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ORIGINAL ARTICLE

Versatility of the ventral approach in bulbar urethroplasty using dorsal, ventral or dorsal plus ventral oral grafts

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KEYWORDS

Urethra;
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Graft

ABBREVIATIONS

AU, anastomotic urethroplasty; BM, buccal mucosa; (D)(V)(DV)GU, (dorsal) (ventral) (dorsal

Abstract ***Objectives:*** To investigate the versatility of the ventral urethrotomy approach in bulbar reconstruction with buccal mucosa (BM) grafts placed on the dorsal, ventral or dorsal plus ventral urethral surface.

Patients and methods: Between 1999 and 2008, 216 patients with bulbar strictures underwent BM graft urethroplasty using the ventral-sagittal urethrotomy approach. Of these patients, 32 (14.8%; mean stricture 3.2 cm, range 1.5–5) had a dorsal graft urethroplasty (DGU), 121 (56%; mean stricture 3.7, range 1.5–8) a ventral graft urethroplasty (VGU), and 63 (29.2%; mean stricture 3.4, range 1.5–10) a dorsal plus ventral graft urethroplasty (DVGU). The strictured urethra was opened by a ventral-sagittal urethrotomy and BM graft was inserted dorsally or ventrally or dorsal plus ventral to augment the urethral plate.

Results: The median follow-up was 37 months. The overall 5-year actuarial success rate was 91.4%. The 5-year actuarial success rates were 87.8%, 95.5% and

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plus ventral) graft urethroplasty; VCUG, voiding cystourethrography

86.3% for the DGU, VGU and DVGU, respectively. There were no statistically significant differences among the three groups. Success rates decreased significantly only with a stricture length of >4 cm.

Conclusions: In BM graft bulbar urethroplasties the ventral urethrotomy access is simple and versatile, allowing an intraoperative choice of dorsal, ventral or combined dorsal and ventral grafting, with comparable success rates.

Introduction

Buccal mucosa (BM) is considered the reference standard urethral substitute in graft bulbar urethroplasties, and its dorsal or ventral placement using the dorsal or ventral urethrotomy approaches has become a contentious issue, with no resolution to date [1,2].

In 1953, Presman and Greenfield [3] introduced ventral grafting by a ventral urethrotomy, which gives easy access to the urethra and good visualisation of the stricture. In 1996, this technique was revived by Morey and McAninch [4].

In 1996, Barbagli et al. [5] introduced the novelty of dorsal grafting by a dorsal urethrotomy. Nevertheless, the same authors recognised that the dorsal approach is simpler in the distal bulbar urethra, whereas the ventral approach with ventral grafting is more effective in the proximal bulbar urethra, where the spongiosum tissue is thick [6]. Also they advised that dorsal access might damage erectile function and the bulbar arteries when the dissection from the corpora needs to be very proximal [6,7]. The dorsal urethral mobilisation was shown to be difficult in scarred urethras with marked periurethral fibrosis after previous treatments [8]; even an extensive dorsal approach could cause urethral ischaemia. Therefore, in 2001, Asopa et al. [8] described a different dorsal graft using a ventral urethrotomy approach, stating that the procedure is easier because the urethra is not mobilised. Recently, Kulkarni et al. [9] elaborated a modified dorso-lateral approach which preserves one lateral vascular supply to the urethra. In 2008, we described, for the first time, the combined dorsal plus ventral double graft for repairing very tight bulbar strictures [10].

To investigate the feasibility, efficacy and versatility of the ventral approach, in the present study we retrospectively evaluated and statistically analysed outcomes in 216 patients who underwent graft bulbar urethroplasty using a ventral urethrotomy access, and with the BM placed on the dorsal, ventral or dorsal plus

Table 1 Patients and stricture characteristics in the three study groups.

Variable	DGU	VGU	DVGU
No. patients	32	121	63
Age (years), Mean ± (SD)	39.2 (16.2)	39.2 (13.3)	39.0 (14.3)
Cause of stricture, n			
Unknown	19	83	41
Catheter	6	27	17
Instrumentation	4	8	2
Trauma	3	3	2
Infection	0	0	1
Previous treatment, n (%)[*]	23 (71.9)	84 (69.4)	43 (68.2)
Dilatations	20	26	16
Urethrotomy	19	80	42
Urethroplasty	4	10	2
None	9	37	20
Mean (SD)			
Stricture length (cm)	3.2 (1.1)	3.7 (1.2)	3.4 (1.4)
Range	1.5–5	1.5–8	1.5–10
Stricture length (cm), n			
1.5–2	10	11	9
>2–4	17	85	48
>4–6	5	21	4
>6	0	4	2
Median (range) follow-up (months)	43 (12–107)	27 (12–113)	49 (12–85)

[*] One patient may receive more than one treatment.