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PREDICTORS OF SUCCESS IN URETHROPLASTY

Hypothesis / aims of study

For recurrent urethral stricture disease, the established gold standard is urethroplasty. There has been much in the literature regarding stricture aetiology and predictors of outcome, but limited data regarding other patient factors such as age, stricture location and previous number of endoscopic treatments.

Study design, materials and methods

128 patients were identified from a mixed prospective and retrospective database of all patients treated by a single surgeon in the regional urethroplasty centre. 118 patients had completed data for analysis.

The patients were analysed according to stricture location. Further subgroup analysis was performed on the patients with congenital hypospadias and the over 70-year age group.

Results

118 patients had a mean stricture length of 3.9cm. 6/118 were anastamotic with the remainder using substitution grafting. There were 12/118 (10.2%) recurrences during the follow-up period.

Looking at the analysis on stricture location.

Location	**Penile**	**Bulbar**	**Pan-urethral**
Number	47	63	8
Prev urethroplasty (%)	36.2 (17/47)	6.3 (4/63)	50 (4/8)
Mean prev endoscopic tx	1.79	2.15	3.25
Mean no of procedures to complete urethroplasty	1.85	1	2.5
Complications (%)	29.8	25	75
Recurrence (%)	4.3 (2/47)	7.9 (5/63)	37.5 (3/8)

For the subgroup analyses

Age

Number	Penile	Bulbar	Prev urethroplasty (%)	Mean prev endoscopic treatment	Recurrence (%)
8	2/8	6/8	50 (4/8)	2.75	12.5 (1/8)

Overall, for every year of age, odd of success decreased by 0.047 (p=0.028).

Hypospadias patients

Number	Prev. urethroplasty (%)	Mean prev. endoscopic treatment	Mean no of procedures to complete urethroplasty	Complications (%)	Recurrence (%)
22	90.9 (20/22)	2.05	2.27	36.4	0

3/22 patients developed fistulae and 2/22 were left hypospadic, after discussion with the patient, as their glans was too scarred for reconstruction.

Interpretation of Results

In relation to location, patients with pan-urethral strictures are at a significantly higher risk of recurrence than either penile or bulbar alone, likely relating to the higher risk of scarring at junctions between the different segments of graft required to produce adequate length. In our series, the recurrence rate for bulbar urethroplasty was surprisingly higher than penile, which may relate to patients having more endoscopic treatment in the bulbar group. As expected, the mean number of operations for treatment and complication rates were greater for penile urethroplasty.

Looking at the hypospadias subgroup, these patients again required more operations and had a higher complication rate, due to the multiple previous operations and the general poor quality of tissue both congenital and acquired during childhood reconstruction.

Concluding message

From our data, we conclude that there are a few important messages when counseling patients for urethroplasty.
The highest rate of recurrence is seen in pan-urethral strictures.
Patients with congenital hypospadias can achieve a reasonable outcome, but multiple procedures are likely to be required.
Increasing age is associated with decreased chance of successful outcome so careful patient selection is key.

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