

Anastomotic Urethroplasty in Female Urethral Stricture Guided by Cystoscopy – A Point of Technique

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INTRODUCTION

An obliterative urethral stricture of the mid-urethra in a woman with presence of false passage is an uncommon entity. When anastomotic urethroplasty is planned in such a patient, there is fear of anastomosis of distal urethra to proximal false lumen instead of the normal anatomical lumen.^[1] Anastomosis to false lumen can further give rise to complications like failed urethroplasty and urinary incontinence that can increase morbidity as well as the cost of treatment.^[1,2]

We present a point of technique to prevent anastomosis of normal distal urethral lumen to false tract proximally using antegrade cystoscopy.

MATERIALS AND METHODS

Case history

A 35-years-old woman presented with failed voiding following catheter removal. She had history of multiple episodes of failed voiding for 2 years following attempts of urethral dilatation and catheterization. External genitalia including external urethral meatus were normal. Renal function tests, urine analysis, ultrasonography KUB were normal. Her voiding cystourethrogram (VCUG) showed

ABSTRACT

Purpose: During anastomotic urethroplasty for stricture urethra with false passage using standard technique, there remains a chance of anastomosis of normal distal urethra to proximal false lumen. Herein, we present a point of technique in which by using antegrade cystoscope, one cannot just identify and dissect normal anatomical proximal urethral lumen, but also perform some of the steps for anastomosis under direct vision. This will avoid making anastomosis to false lumen and thus leading to further complications. **Materials and Methods:** We report a case of 35-years-female who was presented to us with total mid-urethral stricture with false passage following multiple urethral dilatation attempts. We used antegrade cystoscopy during anastomotic urethroplasty to identify and dissect the proximal end of urethra thereby avoiding anastomosis to false tract. **Results:** We successfully performed anastomotic urethroplasty avoiding false passage. Post-operative Uroflow showed Q max of 18 ml/sec. Voiding cystourethrogram post-operatively showed anastomosis between normal anatomical lumens. **Conclusion:** This modification of using antegrade cystoscopy helps to identify proximal urethral end which in turn helps in avoiding anastomosis to false tract and ensures anastomosis between normal lumens.

Key words: Anastomotic urethroplasty, antegrade cystoscopy, female urethral stricture

complete obliteration of urethra at mid-urethral level with false passage [Figure 1a and b]. The catheter (18 fr) had actually been dwelling in through the false passage all these years. False passage was created because of previous urethral dilatation.

Technique

Under spinal anesthesia, an inverted 'U' shaped incision was made close to anterior half circumference of urethral meatus [Figure 2a]. The urethra was dissected and exposed using a subsymphiseal approach with Hegar dilator in urethra till its obliterated end, which helped in identifying the distal end of stricture. After dissecting the strictured segment (1 cm), urethra was transacted through the stricture. Before opening the proximal blind end of urethra, we performed antegrade cystoscopy using 17 fr sheath and 30° lens.

We used antegrade cystoscopy to verify the proximal blind end of urethra with the help of light of the cystoscope

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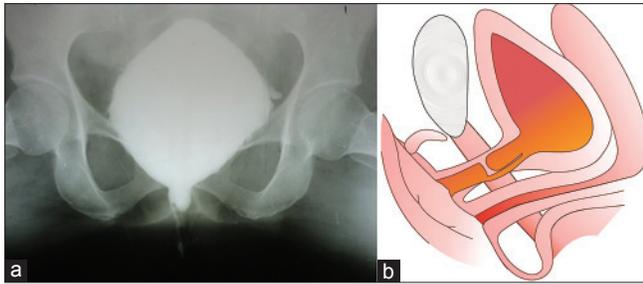


Figure 1: (a) VCUG showing obliterative stricture of mid-urethra with false passage. (b) Diagrammatic representation showing obliterative stricture of mid-urethra with false passage

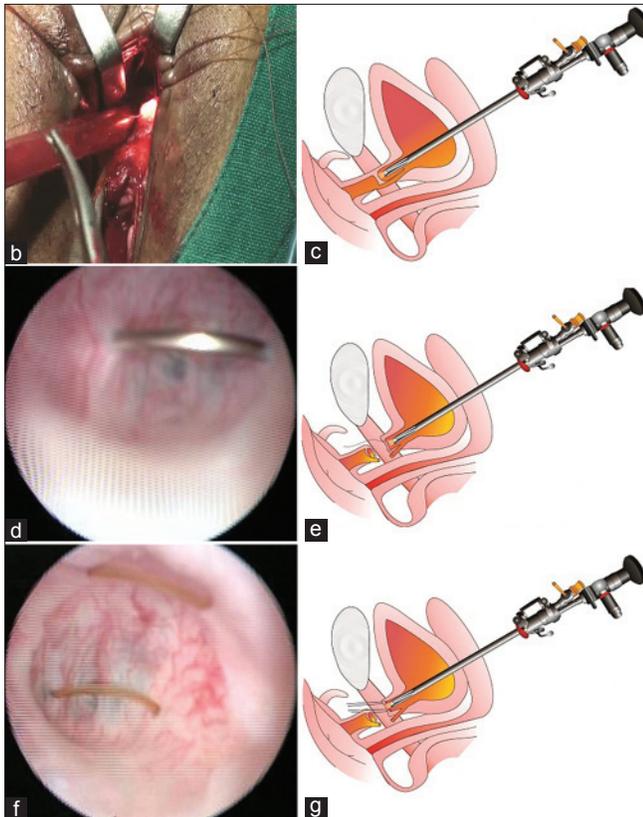


Figure 2(b-g): (b) Identifying proximal blind end of anatomical urethra with the help of light of the cystoscope. (c) Diagrammatic representation showing identification of proximal blind end of anatomical urethra with the help of light of the cystoscope (d) Taking stay suture under direct vision. Needle of the suture material can be seen. (e) Diagrammatic representation showing stay suture being taken under direct vision. (f) Two stay sutures in proximal urethra taken under direct vision. (g) Diagrammatic representation showing two stay sutures in proximal urethra being taken under direct vision

[Figure 2b and c]. The stay sutures were then placed on the tip of proximal urethra and appropriateness of passage of suture was confirmed by antegrade endoscopic vision [Figure 2d-g]. The pull on stay sutures allowed appropriate lateral and circumferential dissection. Once the proximal end of anatomical urethra was dissected, the lumen was opened between two stay sutures. The strictured end of distal urethra was dissected over a 26 F Hegar dilator tip, opened and spatulated. Thereafter tension free end to



Figure 2a: Intra-operative photograph showing the inverted 'U' shaped incision

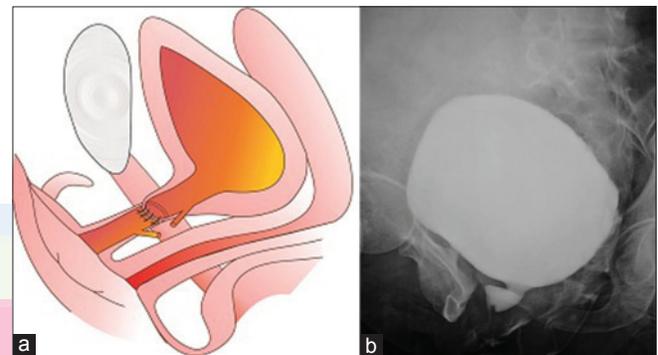


Figure 3: (a) Diagrammatic representation showing completed anastomosis between normal urethral lumens avoiding false passage. (b) Post-operative VCUG showing anastomosis between normal urethral lumens avoiding false passage

end anastomosis of two anatomical urethral lumens was performed using six interrupted suture of 4-0 vicryl on 16 fr Foley catheter [Figure 3a]. Foley catheter was kept for 6 weeks.

RESULTS

At 4 months follow-up, the patient is voiding well with uroflow showing maximum flow rate of 18 ml/sec and post-void residual urine was 15 ml. Her American Urological Association (AUA) symptom score was 5 at 4 months after operation. Voiding cystourethrogram at 4 months [Figure 3b] showed Patent anastomosis with anastomosis between normal anatomical urethral lumens and not with false passage. Patient was continent at 4 month follow-up.

DISCUSSION

The anastomotic urethroplasty in females is mostly performed with the help of Hegar dilator or retrograde

cystoscopy. If the case is having a wide false passage, there remains a possibility of anastomosis of distal urethra to proximal false lumen. The retrograde cystoscopy may not help as the cystoscope may enter through the false passage into proximal urethra giving a false impression of normal urethral passage. This problem is more likely in women on account of short urethra and absence of anatomical landmarks like verumontanum that helps to identify normal urethral lumen in males. Anastomotic urethroplasty is the treatment of choice for short segment strictures of bulbous urethra in males. However, there is a paucity of data in the literature describing anastomotic urethroplasty as the treatment for female urethral stricture. Rovner and Wein^[3] have described anastomotic urethroplasty in females for management of complex urethral diverticula. Podesta *et al.*,^[4] and Hemal *et al.*,^[5] in their separate studies have evaluated pelvic fracture urethral distraction defect in females and performed anastomotic urethroplasty in selected cases. Dorairajan *et al.*,^[6] have even suggested primary repair of the urethra with simple urethral realignment over a catheter, as the procedure of choice for female urethral injury associated with a pelvic fracture. The anastomotic urethroplasty in females can be performed using subsymphiseal route approaching the urethra from Dorsal aspect.^[4,7] Hegar dilator or retrograde cystoscopy is often used to verify the appropriateness of lumen. Female urethral stricture with complete occlusion of lumen with an established false passage is an uncommon entity and doing anastomotic urethroplasty has a risk of anastomosis to false tract.^[1] This can further lead to failed urethroplasty or urinary incontinence. Our proposed modification of using antegrade cystoscopy helps to identify normal anatomical proximal urethral lumen and ensures anastomosis between

normal urethral lumens. Instruments required for antegrade cystoscopy are easily available in set up catering patients with urological ailments. Thus great deal of benefit can be achieved at virtually no extra cost.

CONCLUSION

While undertaking anastomotic urethroplasty for female urethral stricture, this simple modification of using antegrade cystoscopy facilitates recognition of normal anatomical lumens and thus ensures accurate anastomosis.

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