Affirming Long-Term Outcomes After Contemporary Urethroplasty

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Background

- - Urethral stricture is common and reduces quality of life.
- - Endoscopic management provides only short-term relief.
- - Urethroplasty is the most effective long-term treatment.
- - There are limited contemporary long-term outcome data.

King C & Rourke KF, Urology, 2019

Objective

- To determine long-term success rates of modern urethroplasty (>100 months follow-up)
- and to identify clinical factors associated with stricture recurrence.

Calvo CI et al., J Urol, 2024

Methods

- - Retrospective single-surgeon cohort (2003–2013)
- - n=733, minimum 100 months follow-up
- - Median age: 45 years, median stricture length: 4.7 cm
- - Cox regression for predictors of recurrence
- - Definition of failure: recurrent stricture <16F confirmed by cystoscopy
- - Median follow-up: 12.3 years

Calvo CI et al., J Urol, 2024

Baseline Characteristics

- • 733 patients analyzed
- • Median age 45 years
- • Median stricture length 4 cm
- • 86% had failed prior endoscopic therapy
- • 39% idiopathic, 25% trauma, 10% LS, 9% iatrogenic, 4% radiation, 3% infectious
- • Main techniques: 47% BMG onlay, 28% anastomotic

Calvo CI et al., J Urol, 2024

Results: Long-Term Outcomes

- - Median follow-up: 12.3 years (IQR 10.1–14.6)
- - Recurrence rate: 6%, 10%, 12% at 1, 5, 10 years respectively
- - Mean recurrence-free survival: 15.8 years
- - 89% patient satisfaction; 92% would undergo surgery again

Calvo CI et al., J Urol, 2024

Predictors of Recurrence (Multivariable Analysis)

- Independent predictors:
- - Stricture length (HR 1.10 per cm, 95% CI 1.05–1.15)
- - Etiology (p<0.001)
- • Lichen sclerosus HR 4.46
- • Radiation HR 4.25
- • Infectious HR 5.27

- Non-significant: age, smoking, number of prior endoscopic treatments

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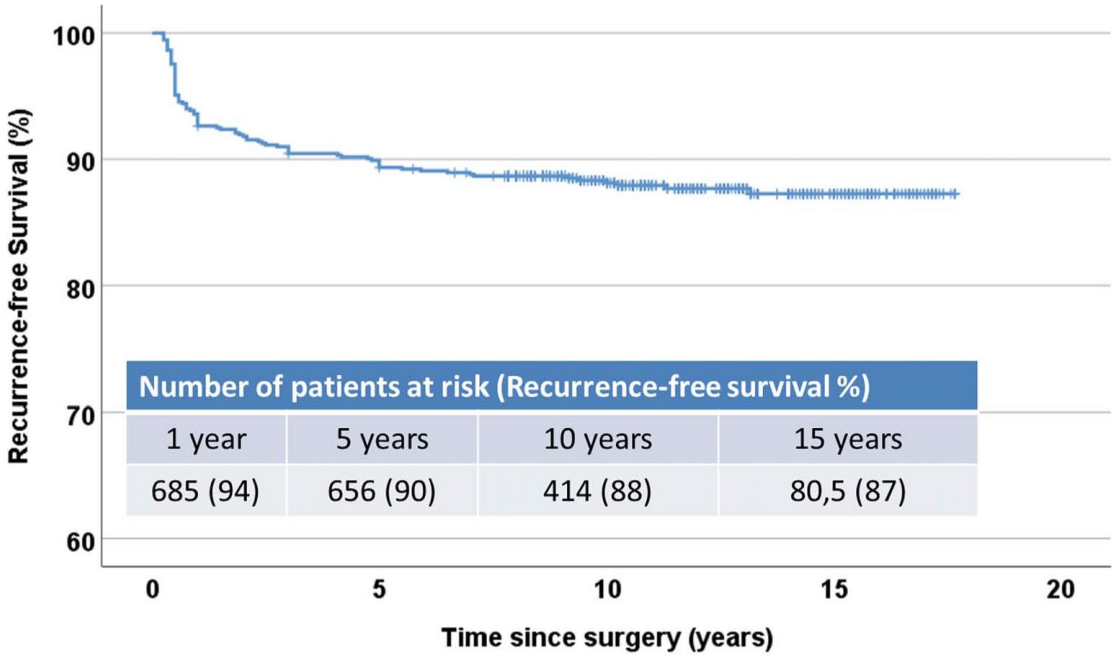
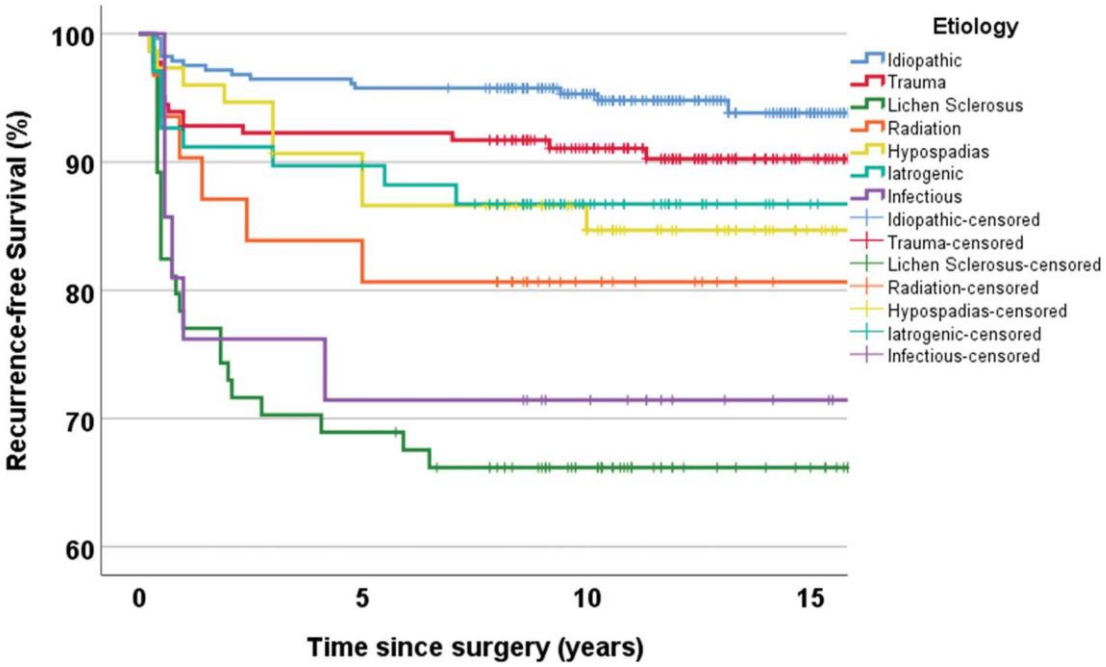
Recurrence free survival



Recurrence free survival



Discussion – Overall Outcomes and Context

- - Confirms durable long-term success of contemporary urethroplasty.
- - 88% stricture-free rate after 10 years, 89% patient satisfaction.
- - Most recurrences within 5 years; rare after 10 years.
- - Affirms guideline recommendation for urethroplasty as gold standard.
- - Supports need for standardized long-term follow-up.

Wessells H et al., J Urol, 2017; Lumen N et al., Eur Urol, 2021

Discussion- Historical Comparison and Definitions

- - Historical data showed 30–50% recurrence at 10–15 years.
- - Improved results attributed to better technique, patient selection, and earlier surgery.
- - Lack of consensus on defining 'success'; cystoscopy remains most sensitive tool.
- - Patient-reported satisfaction (89%) validates long-term functional success.

Andrich DE et al., J Urol, 2003; Barbagli G et al., J Urol, 2014

Discussion – Risk Factors and Clinical Implications

- - Increasing length → 10% higher recurrence risk per cm.
- - LS, radiation, and infection strongly linked to recurrence.
- - LS: chronic inflammatory disease with progressive fibrosis.
- - Radiation: microvascular injury causing delayed recurrence.
- - Infectious strictures: dense fibrosis, technically difficult repairs.

Ahyai SA et al., J Urol, 2015; Esperto F et al., World J Urol, 2022

Conclusion

- - Urethroplasty provides high long-term success and patient satisfaction.
- - Failures may occur even after 10+ years, particularly with LS, radiation, or infectious causes.
- - Reinforces importance of risk-adapted follow-up and counseling.

Calvo CI et al., J Urol, 2024