

## SUCCESS OF ENDOSCOPIC PROCEDURES AND URETHROPLASTY FOR BULBAR AND PENILE URETHRAL STRICTURES

### Hypothesis / aims of study

Multiple DVIUs (direct vision internal urethrotomies) and dilations are often performed for urethral strictures, although open urethroplasty still provides the greatest long-term success. Here, we investigate our institutional experience with DVIU and subsequent urethroplasty for urethral stricture.

### Study design, materials and methods

We performed a retrospective review of our reconstructive database of patients with urethral stricture, and identified consented adult male patients with bulbar and penile urethral strictures, treated from 1994 to 2008. We then identified the number and type of surgical interventions in these patients. Success after urethroplasty was defined by peak uroflow rate > 12ml/sec with voided volume >150cc or not requiring further clinical retreatment.

### Results

101 patients had bulbar (84) or penile urethral (17) strictures (median age 50.8 years). 38/101 (37.6%) had undergone previous endoscopic procedures (EPs) at outside institutions. Median follow-up time was 2.3 years (3 months-13 years). 143 endoscopic DVIUs and dilations were performed in total, with 56 patients undergoing only one EP and 42 undergoing multiple (2-7). Of 56 patients undergoing one EP, 7/11 patients had success by evaluable postoperative uroflow parameters with adequate voided volume. Of 42 patients undergoing multiple EPs, 5/7 patients had success by uroflow parameters. Overall, 46/101 (45.5%) patients undergoing a first EP vs. 5/42 (11.9%) patients undergoing multiple EPs demonstrated clinical success not requiring further retreatment.

Twenty three patients underwent urethroplasty-- three as primary treatment, 11 after one failed EP, nine after multiple EPs. Techniques included excision with primary anastomosis (6), single-stage onlay with buccal mucosa (11), and 2-stage procedures with buccal mucosa (2) or scrotal skin flap (4). After urethroplasty, 7/8 patients had success by evaluable uroflow parameters, and overall, 17/23 (74%) patients demonstrated clinical success not requiring further retreatment.

Complications after EP occurred in 2.8% (4/143) cases, including infection (3) and acute retention of urine (1), and in 17.4% (4/23) cases after urethroplasty, including acute retention of urine (2), penile shortening (1), and urethral fistula (1).

### Interpretation of results

A significant proportion of patients referred to a tertiary care center have had previous intervention for strictures. Very few patients were followed at our institution, from their initial diagnosis and EP, postoperatively with routine, evaluable uroflow parameters; thus, patients were primarily evaluated for clinical success, as defined by not requiring further retreatment. Less than half of patients experienced clinical success after single EP, and very few experienced clinical success after multiple EPs. Urethroplasty provided the highest clinical success rate. This corroborates previous findings that DVIUs or dilations are less successful than open urethroplasty. This study is limited by the number of patients, variability in surgical technique, and non-standardized follow-up.

### Concluding message

Single-treatment EP was less clinically successful than open urethroplasty; very few patients undergoing multiple EPs maintained ultimate urethral patency. Urethroplasty resulted in overall durable success rates, with minimal complications.

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<b><i>Was this study approved by an ethics committee?</i></b>	<b>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>Institutional Review Board, University of Michigan</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>Yes</b>