

## Female Urethroplasty: An Initial Experience at B and B Hospital

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Female urethral stricture is not an uncommon condition however is commonly overlooked cause of female bladder outlet obstruction. Causes of Urethral stricture diseases are almost similar in that of male counterpart. We present our result of dorsal onlay full thickness Buccal mucosa graft urethroplasty in female urethral stricture. This is the first Urethroplasty performed in female in our institute and probably the first urethroplasty done in case of female in the country as a whole.

We evaluated 47 years lady presented with features of Urethral stricture and performed dorsal onlay BMG urethroplasty. She had very uneventful intra operative and post-operative events. She has been voiding very well since the day after removal of indwelling catheter on second weeks of post-operative day. She was quite delighted with the result and been voiding normally, which she never had for last six years. After a month of surgery Uroflometry parameters and sonological findings were absolutely normal. Dorsal vaginal onlay BMG graft urethroplasty could be considered as an effective way to treat female urethral stricture diseases.

**Keywords:** buccal mucosa graft, dorsal onlay, female urethral stricture.

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**F**emale urethral stricture is not an uncommon condition however is very commonly overlooked cause of female bladder outlet obstruction. It occurs in 2.7% to 8% of females presenting with lower urinary tract symptoms.<sup>1</sup>

Definite criteria for female urethral stricture has not been, However,

Defreitas et al. stated that a detrusor pressure (Pdet) of 25 cm of H<sub>2</sub>O and maximum urinary flow rate (Q<sub>max</sub>) of less than 12 ml/s is consistent with obstruction.<sup>2</sup> It is not an uncommon practice of performing repeated urethral dilatations in cases of female presenting with LUTS particularly in elderly which indeed

adversely results into fibrosis due to bleeding and extravasation.<sup>3</sup> Interventions in the form of meatoplasty for distal urethral strictures and grafts or flaps for mid-and proximal-urethral stricture may be an ideal options. Several methods of female urethroplasty have been reported in various small series. We present our technique and results of dorsal onlay full thickness buccalmucosa graft urethroplasty, which is the first ever, Urethroplasty done in female in our hospital B and B and probably the first ever urethroplasty done in female in the country.

### Case Report

She was 47 years lady presented with history of straining while voiding and requiring long time to empty her bladder for last 6 years. She had been managed many centers in the valley with several medications and repeated cystoscopies and dilatations.

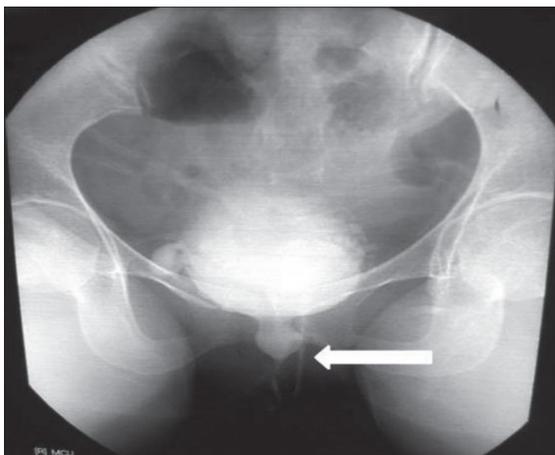


Figure 1: Micturating Cystourethrogram (MCUG) Showing site of stricture

Cystoscopy revealed very tight stricture at mid urethra and was about a centimeter long.

Preoperative Qmax was 6ml/ s and MCUG was performed which revealed proximal urethral dilatation and there was not secondary reflux (Figure 1). She had normal preoperative serum creatinine and urine was sterile.

A semilunar suprameatal incision is made and a plane between the clitoris bodies and the dorsal urethra is created (Figure 2).



Figure 2: Supramental Incision

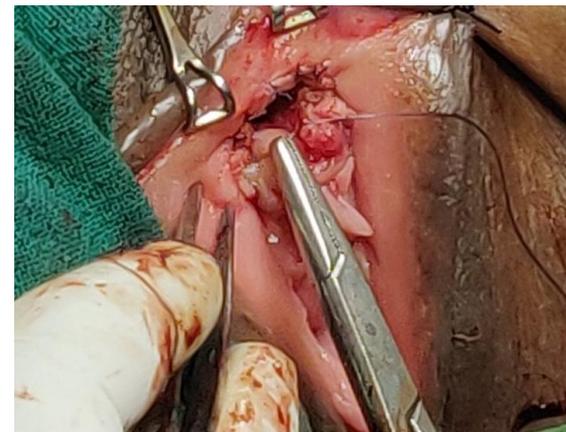


Figure 3: Dissection in progressive harvesting buccal mucosa

Dorsal urethra is incised and the stricture is opened along the guidewire until healthy proximal urethra is encountered. A graft is harvested according to the dimensions of the stricture and is placed with its mucosal surface towards the urethral lumen (Figure 3). Edges are sutured to the edges of the opened urethra with a bilateral running suture. Suturing is started at the proximal urethra and continued up to the meatus. At

the meatus, the edges of the distal graft are approximated to the edge of the suprameatal incision (**Figure 4**).



*Figure 4: Concluding dorsal onlay BMG anchoring*

At first follow-up 2 weeks after surgery, micturating cystourethrogram showed a normal urethra without any proximal dilatation. Uroflowmetry revealed  $Q_{max}$  of 20ml/second and USG post void residual urine was nil. At second follow up 1 month after surgery revealed  $Q_{max}$  of 20ml/sec and was voiding well with nil PVR.

### Discussion

Causes of urethral stricture in female are very much similar as that in male. Stricture occurs usually at distal to external urethral sphincter though can occur in any part of urethra, although it seems to occur most commonly in mid and distal urethra and less in proximal urethra.<sup>3</sup>

Lower urinary tract symptoms in female are evaluated by detailed voiding history including symptoms of stress and urge incontinence and recurrent urinary tract infections. They should be subjected to sonological examination of KUB along with post void residual status and uroflowmetry study. Local examination includes gentle calibration with 10fr catheter and MCUG. Urethroscopy

may be performed but with caution.

Various approaches have been suggested in the limited literatures ranging from conventional Bougies dilatations and internal urethrotomy to various techniques of urethroplasties.

Smith, *et al.* reported their experience with dilatation and intermittent catheterization in seven female urethra stricture patients with seemingly good results, as amongst patients declared cure, none required more than four dilatations.<sup>3</sup> However in non-compliant patients Urethroplasty could be better option.

The dorsal approach for vaginal graft has the same advantages as described in that of male stricture urethra of strong mechanical support and vascular bed provided by clitoral cavernosal tissue, decreasing the risk of diverticula formations. It is a more physiological reconstruction that directs the urinary stream away from vagina and spares the ventral aspect of urethra for further anti-incontinence surgery.<sup>4</sup>

Tanello et al. reported the use of a pedicle flap from the labia minora for the repair of female urethral strictures in two patients.<sup>5</sup> Berglund et al. presented the technique of ventral onlaybuccal mucosal graft urethroplasty for recurrent urethral stricture disease 30 months of follow-up.<sup>6</sup> Swender et al. used the technique of anterior vaginal mucosal flap in eight patients with complete cure in seven patients after a single procedure who previously underwent multiple dilatations.<sup>7</sup> Simonato et al. presented a series of six patients who underwent vaginal inlay flap urethroplasty inspired by Orandi technique

with good results.<sup>8</sup>

It provides a more physiological voiding with urinary stream directed away from vagina and spares ventral urethra for further anti-incontinence procedures. We did not observe any incontinence in the patient during follow-up.

This procedure of dorsal onlay BMG graft seems to be an effective way to treat female urethral stricture. It may be done in cases of mid-and proximal-urethral stricture. It seems that the operative concept of the dorsal BMG graft could be tested in a larger series with a long-term follow-up, and compared with other urethroplasty techniques to further evaluate benefits and pitfalls.

### **Conclusion**

Dorsal onlay vaginal graft urethroplasty for mid- and proximal-urethral stricture is a simple and effective technique, which can avoid repeated painful dilatations and multiple urethrotomies in females. Further studies with more patients and long follow-up are required to endorse the success of this procedure.

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