INTRODUCTION

Posterior urethral distraction defect is a difficult to treat lower urinary tract injury. These usually result from violent external force. Approximately 90% cases are associated with pelvic fracture.

One detailed analysis of the results of posterior urethroplasty showed that the greatest rate of recurrence (29%) was noted in patients with post traumatic membranous lesion. Distortion of lower urinary tract anatomy and function, combined with dense spongiofibrosis involving the affected area, make surgical repair of these strictures challenging even in the best of hands.

Historically single stage, perineal, end-to-end urethroplasty is done for posterior strictures up to 03 cms and with manipulation up to 05 cms. Longer and complex strictures required Badenoch’s pull through procedure, or transpubic anastomotic urethroplasty or two-stage urethroplasty by scroto-urethral inlay. Abdomino-perineal repair was reserved for even more complex posterior strictures.

Posterior urethroplasty seems to have fallen into the domain of selected centres all over the world. This speaks for the challenge it poses to the urologists. We look at the reported success rates with a sceptic eye. The myriad of procedures described to gain few millimetres of extra length is a proof in itself of the predicament. At times, none of these guarantees success.

We improved a new method of bridging the gap with a bladder tube lined with healthy urothelium. The technique is simple enough for adaptation by urologist having medium level experience. The result has been satisfactory on subjective and objective standards.

PATIENT’S DETAIL

A 25 years of age patient had RTA resulting in pelvic fracture and posterior urethral injury. Initially, suprapubic catheterization was done. Ascending and descending urethograms after 3 months revealed good size bladder, competent bladder neck and distraction defect of about 7 cms (Figure 1). Single-stage end-to-end perineal urethroplasty was not feasible, therefore, author’s technique was used for the repair.

Operative Technique: Standard perineal incision was made for end-to-end urethroplasty. Bulbous urethra was dissected out and transected free from proximal scar tissue. Proximal scar tissue was removed until the healthy prostatic urethra was reached. Urinary bladder was then approached extraperitoneally by lower midline incision and mobilized. A flap, based inferiorly, using full thickness of anterior bladder wall was raised. Extending from just above the bladder neck, it was 04 cms in width and 10 cms in length up to the dome of the bladder. (Figure 1). An 18 French size Foley’s catheter was used and distal 05 cms of the flap was rolled over it, keeping the mucosa inside (Figure 2). Resultant ‘tubularised flap’ was then delivered through bladder neck (Figure 3 and 4). The proximal end of the tube was anchored to opening of the proximal prostatic urethra by full thickness single layer of four stitches 12, 03, 06 and 09 o’clock position; allowing a few millimeters of overlap of two ends of urethra (Figure 5). Spatulated end-to-end anastomosis was done between the distal end of the tube and the distal urethra over the catheter (Figure 6).
Suprapubic catheter was placed and bladder closed in two layers. Urethral catheter was removed after two weeks and suprapubic after three.

DISCUSSION

Posterior urethroplasty has been a difficult subject to talk about and controversy still exists regarding time, approach and technique. In one series, single stage end-to-end perineal urethroplasty was reported, having overall success rate of 97% with complete success in 70 patients (85%). Follow-up optical internal urethrotomy required in 9 (11%) patients. Incontinence has not been a major issue because of intact bladder neck demonstrated pre-operatively. The issue of persistence impotence is attributed to severity of pelvic trauma.2

In another series, 93% and 91% success rates were reported for perineal and transpubic urethroplasties, while 54% failure rate for urethroscrotal inlay.5

Other concluded that 5, 10 and 15 years re-stricture rates after anastomatic urethroplasty (82 patients) were 12%, 13% and 14%. The 5, 10 and 15 years re-stricture rates after substitution urethroplasty (84 patients) were 21%, 31% and 58% respectively.6

The outcome of posterior urethroplasties has been more or less same in our setting. But in difficult cases, absolutely tension-free end-to-end anastomosis is not possible, even with urethral manipulation techniques. Moreover, anastomosis of bulbar urethra with prostatomembranous urethra is some times so difficult that the ultimate result is mucosa to fibrous tissue anastomosis even after comprehensive excision of fibrous tissue. This is because of complex posterior distraction defects that we cater.7 These strictures may have history of previous failure of surgery, associated worse pelvic fracture, long distraction defect, excessive fibrous tissue that has become callous. In some patients even making lithotomy position is impossible.

End-to-end urethroplasty should be the first option wherever a tension-free mucosa to mucosa anastomosis is feasible. Problem arises when the gap between the two sheared ends is > 05 cms. Simple end-to-end urethroplasty even with myriads of other techniques of gaining length didn’t result in satisfactory outcome. Confronted with such a wide gap, we devised a new technique of bridging the gap using a bladder flap.

FOLLOW-UP

Till now, complete evaluation of only first case is available with short follow-up. Postoperatively, patient made an uneventful recovery. Pericatheter urethrogram showed no leak on day 14th (Figure 7). Patient remained continent and passed urine freely. Urethroscopy revealed a well-healed anastomotic line, an intact external sphincter, verumontanum and easy passage into the bladder. The pedical of the flap innocuously traversed along the side of prostatic urethra into the urinary bladder. This was resected. Micturating cystourethrogram revealed a competent bladder neck and good calibre urethra (Figure 8). Uroflometry revealed a Q-max (maximum urinary flow rate) of 25 mls/sec.

Short follow-up after 01 month revealed, satisfactory micturation, Q-max 24 ml/sec and patent urethral tube on urethrogram. Patient was continent and potent.

REFERENCES

1. Roehrborn CG, McConnell JD. Analysis of factors contributing to


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