Results: Between 1995 and 2004, 443 patients of 495 who underwent urethroplasty had complete comorbidity data and were included in analysis. Median patient age was 41 years (range 18 to 90). Median followup was 5.8 years (range 1 month to 10 years). Stricture recurred in 93 patients (21%). Primary estimated stricture-free survival at 1, 3 and 5 years was 88%, 82% and 79%. After multivariate analysis smoking (HR 1.8, 95% CI 1.0-3.1, p = 0.05), prior direct vision internal urethrotomy (HR 1.7, 95% CI 1.0-3.0, p = 0.04) and prior urethroplasty (HR 1.8, 95% CI 1.1-3.1, p = 0.03) were predictive of treatment failure. On multivariate analysis diabetes mellitus showed a trend toward prediction of urethroplasty failure (HR 2.0, 95% CI 0.8-4.9, p = 0.14).
Conclusions: Length of urethral stricture (greater than 4 cm), prior urethroplasty and failed endoscopic therapy are predictive of failure after urethroplasty. Smoking and diabetes mellitus also may predict failure potentially secondary to microvascular damage.

Editorial Comment

In this publication, Dr. McAninch's group ushers us into the next generation of outcomes research in urethral stricture disease. Only with a surgical volume as large as his could one account for all of these variables with enough power to reach meaningful conclusions. It is interesting to note that with long follow-up and when using Kaplan-Meier methods, the success rate of urethroplasty, by procedure type, is generally 5-10% lower than what has been reported in the literature. Anastomotic urethroplasty, for instance drops from 95% to about 85%. The fact that smoking is just as important a risk factor as previous urethroplasty underlines the strong negative impact smoking has on wound healing. Diabetes had a similar strong impact but with diabetes only present in 4% of the cohort, the study was underpowered to detect a statistically significant effect. As only 10% of the cohort was over age 65, this variable might have been better analyzed in 10 year age groups or as a continuous variable.

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Internal urethrotomy and intraurethral submucosal injection of triamcinolone in short bulbar urethral strictures

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Objectives: In clinical practice, internal urethrotomy is an easy procedure and is offered as a first modality for treatment of short urethral strictures. Internal urethrotomy refers to any procedure that opens the stricture by incising or ablating it transurethrally. The most common complication of internal urethrotomy is stricture recurrence. The curative success rate of internal urethrotomy is approximately 20%. Triamcinolone has antifibroblast and anticollagen properties. This study evaluated the efficacy of triamcinolone in the prevention of anterior urethral stricture recurrence after internal urethrotomy.

Methods: Fifty male patients with anterior urethral stricture were randomized to undergo internal urethrotomy with or without urethral submucosal injection of triamcinolone. Using general anesthesia urethrotomy was performed. Triamcinolone (40 mg) was injected submucosally at the urethrotomy site in 25 patients. The patients were followed for at least 12 months and the stricture recurrence rate was compared between the two groups. Results: 23 patients in the triamcinolone group and 22 in the control group completed the study. There were no significant differences in the baseline characteristics of the patients or the etiology of the stricture between the two groups. Mean follow-up time was 13.7 +/- 5.5 months (range: 1-25 months). Urethral stricture recurred in five patients (21.7%) in the triamcinolone group and in 11 patients (50%) in the control group (P = 0.04). Conclusions: Injection of triamcinolone significantly reduced stricture recurrence after internal urethrotomy. Further investigations are warranted to confirm its efficacy and safety.

Editorial Comment

There have been several efforts to increase the efficacy of internal urethrotomy using injection of agents designed to reduce scar formation. Among these, include steroids and botulinum toxin. As described by Wright et al, even a modest increase in the success rate of internal urethrotomy would translate into a much greater preference for urethrotomy over urethroplasty in cost-effectiveness models (1). The current article represents the first randomized trial of steroid injection at the time of internal urethrotomy. The initial results are encouraging. Follow-up was short and the mean time to stricture recurrence was longer in the steroid group. It is possible; therefore, that steroid injection only delays rather than reduces recurrence. Longer follow-up and repeat studies in other clinical settings are needed.

References

1. Wright JL, Wessells H, Nathens AB, Hollingworth W: What is the most cost-effective treatment for 1 to 2-cm bulbar urethral strictures: societal approach using decision analysis. Urology 2006, 67:889-93.

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