

# Flaps, grafts, and stages: The challenge of penile urethral stricture

Conrad Maciejewski, MD, MSc, FRCSC

Division of Urology, The Ottawa Hospital, Ottawa, ON, Canada

Cite as: *Can Urol Assoc J* 2019;13(12):419. <http://dx.doi.org/10.5489/auaj.6339>

See related article on page 414

In this month's *CUAJ* paper by Hoy et al, authors present a retrospective study comparing treatment modalities for surgical correction of penile urethral stricture.<sup>1</sup> The study evaluates 154 patients, including both single-stage procedures with penile fasciocutaneous flaps (PFFs) and buccal mucosa grafting (BMG), as well as two-stage procedures. The authors found comparable urethral patency rates for all approaches, and urethroplasty technique was not a predictor of failure. Notably, urethroplasty was found to be an independent predictor of complications, where PFFs were found to have an odds ratio of 3.1 relative to BMG, whereas staged procedures showed an odds ratio of 1.4 relative to BMG. These data provide support to the ubiquitous use of BMG in reconstructive urology. Also, these results provide support to judicious use of single-stage repairs where feasible, thus avoiding the lengthy recovery associated with staged urethroplasty, all for similar patency outcomes.

The early experience with BMG for urethroplasty suggested a clear versatility of the technique with acceptable donor site morbidity. While PFFs provided acceptable results, many early studies introduced bias due to the use of healthy-appearing skin in patients with lichen sclerosus-induced strictures, a practice now understood to carry a nearly universal failure rate.<sup>2</sup> A contemporary dataset that carefully selected such patients to appropriate techniques is presented by the authors. From a patency perspective, such data reinforces the notion that substitution-based repairs in the penile urethra, paying close regard to excluding lichen sclerosus patients from flap-based repairs, yield equivalent results. For well-selected patients, PFFs can provide an excellent outcome, ensuring that patients are aware of the increased complication rate.

A recent multi-institutional study by Cotter et al showed several trends in the management of urethral strictures;<sup>3</sup> the group found an 86% decline over seven years in the use of PFFs in the penile urethral, with a concurrent 280% increase in the use of single-stage dorsal repairs. While these trends occur in the absence of randomized comparative studies, they do highlight a clear preference by urethroplasty surgeons for a decreased use of local tissue flaps for repair. Given the equivalent patency outcomes demonstrated in this study, with the high rate of increased complication risk seen in flap-based repairs, these trends appear to be justified.

The authors also present an excellent overview of results for staged urethroplasty. While these data show very good revision rate and results, the effect of an abnormal genital appearance for several months cannot be understated. Many of these patients are adults in earlier stages of life following failed hypospadias repair (68% in this series), and such a healing phase likely has a significant impact on patient well-being. A strict adherence to two-stage repairs in the setting of failed hypospadias is likely unnecessary, and select patients can benefit from the enhanced recovery and similar outcomes of a single-stage repair.

These data also highlight the need for a broad armamentarium of techniques offered by the reconstructive urologist. On the surface, this data supports the decreasing use of PFFs based on similar patency outcomes and higher complication rates. The choice of urethroplasty approach is individualized and must be tailored to patient and stricture characteristics, as well as patient preference. A discussion with the patient about the pitfalls of each potential reconstructive approach is mandatory. Given similar success rates, the opportunity for emphasizing shared decision-making arises, as well as the development and use of a standardized patient decision aids to guide patients through the process.

The authors should be congratulated for developing a comparative study design for an uncommon condition. A study of this size with lengthy and complete followup in the reconstructive urology literature is rare. This study highlights the need for larger-scale comparative studies in reconstructive urology to better guide clinical decision-making and optimize outcomes.

**Competing interests:** The author reports no competing personal or financial interests related to this work.

## References

1. Hoy NY, Chapman DW, Rourke KF. Better defining the optimal management of penile urethral strictures: A retrospective comparison of single-stage vs. two-stage urethroplasty. *Can Urol Assoc J* 2019;13:414-8. <http://dx.doi.org/10.5489/auaj.5895>
2. Venn SN, Mundy AR. Urethroplasty for balanitis xerotica obliterans. *Brit J Urol* 1998;81:735-7. <https://doi.org/10.1046/j.1464-410x.1998.00634.x>
3. Cotter KJ, Hahn AE, Voelzke BB, et al. Trends in urethral stricture disease etiology and urethroplasty technique from a multi-institutional surgical outcomes research group. *Urology* 2019;130:167-74. <https://doi.org/10.1016/j.urol.2019.01.046>

**Correspondence:** Dr. Conrad Maciejewski, Division of Urology, The Ottawa Hospital, Ottawa, ON, Canada; [cmaciejewski@toh.ca](mailto:cmaciejewski@toh.ca)