It's not just a Little Bite – Exploring the Prevalence of Complications at Oral Mucosa Donor Sites in a Large Urethroplasty Cohort

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Introduction

Urethral strictures are a common cause of lower urinary tract symptoms for men worldwide.[1,2] Substitution urethroplasty using a buccal mucosal graft (BMG) is the gold standard treatment for penile or bulbar urethral strictures > 2 cm. Lingual mucosa can also be used if buccal mucosa is diseased and unfavourable or unavailable.[3]

The innovative technique of using a BMG for urethral reconstruction was originally described by Dr Kirill Sapezhko in 1894.[4] However, it was only in 1993 that El-Kasaby et al.[5] published the promising results of a small case series wherein adult urethroplasty was performed by using BMG. Subsequently, over the ensuing 3 decades, BMG harvesting for urethroplasty has become a widespread practice.

Whilst the urethral outcomes of substitution urethroplasty are well-documented, there is comparatively little research into post-operative complications at the oral donor site.

Objectives

- **Determine the prevalence of complications at the oral mucosa donor site in a large cohort of substitution urethroplasty cases undertaken in a regional Australian centre over 4 years.**
- **Explore the different types of immediate and long-term complications at the oral mucosa donor site.**

Methodology

A cross-sectional analysis of 102 urethroplasty cases, all of which used an oral mucosa graft, that were performed in Toowoomba, Queensland between January 2017 and March 2021.

This cohort contained men and women with a broad spectrum of urethral stricture disease requiring a variety of reconstructive approaches, including primary, staged, re-do, and even transgender urethroplasty.

Conclusions

- **Pain at the donor site was a common complication (86%) immediately after harvesting; however, the prevalence of pain significantly decreased by 1 month (53%) and even further bv 3 months (12%) post-harvesting.**
- **Bleeding, infection, hypergranulation tissue, and long-term difficulty with mouth opening are rare, but clinically significant complications of the oral mucosa donor site.**

References

1. Wessells H, Angermeier KW, Elliott S, et al. Male Urethral Stricture: American Urological Association Guideline. J Urol 2017;197(1):182-190
2. Lumen N, Hoebeke P, Willemsen P, et al. Etiology of urethral stricture disease in the 21st century. J Urol 2009;182(3):983-987
3. Chapple C, Andrich D, Atala A, et al. SIU/ICDU consultation on urethral strictures: the management of anterior urethral stricture disease using substitution urethroplasty. Urol 2014;83(3 Suppl):S31-S47
4. Korneyev I, Ilyin D, Schulthesiss D, et al. The first oral mucosal graft urethroplasty was carried out in the 19th century: the pioneering experience of Kirill Sapezhko (1857-1928). Eur Urol 2012; 62(4):624-627
5. El-Kasaby AW, Fath-Alla M, Noweir AM, El-Halaby MR, Zakaria W, El-Beialy MH. The use of buccal mucosa patch graft in the management of anterior urethral strictures. J Urol 1993;149(2):276-278
6. Kulkarni SB, Kulkarni JS, Surana S, Joshi PM, Management of Panurethral Stricture. Urol Clin N Am 2017;44:67-75.

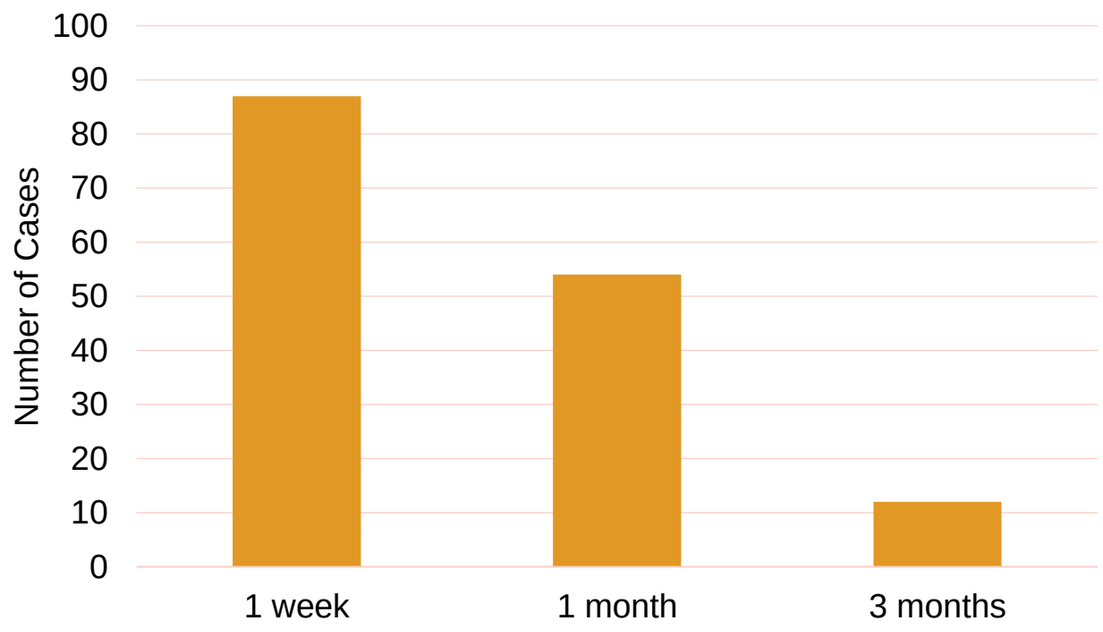
Results

A buccal mucosa graft was used in 101 cases (99%), whilst a lingual graft was used 1 case (1%).

The lingual graft was used in a dorsal inlay re-do urethroplasty. In this case, bilateral BMG grafts (i.e. 1 x right cheek, 1 x left cheek) were harvested and used in a Kulkarni panurethroplasty[6] for a near-obliterative pan-urethral stricture secondary to balanitis xerotica obliterans. When a stricture recurred at the penoscrotal junction of the 2 original grafts, there was insufficient buccal mucosa for the re-do urethroplasty. Consequently, a lingual graft had to be harvested. Unfortunately, the patient developed a pyogenic granuloma at the lingual donor site.

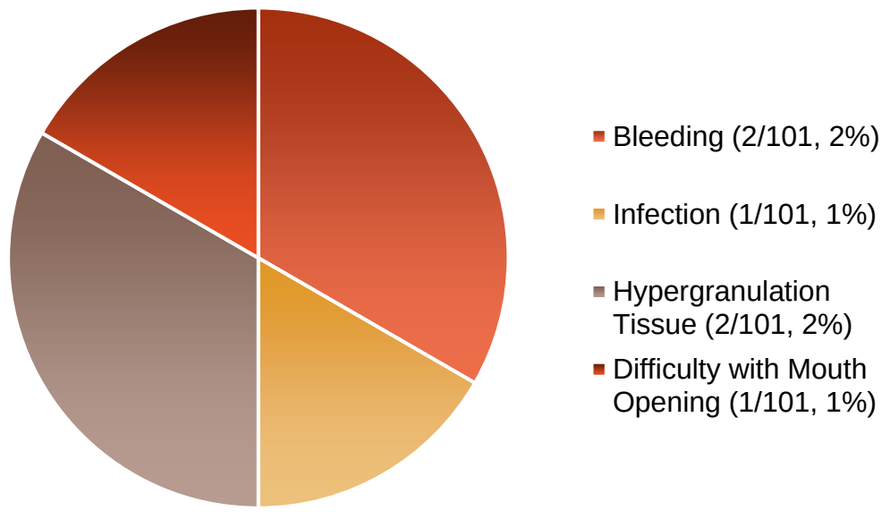
Pain at the BMG donor site was both an immediate and long-term complication. However, as illustrated in Figure 1, the prevalence of pain at the BMG donor site decreased with time.

Figure 1. Prevalence of Pain at BMG Donor Site



Excluding pain, only 6 of the 101 urethroplasty cases that used a BMG had another post-operative complication at the donor site (Figure 2).

Figure 2. Other BMG Donor Site Complications



One of the cases of post-operative bleeding at the BMG donor site occurred on day 7 post-surgery, whilst the other occurred on day 10 post-surgery. In both cases, the bleeding was controlled by applying an adrenaline soaked-gauze to the site and using a tranexamic acid gargle three-times per day for 2 days.

The single case of infection at the BMG donor site occurred on day 5 post-surgery. The infection was successfully treated with a 48 hour course of IV Ampicillin followed by a 2 week course of PO Amoxicillin.