Introduction: We evaluated endoscopically a long-term outcome of using longitudinal vascularized island penile skin flap for tubularized urethroplasty. Material and methods: We retrospectively reviewed the records of 107 patients randomly chosen out of 349 patients with severe hypospadias, aged from six months to 27 years (mean 6.7 years). Patients underwent primary tubularized urethroplasty using longitudinal vascularized island penile skin flap during a period from 1981 to 1989. Investigations involved standardized questionnaire, endoscopy, VCUG and uroflow study.

Results: Urethroscopy was performed in order to examine morphological characteristics of new urethra. It also enabled visualization of the anastomotic site. Pathological alterations of anastomosis site and new urethra were not seen. In 82 pts. new urethra was regular and smooth channel while in 25 pts. areas of infolding were seen. Uroflow study showed normal flow rate adjusted for age in 84 patients. In 23 patients flow below the normal range was noted, without clinical voiding problems. VCUG demonstrated evidence of moderate stenosis located in glanular urethra in 14 and at the site of proximal anastomosis in 9 cases. These patients were successfully treated with dilation, but in 8 endoscopic urethrotomy was necessary.

Conclusions: Endoscopy of tubularized urethroplasty is reliable method for evaluation morphological characteristics of neourethra. Also, it enable successful treatment of postoperative stenosis in long-term follow up.

ENDOSCOPIC EVALUATION OF TUBULARIZED URETHROPLASTY FOR HYPOSPADIAS REPAIR: LONG-TERM FOLLOW UP

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OBJECTIVES
We evaluated endoscopically a long-term outcome of using longitudinal vascularized island penile skin flap for tubularized urethroplasty. This technique has first been described in 1981, in Germany.

MATERIAL AND METHODS
Since then, until 1989, the technique was performed as a primary procedure by a single pediatric urologist (Sava V. Perovic) in 349 patients with severe hypospadias, aged 6 months to 27 years. The length of the new urethra ranged from 2 to 7 cm, mean 4.3 cm. From a total of 349, 107 randomly chosen patients called for evaluation and took part in the study during 1997. During the first 6 months after primary repair RE-DO surgery was necessary due to diverticula in 8 patients and stricture in 4 patients. Postoperative period ranged from 8 to 16 years, with the mean of 11 years. The studied patients were grouped according to age in four groups: 4-11 years, 12-14 years, 15-18 years, and over 19 years. Investigations included questionnaire, uroflowmetry, voiding cystourethrography, and endoscopy.

RESULTS
Urethroscopy was performed in order to examine morphological characteristics of new urethra. It also enabled visualization of the anastomotic site. Pathological alterations of anastomosis site and new urethra were not seen. In 82 pts. new urethra was regular and smooth channel while in 25 pts. areas of infolding were seen. Uroflow study showed normal flow rate adjusted for age in 84 patients. In 23 patients flow below the normal range was noted, without clinical voiding problems. VCUG demonstrated evidence of moderate stenosis located in glanular urethra in 14 and at the site of proximal anastomosis in 9 cases. These patients were successfully treated with dilation, but in 8 endoscopic urethrotomy was necessary.

CONCLUSIONS
Endoscopy of tubularized urethroplasty is reliable method for evaluation morphological characteristics of neourethra. Also, it enable successful treatment of postoperative stenosis in long-term follow up.

Urinary flows were analysed by comparing the maximum flow rate to standard published values adjusted for age.

The questionnaire was administrated consisting of 7 items about different aspects of the genitals and was filled by either patients or their parents. Satisfaction with each of them was rated on a 3-point scale from unsatisfied to very satisfied.

<table>
<thead>
<tr>
<th></th>
<th>Unsatisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
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<tr>
<td>Penile size</td>
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<td>Glanular size</td>
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<td>82</td>
<td>25</td>
</tr>
<tr>
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<td>13</td>
<td>32</td>
<td>62</td>
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<td>5</td>
<td>49</td>
<td>53</td>
</tr>
<tr>
<td>Penile appearance</td>
<td>14</td>
<td>61</td>
<td>32</td>
</tr>
</tbody>
</table>
Voiding cystourethrography shows the patency of new urethra and the site of proximal anastomosis (arrow).

The site of anastomosis between new urethra and native urethra. New urethra is a regular and smooth tube.

Good patency of the new urethra, but the tube is creased.

The anastomotic site shows partial irregularity (arrow).

Moderate stenosis at the anastomotic site without symptoms.