



A case of an iatrogenic vesicourethral fistula following an anastomotic urethroplasty with progressive perineal approach for a posterior urethral distraction defect

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Abstract : A 54 year old male sustained a pelvic fracture injury due to a railway accident. An anastomotic urethroplasty with progressive perineal approach was carried out elsewhere after eight months. He presented to our centre with a per-urethral catheter in place and peri-catheter leak of urine. A diagnosis of an iatrogenic vesicourethral fistula was made. A false passage connecting the bladder to the bulbar urethra following an anastomotic urethroplasty with progressive perineal approach can occur if adequate care is not taken intra-operatively. Identifying the proximal urethra prior to anastomosis by flexible cystoscopy can avoid this complication.

Keyword : urethroplasty, progressive perineal, vesico-urethral fistula



Figure 1 SCOUT with internal fixation nails and fracture pelvis.

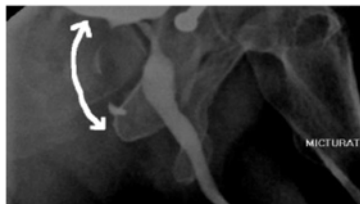


Figure 2 Micturating phase showing true posterior urethra (parallel to white arrow) posterior to the false anastomosis.



Figure 3 Post operative peri-catheter urethrogram showing patent anastomosis.

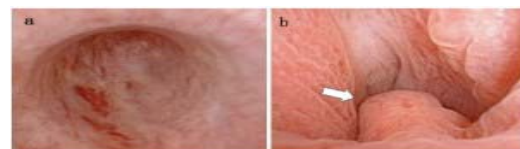


Figure 4 Flexible cystoscopy through Supra Pubic Catheter tract showing a) false tract b) true posterior urethra with Veru.

Case report

A 54 year old male sustained a pelvic fracture injury due to a railway accident. Soon after the injury, he developed urinary retention and had blood at the meatus. He underwent placement of a suprapubic catheter (SPC) and internal fixation of the pelvic fracture. An anastomotic urethroplasty with progressive perineal approach was carried out elsewhere after eight months. Following catheter removal, he voided for 2 days and went into retention. Catheterization (elsewhere) was difficult. He presented to our centre with a per-urethral catheter in place and peri-catheter leak of urine. There were no other co-morbidities or significant past medical or surgical history. General and systemic examination was normal. On examination, a lambda shaped surgical scar was seen in the perineum. The genitalia were normal and a perurethral catheter was in situ. Digital rectal examination was normal. A retrograde urethrogram and a micturating cystourethrogram was performed and revealed

narrowing of the posterior urethra and a possible false neo bladder neck (vesicourethral fistula) (Figs. 1-2) anterior to the funneling of the original bladder neck. A supra-pubic catheter was placed again and after one month he underwent a flexible cystoscopy through the SPC tract. There was a false track leading from the bladder with the intact bladder neck posterior to it. The posterior urethra was identified intact till 1 cm distal to the veru. Thus a diagnosis of an iatrogenic vesicourethral fistula was made. He underwent a redo anastomotic urethroplasty with progressive perineal approach. After catheter removal, a peri-catheter retrograde urethrogram revealed a patent anastomosis (Fig. 3). On catheter removal, he voided freely with a Qmax of 22.3 ml/sec and a post void residue of 63 ml. He had no urinary incontinence.

Discussion

Posterior urethral distraction defects are characterized by loss of continuity of the urethra with distraction of the two urethral ends in more than one plane, with the ends of the urethra separated from each other by a segment that is composed of scar tissue. The two ends of the urethra may be overriding each other (1). As the scar tissue is fibrous and unyielding, these strictures, even if small, do not heal with endoscopic urethrotomy, and provide only temporary relief of obstruction. Excision of this scarred tissue with anastomosis of the bulbar urethra to the prostatic urethra is, therefore accepted to be the standard treatment. Koraitim suggests that the only way to ensure success in repairing a posterior urethral distraction defect is by maintaining meticulous technique and careful attention to the "Gold triad" of steps, namely 1) Complete excision of the scar tissue, 2) Lateral fixation of the healthy mucosa of the 2 urethral ends and 3) creation of a tension free anastomosis (2). A number of factors determine the type of operation required to repair the defect with these three principles in mind. The most important of these is the length of the distraction defect. A fully mobilized urethra can bridge a bulbo-prostatic gap of up to 2.5 cms to achieve a tension free anastomosis. Any defect longer than 2.5 cms needs a method for the urethra to reach the prostatic urethra through the shortest distance possible. The surgeon has quite a few manoeuvres in his armamentarium to achieve this goal in a step wise manner. These include separation of the crura and supra-crural rerouting of the urethra, followed by corporal placcation with longitudinal sutures. If this is sufficient, further length reduction of the required length can be done by an inferior or total pubectomy. (3-5). During the operation, careful consideration of a few factors prevents the formation of iatrogenic vesicourethral false passages, as in this case. The most important fact is the meticulous and complete excision of the scar tissue. The scar tissue should be excised over the tip of the sound (inserted through the supra-pubic tract) till the soft pliable mucosa of the prostatic urethral lumen is seen. Inserting a finger into the rectum while dissecting the bulbar urethra from the perineal body also helps by pushing the prostate anteriorly, which (due to the injury) often retracts away from the perineum. (3) In cases where the prostate is riding high due to the distraction, the finger in the rectum can help in guiding dissection by feeling the tip of the bougie inserted through the supra-pubic tract. This also prevents injury to the rectum while dissecting between the scar tissue incarcerating the prostate, and the rectum. (4) The proximal urethra is traditionally identified by passing a trans-vesical metal sound blindly through the tract of the SPC, guided into the posterior urethra. This is not a reliable method, especially in the concomitant presence of a false tract or a fistula in the para-urethral bladder base region(6). In this case during the initial urethroplasty the surgeon may erroneously introduce the sound into the false tract instead of the posterior urethra and fashion the anastomosis to the bulbar urethra here, thus creating a fistula(5). Although urethrography and MRI may be able to diagnose such false passages, they may not differentiate preoperatively between a false passage and the true posterior urethra(7). The visualization of the veru serves as a landmark, but this can also get atrophied. Direct visualization of the posterior urethra with a flexible scope inserted

through the SPC tract enhances the accuracy of the anastomosis of the posterior urethra to the bulbar urethra (Fig. 4)(8,9).

Conclusion

The main factor in determining the choice of technique in a posterior urethral distraction defect is the length of urethral distraction. The defect can be bridged and a tension free anastomosis achieved with step wise implementation of various manoeuvres. A false passage connecting the bladder to the bulbar urethra following an anastomotic urethroplasty with progressive perineal approach can occur if adequate care is not taken intra-operatively. Identifying the proximal urethra prior to anastomosis by flexible cystoscopy can avoid this complication.

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