



"A PROSPECTIVE STUDY: ROLE OF TRACTION ON FOLEY'S CATHETER IN TURP PATIENTS"

Urology

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ABSTRACT

INTRODUCTION: Benign prostatic hyperplasia (BPH) is the most common condition affecting men those are 50 years of age and above. TURP is still the widely used technique for management of BPH. TURP with advent of newer technologies in diathermy and visual scope, has turned into a relatively safe one.

AIM: To study role of catheter traction on blood loss and complications in patients with TURP.

MATERIALS AND METHODS: This study was done among patients of BPH admitted in the Department of Surgery at S.N. Medical College, Agra during the period from January 2019 to February 2020. Total 60 cases were enrolled in the study and divided into two groups. Group A (30 patients) with traction on catheter after TURP and Group B (30 patients) without traction on catheter.

DISCUSSION: Blood loss and irrigation fluid was significantly less in the group with traction on foley's catheter. Duration of hospital stay and complications were also lesser in group with traction.

CONCLUSION: Traction on foley's catheter post TURP is effective in managing BPH with the merits of higher safety due to less blood loss and early discharge.

KEYWORDS

BPH, LUTS, Catheter traction, TURP, Blood loss

INTRODUCTION:

BPH is a hyperplastic process of the glandular epithelial elements and fibromuscular stromal elements of the prostate. BPH has impact on quality of life. BPH manifests clinically with lower urinary tract symptoms (LUTS) and may be associated with sexual dysfunction. 50 to 70% of men with histological features of BPH also have a prostate volume of more than 25gms (BPE), and up to 28% have moderate to severe LUTS^{1,2}. The clinical impact is because of bothersome LUTS. Bladder outlet obstruction (BOO) was detected in about 52% of the asymptomatic and 60% of the symptomatic men with BPH^{3,5}. Although it is not life threatening, its clinical manifestation as lower urinary tract symptoms (LUTS) reduces the patient's quality of life. Troublesome LUTS can occur in up to 30% of men older than 65 years⁶.

TURP still remains the widely used technique for the management of BPH^{7,8}. TURP, with the advent of newer technologies in diathermy and visual scopes, has turned from a complication fraught procedure to a relatively safe one. But still the risks of TURP syndrome and electrolyte disturbances do exist especially in cardiac risk patients accentuated by the use of glycine as an irrigant fluid. The advent of bipolar diathermy has made the use of normal saline as a safe irrigant fluid.

Blood loss is measured using the HemoCue photometer provides a simple method to measure haemoglobin in urine. This is quick to perform, gives immediate results, correlates well with laboratory methods of estimating TURP blood loss and is more accurate than methods which estimate the patient's haemoglobin before and after operation⁹⁻¹¹. A modified microcuvette is used for the measurement of haemoglobin in the effluent of irrigation fluid^{12,13}.

MATERIALS AND METHODS

This study was done among patients of BPH admitted in the Department of Surgery at S.N. Medical College, Agra during the period from January 2019 to February 2020.

INCLUSION CRITERIA WERE:

All men above 45 years symptomatic with BPH having prostates >40 cc and an indication for prostatectomy.

EXCLUSION CRITERIA WERE:

1. All known cases of prostatic carcinoma 2. Patients with neuro-vesical dysfunction.

We have done an analytical, comparative study of elective TURP in

patients of BPH between January 2019 to February 2020. A total of 60 cases were taken for study purpose and were randomized to receive either a standard TURP with foley's traction (30 patients; Group A) or TURP without traction on foley's catheter (30 patients; Group B). After ethical approval and informed consent, the patients were randomized to either of the two groups by systematic sampling technique. The two groups were similar in age and disease signs and symptoms. Detailed history, complete physical examination and following preoperative evaluation was done.

Pre-operative evaluation:

1. Laboratory investigations- Uri analysis and culture, Complete blood count, Coagulation profile, AST, ALT, Renal function Test. 2. Imaging- Abdominal ultrasonography for estimation of prostate size and postvoid residual urine (PVR), 3. Other investigations- Uroflowmetry (UFM), and for assessment of LUTS and QoL, the International Prostate Symptom Score (IPSS). Prostate volume was measured through abdominal ultrasound and estimated a length x width x height x 0.52.

Any patient who has urinary infection were treated with antibiotics and rendered infection free prior to surgery.

Prophylactic broad-spectrum antibiotics were administered at induction of anesthesia. All patients were operated on under spinal anesthesia by a single surgeon with a continuous-flow resectoscope of 24Fr and standard loop. A 22Fr Triway catheter was placed per urethra and affixed to abdomen using adhesive bands. Operating time, blood loss, resected tissue weight, changes in haemoglobin and serum sodium in the postoperative period, and any complications were recorded. Traction was applied which was sufficient to change the colour of irrigation fluid favourable to clear. Traction of catheter was removed on next morning of operation with duration of traction ranging from 12-20 hrs. Blood loss was measured using the HemoCue photometer in the collected irrigation fluid.

Statistical analysis was done using the Student's *t*-test and $p < 0.05$ was considered significant. Mean and standard deviation (SD) were calculated for all quantitative variables, while frequencies and percentage were calculated for all qualitative variables.

OBSERVATIONS-

Table-1: Age distribution of patients

Age Group (Years)	TURP with traction (N=30)	TURP without traction (N=30)
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45-60	8(26.67)	5(16.67)
60-70	8(26.67)	10(33.33)
> 70 years	14(46.67)	15(50)
Mean±sd	66.66±17.84	67.92±18.36

The mean age was 66.66 years in group of TURP with traction and 67.92 years in group without traction. Both the groups were having almost equal proportion of patients with similar age group. On statistical analysis there was no significant difference between two groups.

Table-2: RESECTION TIME

Group	Resection time (min)	Standard Deviation	P value
TURP with traction (N=30)	31.63 (18-65)	12.12	0.83
TURP without traction (N=30)	31.03 (17-55)	10.13	

Table-3: WEIGHT OF RESECTED PROSTATE

Group	Volume of resected prostate (g)	Standard Deviation	P value
TURP with traction (N=30)	35.9(18-65)	12.95	0.88
TURP without traction (N=30)	36.4(19-75)	13.6	

Mean resection time in group with traction was 31.63 mins [ranges 18 - 65 mins] and in group without traction was 31.03 mins [ranges 17-65 mins]. Mean weight of resected prostate in group with traction was 35.9 g [ranges 18 - 65 g] and in group without traction was 36.4 g [ranges 19 - 75 g]. On statistical analysis there was no significant difference in resection time and weight of resected prostate in two groups.

Table-3: Irrigation Fluid Collected (in L) During Surgery, On Post-operative Day 1 And Day 2

Volume of fluid (L)	TURP foley's traction (N=30)	TURP without traction (N=30)	P value
During Surgery	8.89 ± 0.98 L	8.91 ± 0.97 L	0.94
Post-op Day 1	12.61 ± 1.33 L	17.69 ± 1.71 L	<0.0001
Post-op Day 2	7.09 ± 0.70 L	11.40 ± 0.87 L	<0.0001
Total	28.57 ± 2.53 L	38.01 ± 3.91 L	<0.0001

Irrigation fluid collected during TURP surgery was approximately same in both group averagely 8.89 litres [ranges 7.6 - 12.5 L] in traction group and 8.91 L [ranges 7.8 - 12.7 L] in group without traction. At the end of 1st post-operative day, mean volume of fluid collected was 12.61 litres [ranges 9.8 - 15.7 L] in traction group and 17.69 L [ranges 14.8 - 20.7 L] in group without traction. The mean volume of irrigation fluid collected on 2nd post-operative day was 7.09 litres [ranges 5.8 - 8.4 L] in traction group and 11.40 L [ranges 10.0 - 13.2] in group without traction. On statistical analysis there was significant difference in two groups.

Table-4: Estimated Blood Loss (in ml) During Surgery, After 30 Min, At Pod 1 And Pod 2

	TURP with foley's traction (N=30)	TURP without traction with foley's catheter (N=30)	P value
During Surgery	229.4 ml (90-455)	231.8 ml (85-435)	0.94
30min	17.1 (27.57) mL	41.33 (53.06) mL	0.03
POD 1	88.81(16.08) mL	102.05 (22.46) mL	0.01
POD 2	54.29 (16.06) mL	79.79 (22.43) mL	<0.0001
Total	325.2 (114.26) mL	385.15 (114.27) mL	0.03

There was no significant difference in average blood loss during TURP surgery. Average blood loss was 229.4 ml [ranges 90-455 ml] in group with traction on foley's and 231.8 ml [ranges 85-435 ml].

On the 1st post-operative day, blood loss was averagely 88.81 ml [ranges 68.4-123.5 ml] in group with traction and 102.05 ml [ranges 78.6-154.8 ml] in group without traction.

The average blood loss detected on 2nd post-operative day was 54.29ml [ranges 27.6-85.7 ml] in group with traction and 79.79 ml [ranges 37.6-112.4 ml] in group without traction. On statistical analysis there was a significant difference in both groups.

The average total blood loss, resulting from TURP surgery was 325.2

ml in group with traction and 385.15 in group without traction.

Table-5: Incidence of complications

Complications	TURP with foley's traction (N=30)	TURP without traction with foley's catheter (N=30)
TUR Syndrome	0	0
Hemorrhage	2 (6.67)	7 (23.33)
Incontinence	9 (30)	10 (33.33)
Urethral Stricture	1 (3.33)	1(3.33)
Erectile Dysfunction	0	0
Retrograde Ejaculation	12 (40)	11 (36.67)
Clot retention	1(3.33)	4(13.33)
Dysuria (UTI)	2(6.67)	6(20)

DISCUSSION:

Mean resection time in our study was higher than Walker et al¹⁴ and less than E O Olapade— Olaopa et al, Mean weight of resected prostate in our study was similar to E O Olapade— Olaopa et al and higher than Walker et al.

Mean irrigation fluid collected in our study during surgery was similar in two groups but it was higher on day 1 and day 2 after surgery in group without traction. It was 12.61L on day 1 and 7.09 L on day 2 of surgery in group with traction and it was 17.69L on day 1 and 11.04L on day 2 of surgery in group without traction.

Our study showed significant decrease in fluid of irrigation required after TURP in group with traction on foley's on post operative day 1 and day 2 in comparison with group without traction.

Mean blood loss during surgery in two groups was similar, but it was less in group with traction post operatively that was 88.81 mL on day 1 and 54.29 mL on day 2 and, that in group without traction was 102.05 mL on day 1 and 79.79 mL on day 2.

In Kirde D and colleagues study mean blood loss during surgery, on post operative day 1 and day 2 was 266.9 mL, 98.8 mL and 58.0 mL respectively.¹⁵ In Walker et al study mean blood loss during surgery was 160 mL in group with traction and 158 mL in group without traction, at 30 min post operatively in traction group was 14.8mL and group with traction was 36.9 mL.¹⁰

This study showed that in the group without traction, the blood loss was greatest in first 30 min after operation (mean 41.33, SD 52.06 mL). Traction during this period reduced blood loss (mean 17.1, SD 27.57 mL). Traction on foley's also significantly reduced blood loss on day 1 and day 2 of surgery.

Our study showed that 1 patient [3.33%] in traction group and 4 patients [13.33%] in group without traction developed clot retention, 2 patients [6.67%] in traction group and 7 patients [23.33%] in group without traction developed secondary haemorrhage. 2 patients [6.67%] in traction group and 6 patients [20%] in group without traction developed UTI.

E.O. Olapade— Olaopa et al study showed 6% patients showed clot retention.¹⁶ In Kirde D and colleagues study 4.9 % patients developed clot retention and 4.1 % patients developed UTI.¹⁵ Akpayak I.C. and colleagues study revealed that more patients who had late removal of catheter had more UTI compared to early catheter removal.

CONCLUSION

Traction on the foley's catheter in post operative patients of TURP is effective to control post-operative bleeding, in reducing fluid and time required for irrigation, incidence of complications. Also reduce troublesome symptoms like clot retention, pain and need for analgesia, duration of hospital stay.

If this practice of traction on foley's catheter in TURP patients is adopted as routine, the savings resulting from the reduction in hospital stay would be considerable. Also the patient comfort and acceptance of this procedure (TURP) would increase.

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