Section: Reconstructive Urology

Original Research Article

TRANSPUBIC URETHROPLASTY FOR POST TURP BLADDER NECK CONTRACTURE

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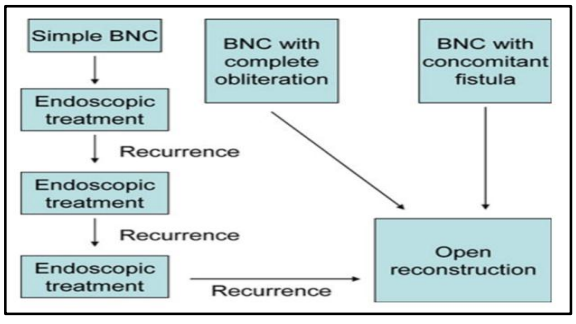
ABSTRACT

Background: Bladder neck contracture (BNC) following transurethral resection of the prostate is a rare but feared complication. Most of the cases first treated endoscopically with variable success rate. Treatment is often challenging with significant recurrence rates. In our study we are evaluating the outcome of transpubic urethroplasty in primary high grade BNC. **Materials and Methods:** Three patients of Post TURP complicated BNC were registered prospectively and analyzed retrospectively between January 2023 - October 2024.After preoperative evaluation all of them underwent transpubic urethroplasty. Post operatively after 3 wks PUC removal done followed by VCUG and next day SPC removal done once patient able to void per urethra consistently. They were followed up with IPSS QoL Scoring, Post void residue on USG and uroflowmetry. **Result:** Three patient of post TURP bladder neck contracture were included in our study with a mean age of 57 yrs. The minimum follow-up was 13 months. Pre operative IPSS QoL Score was 27.6 (SD+/-3.05), post void residue 441 (SD+/-62.9) and Qmax 3.3 (SD+/-1.52). Post operatively IPSS and PVR were lowered down significantly to 5 (SD+/-2) and 21.6 (SD+/-7.63). Mean Qmax post operatively reached 20.6(SD+/-2.51). There was 1 reported case of mixed urinary incontinence currently on medical management with anticholinergic. **Conclusion:** Transpubic urethroplasty is a safe and effective option specially for high grade or complex post TURP bladder neck contracture with improved outcome and quality of life.

INTRODUCTION

Transurethral resection of prostate (TURP) is considered the gold standard in treatment of BPH.[1] bladder neck contracture (BNC) reported to the range between 0.5-4 % following TURP.[2,3] Bladder neck contracture following transurethral resection of the prostate is a rare but feared complication.



According to Pansadaro et al,[4] Iatrogenic strictures of the prostatic urethra have been classified according to location and etiology into three categories: Type I, located exclusively at the bladder neck; Type II, located in the midportion of the prostatic fossa; Type III, when the whole prostatic fossa is replaced by stricture.

Most of the cases first treated endoscopically, with a success rate reaching upto 86%.[5] In our study we are evaluating the outcome of transpubic urethroplasty as a primary treatment modality in high grade BNC.

MATERIALS AND METHODS

In our study, three patients of Post TURP complicated BNC were registered prospectively and analyzed retrospectively between January 2023 - October 2024. Out them 2 underwent TURP outside and 1 in our setting for BPH. All of them presented with voiding LUTS approx. 6-12 months after TURP. They were evaluated preoperative with IPSS -QOL, uroflowmetry for screening of outflow obstruction, USG of KUBP to asses upper tract and PVR. RGU/VCUG done in all cases to assess the bladder, to confirm and categorize the stricture. CPE was done before operation for confirmation and operative

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planning. Pre-operative urinalysis and urine culture was done and UTI was treated accordingly.

Figure 1&2: Retrograde Urethrogram & Voiding cystourethrogram

Figure 2: Retrograde Urethrogram & Voiding cystourethrogram

Figure 3: Cystourethroscopy showing narrowing at posterior urethra

Surgical Techniques: Patients were placed in supine position. Midline lower abdominal incision was made to expose the space of Retzius. Anterior cystotomy was done incorporating the SPC site to identify the cicatrised bladder neck [Figure 4]. Fibrotic tissue was excised.

Figure 4: Transvesical access to Bladder neck

Table 1: Pre op parameters

	Case 1	Case 2	Case 3
Age (yrs)	51	62	58
IPSS score	31	25	27
PVR (ml)	500	450	375
Q max (ml/s)	5	3	2
Pansadaro type	Type 3	Type 2	Type 3

Distally the prostatic urethral dissection was difficult so symphysiotomy was done in one case while superior internal pubectomy was done in the others. [Figure 5 & 6]

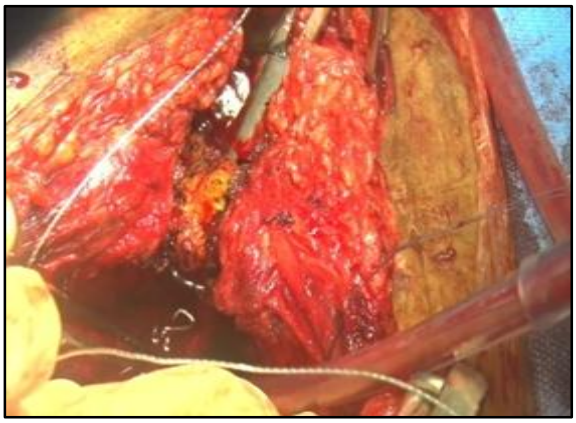

Figure 5: Pubectomy

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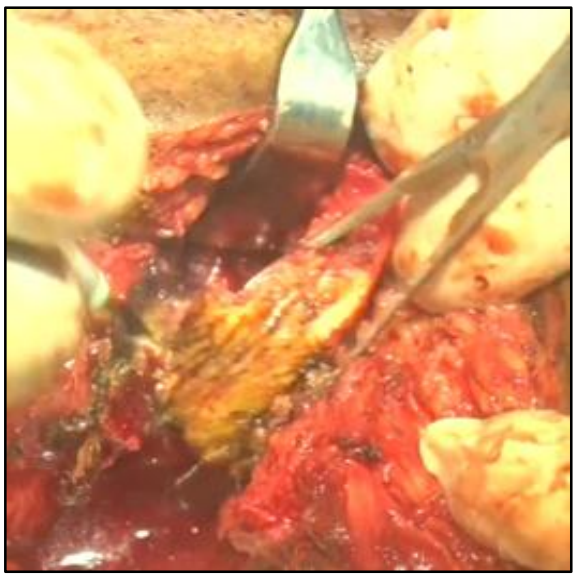

Figure 6: Pubectomy

Identification of the distal limit of stricture was done using urethral sound passed through meatus and urethra opened over the sound. [Figure 7]

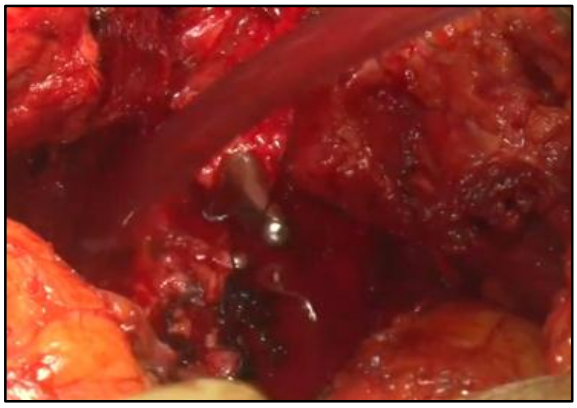

Figure 7: Identification distal limit of stricture

Proximally the cicatrised bladder neck was opened over another urethral sound passed through the cystotomy and stay sutures were taken.

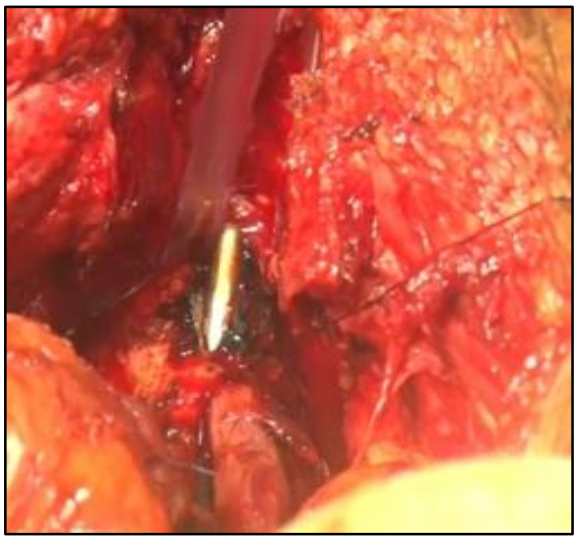

Figure 8: End to end anastomosis of bladder neck & healthy posterior urethra

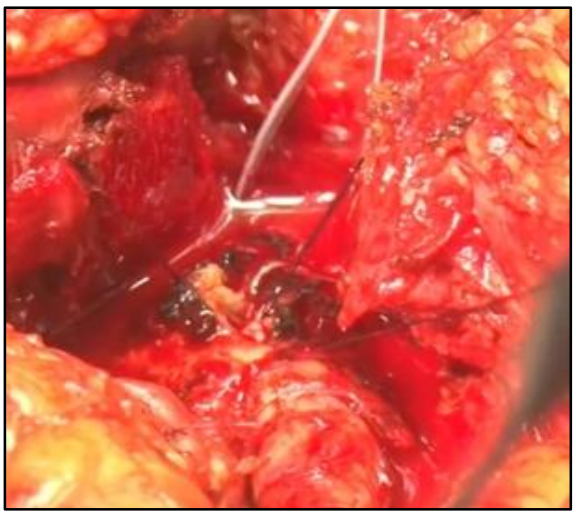

Figure 9: End to end anastomosis of bladder neck & healthy posterior urethra

Intervening 2cm prostatic fossa was fibrosed and all the fibrosed tissue excised and proximal bladder neck and distal membranous urethral margins were freshened. The distal normal urethra was spatulated dorsally and after assessment of tensionless anastomosis it was anastomosed to the bladder neck using 4-0 PDS interrupted sutures. [Figure 8 & 9]

Post op VCUG done on 3rd wk post op after removal of PUC. Then patients were allowed to void per urethra. with successful spontaneous micturition and non significant residual urine, SPC was removed on very next day.

Figure 10: Post op Voiding Cystourethrogram

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Figure 11: Post op Voiding Cystourethrogram

Follow-up assessments done by IPSS QoL scoring, uroflowmetry, USG for upper tract and PVR at 3, 6, 12th months and the yearly.

Success was defined as cystourethroscope passage through the anastomosis without resistance and no need for additional procedures.

RESULTS

Three patient were included in our study with a mean age of 57 yrs. The minimum follow-up was 13 months. Etiology of stricture was monopolar TURP in all cases and HPE was Benign Prostatic Hyperplasia. Pre operative IPSS QoL Score was 27.6 (SD+/-3.05), post void residue 441 (SD+/-62.9) and Qmax 3.3 (SD+/-1.52). Mean operative time was 135 mins with a mean duration of hospital stay of 7 days. Post operatively IPSS and PVR were lowered down significantly to 5 (SD+/-2) and 21.6 (SD+/-7.63). Mean Qmax post operatively reached 20.6(SD+/-2.51) at 1yr. There was 1 reported case of mixed urinary incontinence at present on medical management with anticholinergic.

Table 2: Comparison between pre and post operative voiding parameters

Variables	Pre-operative	Post-operative	P value
IPSS (mean)	27.6 +/-3.05	5+/-2	0.0004
Post void residue (mean)ml	441+/-62.9	21.6+/-7.63	0.0003
Qmax (mean)ml/sec	3.3+/-1.52	20.6+/-2.51	0.0005

DISCUSSION

Bladder neck contracture following transurethral resection of the prostate is a rare but feared complication. Patients usually presents with varying degree of obstructive lower urinary tract symptoms. Though treatment usually begins with endoscopic management but there is no standarized treatment protocol so far. some authors suggested a simplified solution like urethral dialtion upto 18F followed by CISC for 3 months, but at the cost of a increased risk of urethral trauma and erosion cold knife incision has been suggested with a 74% success ratefor initial management of BNC.[5,6] Incision of stenotic segment at 3 and 9 o'clock position followed by injection of triamcinolone has been used with a success rate of 83%.[7] But the fearsome problem with the endoscopic procedure are not impressive for higher grade stricture ,chances of recurrence, increasing complexity of reoperation with low success rate. Pfalzgraf et al,[8] reported 60 % success rate of open reanastomosis for recurrent BNC and complications like 30% new onset incontinence. for that reason we have adopted relative favorable radical surgery like transpubic urethroplasty for post TURP bladder neck contracture.

In our series we have found significant improvement in all three cases in terms of IPSS QoL score, Post void residue and Q max. Though 1 patient is having mixed urinary incontinence but symptomatically are in control with medications and conservative treatment.

Limitations: Small sample size and retrospective nature are the limitations of our study. However it is a rare conditions and demands longer follow up. Large prospective studies are required for better evaluation.

CONCLUSION

Post TURP bladder neck contracture is an uncommon but devastating complications following TURP Transpubic urethroplasty is a safe and effective option specially for high grade or complex post TURP BNC with improved outcome and quality of life.

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