A new technique of double-face buccal graft urethroplasty for female urethral strictures

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ABSTRACT

Objective: Urethral strictures in women are rare compared with those in men. Three defined approaches for their treatment have been mentioned in the available literature: dorsal onlay, ventral onlay, and ventral inlay. Here we describe double-face buccal graft urethroplasty, a new technique for treating obliterative urethral strictures in women.

Material and methods: A 37-year-old woman presented with a catheter-induced stricture, multiple dilatations for which had failed. Micturating urethrogram revealed near-obliterative mid and distal strictures. An inlay incision was made in the posterior wall and then the anterior wall. A buccal graft was inserted as a double-face dorsal and ventral inlay in the urethra.

Results: The patient had normal unobstructed voiding during a follow-up of 6 months.

Conclusion: Double-face buccal graft urethroplasty is safe, feasible, and easy to perform and a good option for women with near-obliterative urethral strictures. To our knowledge, this is the first ever reported case of double-face urethroplasty in a woman.

Keywords: Buccal graft; double-face urethroplasty; female urethral stricture.

Introduction

Urethral strictures in women are rare compared with those in men. However, they may also be underreported due to the easy method of dilatation and self-catheterization that is advised to women. This affects their quality of life.

In the available literature, three defined approaches have been mentioned for their treatment: dorsal onlay, ventral onlay, and ventral inlay.[1-3] Both the onlay procedures require dissection outside the urethra, opening the urethral wall, and augmentation with a graft or flap.

One major issue in the female urethra has been the risk of incontinence. The inlay procedure reduces this risk, as the procedure is performed intraurethrally. The success rate of female urethroplasty varies between 80% and 94%.[4] This could be due to the obliterative or near-obliterative nature of the stricture. We have come across female patients with obliterative strictures who require dilatations more frequently than others. However, there has been no evaluation for the reason of obliterative strictures.

In men with obliterative strictures, non-transection urethroplasty is performed, which includes a double face urethroplasty.[5] We describe a similar new technique of double-face buccal graft urethroplasty for treating obliterative strictures in women. To our knowledge, this is the first ever report on double-face urethroplasty in females.

Material and methods

We present the case of a 37-year-old woman who had a urethral stricture. She had undergone laparoscopic cholecystectomy 3 years ago and had to be catheterized. However, 12 months later, she developed voiding symptoms. She was diagnosed as having a urethral

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stricture, and cystoscopy dilatations were performed. She developed recurrent symptoms and underwent multiple dilatations. She was advised self-dilatation but could not perform it due to urethral pain and urinary tract infections. Therefore, she was referred to us. She exhibited an obstructive uroflow pattern (Figure 1a). We performed urodynamics, which revealed high-pressure, low flow (Figure 1b). Micturating cystourethrogram revealed near-obliterative mid and distal urethral strictures (Figure 1c).

The patient was informed regarding the treatment options; she provided consent for urethroplasty using this new technique. Institutional ethics committee approval was taken as well.

Intraoperative urethrocystosocpy was performed using a 7-Fr Mini Nephrosocpe, which revealed near-obliterative distal and mid urethral strictures. Under anesthesia and sterile precautions, stay sutures were performed. A DeBakey forceps was gently inserted into the urethra and an incision made through the mucosa on the posterior wall form inside (Figure 2a). The incision was widened and extended proximally across the stricture. A buccal graft was harvested and inserted as an inlay (Figure 2b). Quilting was performed and a nasal speculum inserted upside down and opened (Figure 2c). An incision was made from inside on the anterior wall and widened. A buccal graft was inserted as inlay and quilting performed (Figure2d). This is the new technique of double-face buccal graft urethroplasty. An 18-Fr silicone catheter was inserted.

Results

Follow-up uroflow was performed at 3 and 6 months, revealing an unobstructed pattern. The patient's preoperative American Urology Association (AUA) symptom score was 32, which postoperatively improved to 9. The patient has not required dilatations till last follow-up.

Main Points:

- Obliterative non traumatic Male urethral strictures are managed with
- Double Face Buccal graft augmentation Urethroplasty.
- Urethral Stricture in females has been managed by dilatations and CIC across the world.
- Onlay techniques have been advocated in female urethra but are not popular due to risk of incontinence.
- My technique is the Worlds first reported Double Face Buccal graft Urethroplasty in females.
- It is safe, easy to reproduce, no risk of incontinence and ideal for a near obliterative/obliterative non traumatic mid and distal urethral strictures in females.

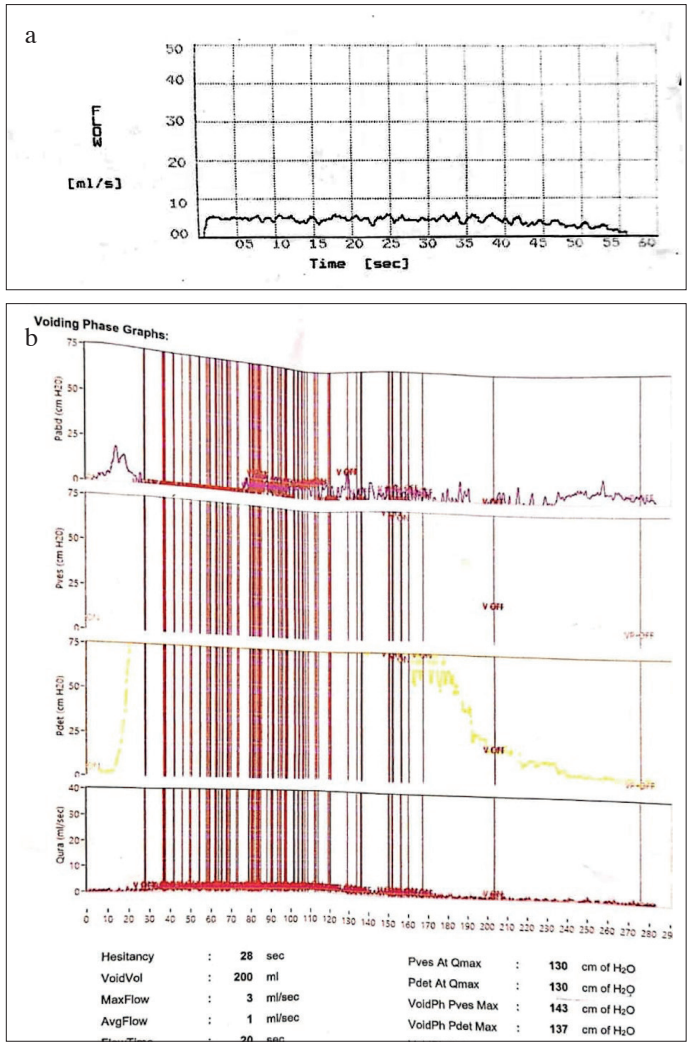

Figure 1. a-c. Obstructed urolfow pattern (a). Urodynamics showing high-pressure, low flow (b). Micturating cytsourethrogram (c)

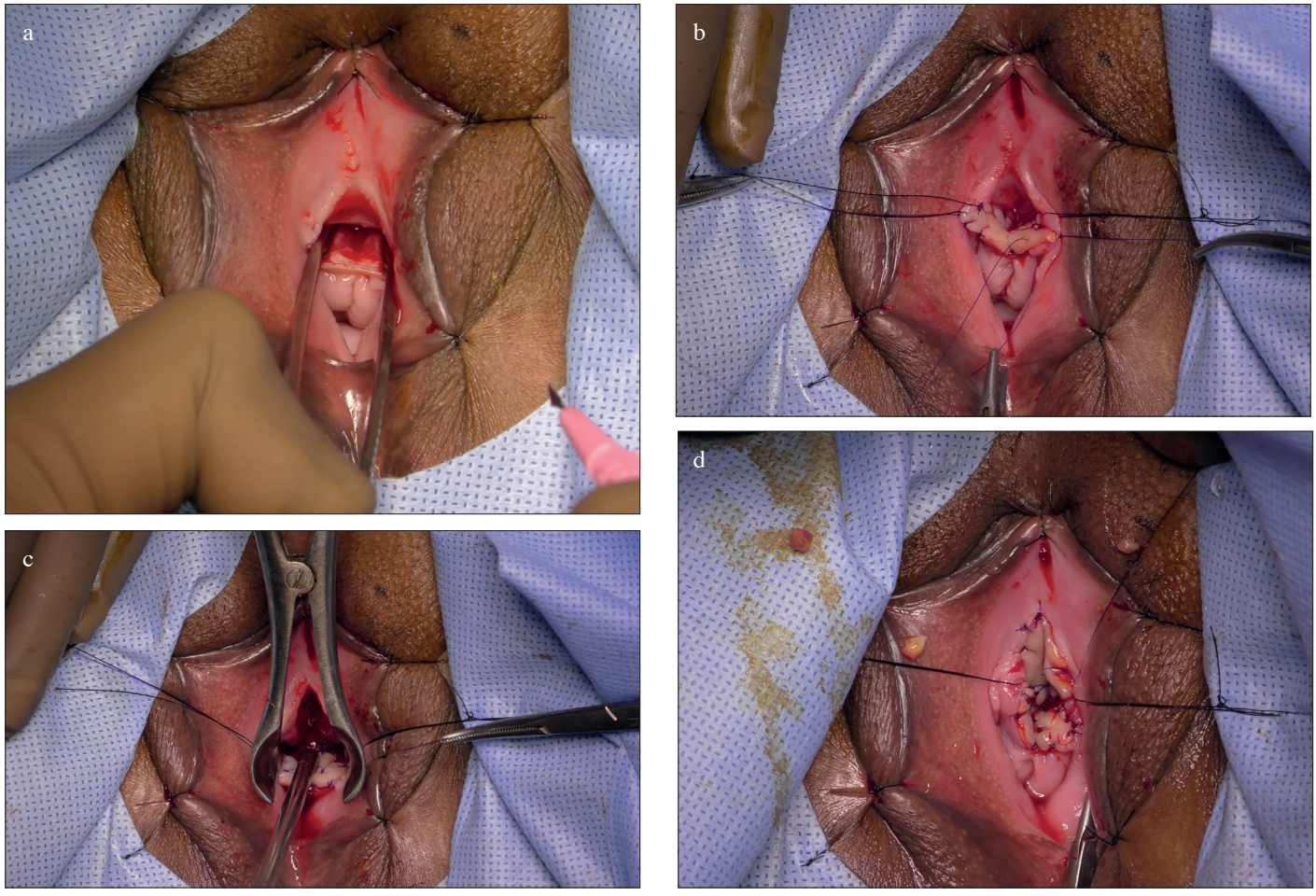

Figure 2. a-d. Incision made on the posterior urethral wall intraluminally (a). Buccal graft inserted as inlay (b). Incision made on the anterior urethral wall from inside the urethra (c). Double-face buccal grafts (d)

Discussion

Similar to the treatment of male urethral strictures, techniques of dorsal and ventral graft/flap urethroplasty have been described for female urethral strictures.[1,2] In men, the type of technique to be used is standardized across high-volume centers.[6] However, in women, there is no standardization of which technique is to be chosen and when. The literature on female urethroplasty is still developing; there are no large case series, and no single approach has been demonstrated to be the best. Risk of incontinence has been the main focus in female urethroplasty. The female urethra approach can be divided in two types: outside the lumen and inside the lumen.

The technique of intraluminal urethroplasty is much better scientifically, as we work from inside the urethra and insert an inlay graft with no risk of incontinence.[4]

However, irrespective of whether an inlay or onlay technique is used, only one wall of the urethra can be augmented. Treatment of near-obliterative strictures requires double-face urethroplasty. This is the first ever report in the literature to describe the technique of double-face buccal graft urethroplasty in women. It comprises an endolunminal surgery with no risk of incontinence. We hope to publish large multi-center experiences on this in future.

In conclusion, double-face buccal graft urethroplasty is safe, feasible, and easy to perform and is a good option for women with near-obliterative urethral strictures.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Kulkarni Reconstructive Urology Center (Protocol number 007/2019).

Informed Consent: Written informed consent was obtained from patient and first degree relative.

Peer-review: Externally peer-reviewed.

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Conflict of Interest: The authors have no conflicts of interest to declare.

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