case of TURP without any validity in the literature. The method of applying traction and the amount of traction to be applied are also not well defined. Every center has its random method for the same. There are very few studies in the literature and they have mainly concentrated on the effect of traction on reducing blood loss but there is scant data regarding the morbidity associated with the use of traction.¹ It is a common experience that patients have significant pain and discomfort in the genital, suprapubic area, and perineum as well as a sense of rectal fullness till the time traction is continued after TURP.² So can the morbidity of traction be avoided in a selected group of patients where there is no significant post TURP hematuria? Hence we carried out a retrospective observational study at our center to know the outcome of TURP without traction and can it be safely omitted in carefully operated patients.

METHODS

We conducted a retrospective observational study in the Department of Urology, Manipal Teaching Hospital, from August 2018 to August 2020 in the patients with BPH who had undergone traction less TURP. Data were retrieved from the Medical Records Department of the hospital. Ethical clearance was obtained from Institutional Review Committee before carrying out the study. All the patients who underwent elective TURP without traction were included whilst patients who had traction after TURP were excluded. Patient demographic profile, International Prostate Symptom Severity (IPSS) score, Quality Of Life (QOL), patient on previous BPH medication, antiplatelet therapy, were noted on a predesigned proforma. Regarding

antiplatelet therapy patients who were on clopidogrel were stopped 5 days before surgery but those who were on aspirin were continued till the day of surgery. Besides, investigation reports like Ultrasonography of the Kidney Ureter Bladder and prostate (prostate size, intravesical protrusion) Post void residual Urine (PVRU) and maximum flow rate (Q max) of urine on Uroflowmetry were also calculated who was not on a catheter. Findings of Digital rectal examination (DRE) and serum Prostate Specific Antigen (PSA) were also noted. The relevant investigation report and perioperative complications were also noted.

Procedure:

All the patients planned for TURP underwent routine investigation and pre-anesthetic checkups before surgery. They were admitted one day before surgery and necessary preoperative preparations were made. The next day patient was shifted to the operation theatre and spinal anesthesia was given by the anesthetist. All the procedures were done by continuous irrigation rotatable resectoscope (Karl Storz, Germany) by a single urologist. Resection was done by electrocautery (valley lab Covidien) with the current settings of 130w 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 the procedure, complete hemostasis was confirmed by the absence of bleeding spurts after the irrigation was stopped and the clear color of the effluent channel. After completion of the procedure, bladder washes were given through a three-way bard 22 Fr Foley catheter. Foley's catheter was fixed to the thigh with adhesive tape but traction was not given. Continuous postoperative irrigation with normal saline was started in patients and continued till the 1st to 2nd postoperative day. Pain scores were calculated using the VAS score after 8 and 12 hours after the surgery so that the effect of anesthesia wears off and the true VAS score could be known. The patients who required catheter traction, bladder washes, and another additional surgical

intervention due to continued hematuria in the postoperative period, day of removal of the catheter, and discharge was noted. The patient requiring blood transfusion was also noted (the trigger for blood transfusion was <8 mg/dl). Statistical analysis was done by SPSS version 25.

RESULTS

There was a total of 64 patients who underwent monopolar TURP without traction during the study period.

Table 1: Demographic profiles of the patients (N=64)

Parameters	
Age in yrs (mean±SD)	71.2±9.3
IPSS Score(mean±SD)	26 ± 5
QOL	4.8±0.83
Anti BPH medication	34(53%)
Antiplatelet therapy	16(25%)
Catheter in situ	14(21%)

IPSS: International Prostate Symptom Severity Score; QOL: Quality of life

Table 2: Showing investigation findings

Parameter	Mean±SD
Prostate Size(gram)	52±19
Intravesical Prostatic Protrusion(mm)	11± 7
Post Void Residual Urine	53±27
Max flow rate(n=49)(ml/sec)	9.5±2.9
Hemoglobin(g/dl)	11.9±1.4
Serum PSA(ng/ml)	2.74±2.7

PSA: Prostrate Specific Antigen

Table 3: Perioperative findings

Parameter	Mean+/- SD
Resection time(min)	56+/-19
Weight of resected tissue(g)	16+/-7.8
TUR syndrome	Nil

Table 4: Postoperative parameters

Parameter	
Requirement of re-traction	None
Bladder washes	None
Continuous hematuria requiring intravenous tranexamic acid	None
Clot retention requiring clot evacuation	1(1.56%)
Blood transfusion	1(1.56%)
VAS score after 8 hrs and 12 hrs (mean)	3.22 and 1.73
Mean hemoglobin fall pre and postoperatively(g/dl) (mean±SD)	0.81±0.7
Postoperative day of catheter removal	2
Hospital stay in days (mean±SD)	3.80±0.5

Postoperatively there were no patients who required reapplication of traction, bladder washes, or injection of tranexamic acid for ongoing hematuria. However, there was one patient who developed clot retention requiring clot evacuation, and a blood transfusion was also done on the same patient. Postoperative mean VAS score after 8 hrs and 12 hrs was 3.22 and 1.73 respectively. Mean hemoglobin fall pre and postoperatively was 0.81 g/dl. All the patients underwent removal of the catheter on the second postoperative day.

DISCUSSION

Monopolar TURP is still a widely accepted and practiced surgical treatment for smaller to moderate-sized prostates. After the completion of the procedure, there is continuous oozing from the bladder neck for which catheter traction is applied. This technique was useful in the case of open prostatectomy.³ In open prostatectomy there was no direct method for hemostasis after the removal of adenoma. Hemostasis was achieved

by packing of prostatic fossa followed by suturing of prostatic vesical junction⁴ or traction of catheter³. The same technique has been carried forward in TURP also though there is no literature available for the same. In TURP there are various techniques to apply traction. The most commonly and routinely given method of traction is filling the Foley bulb with 30 ml of distilled water followed by traction and the catheter is fixed to the thigh with adhesive tape. Various authors have described their method of traction application.^{5,6} These traction techniques have their drawbacks and impracticability. They are difficult to follow because of the lack of proper logistics and the result are somewhat doubtful. Besides these traction techniques cause significant discomfort in the suprapubic area, and rectal fullness once the anesthesia wears off thus increasing the requirement for more analgesia. These traction techniques when applied can also increase the rate of urethral stricture as documented by Sekar et al.⁷ They documented various factors responsible for the development of urethral stricture post TURP. Factors like size of resectoscope sheath used, size of catheter used, preoperative calibration of the urethra, and a special type of traction named Salvaris swab traction were responsible. Salvaris swab technique is a method where two gauze swabs are tied moderately tightly around the catheter and pushed up against the glans penis. If the hemostasis is not meticulous or complete then there can be continuous hematuria despite traction. The duration of traction is purely dependent upon the surgeon's choice. Some would prefer 30 min, two hours, six hours, or 12 hours. So there is no clear consensus for the duration of traction. Hence if we could omit the technique of traction in a carefully operated patient, then the discomfort of traction to the patient and the chaotic environment created by the surgeon in the operation theatre or postoperative ward for the application of traction could be avoided. Instead near the completion of the procedure confirmation

of hemostasis can be done by meticulous coagulation of all bleeders, checking of bleeders by stopping the irrigation, or seeing the color of the effluent channel. Besides we can spend a few more minutes for hemostasis after the procedure. If all these measures are applied traction can be safely omitted in all patients who underwent monopolar TURP. In our study, we have followed the same technique and we could omit traction in almost all kinds of patients who underwent TURP be it catheterized patients where chances of bleeding are more or who are/were on antiplatelet therapy. Traction could be safely omitted in benign and malignant prostates too. The mean VAS score after 8 and 12 hours is also low in our study.

There was one patient (1.56%) in our study who developed clot retention requiring clot evacuation where blood transfusion (1.56%) was also done on the same patient. Our result is comparable with the Meta-analysis done by Rassweiler et al. where the incidence of clot retention in recent years is 2% and the blood transfusion rate is 0.4% which is from 2000-to 2005.² If we compare the result with the early years (1979-1994) the rate of clot retention is 5% and the blood transfusion rate is 7.1% which is higher than our study. In their study, they have applied traction in every case.

The role of traction cannot be fully ignored owing to the result shown by Walker et al. where they demonstrated that traction could reduce postoperative bleeding while applied, but once it is released there is no further role.⁶ Since our study is retrospective and observational it helps us in knowing the feasibility of traction less TURP but we may require further comparative studies to establish the fact whether traction is required or not.

CONCLUSION

Traction after monopolar TURP can be safely omitted in carefully operated patients however it should be reserved for those patients where there is continuous hematuria after TURP.

CONFLICT OF INTEREST

None

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