Interim analysis of the POIROT trial: Post-Operative Imaging after urethroplasty with peri-catheter Retrograde urethrography Or Trial of voiding with voiding cysto-urethrography

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Introduction
There is no clear standard about how to perform early postoperative imaging after urethroplasty:
- Peri-catheter retrograde urethrography (pcRUG)?
- Voiding cysto-urethrography (VCUG)?

To date, no direct comparative studies

Aim of this study: To directly compare pcRUG and VCUG as early postoperative imaging modalities after urethroplasty

Materials & Methods
- Prospective within-patient comparison
- Study population: adult, male patients undergoing early postoperative imaging after urethroplasty
- Practical execution:
  - pcRUG: 5 Fr feeding tube next to catheter
  - 10 min later: “if no significant extravasation”
  - VCUG
- 4 weeks after execution: blinded assessment of imaging studies by two experienced clinicians (reviewer 1: NL; reviewer 2: MW)
- Another 3 weeks later: new blinded assessment of imaging studies by reviewer 1
- End-points of interim analysis:
  - No in diagnosis of significant extravasation
  - Inter- and intraobserver agreement
  - No in radiation exposure

Results

<table>
<thead>
<tr>
<th>Patients (n = 25)</th>
<th>Median (IQR)</th>
<th>Stricture location, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Penile</td>
<td>Bulbar</td>
</tr>
<tr>
<td></td>
<td>6 (24)</td>
<td>17 (68)</td>
</tr>
<tr>
<td>Stricture etiology, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idiopathic</td>
<td>10 (40)</td>
<td></td>
</tr>
<tr>
<td>Iatrogenic</td>
<td>11 (44)</td>
<td></td>
</tr>
<tr>
<td>External trauma</td>
<td>3 (12)</td>
<td></td>
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<tr>
<td>Lichen sclerosus</td>
<td>1 (4.0)</td>
<td></td>
</tr>
<tr>
<td>Median (IQR) stricture length, cm</td>
<td>3.5 (1.5-5.5)</td>
<td></td>
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<tr>
<td>Urethroplasty type, n (%)</td>
<td></td>
<td></td>
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<tr>
<td>Anastomotic repair</td>
<td>11 (44)</td>
<td></td>
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<tr>
<td>Free graft urethroplasty</td>
<td>9 (36)</td>
<td></td>
</tr>
<tr>
<td>Second stage Johanson with graft</td>
<td>3 (12)</td>
<td></td>
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<tr>
<td>Combined</td>
<td>2 (8.0)</td>
<td></td>
</tr>
<tr>
<td>Median (IQR) time until imaging, d</td>
<td>16 (9-16)</td>
<td></td>
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</tbody>
</table>

Table 1. Baseline characteristics

- All patients underwent pcRUG
- 8 patients (32%) underwent no formal VCUG
  - 3/25 (12%): significant extravasation
  - 5/25 (20%): unable to void during exam
- No significant contrast extravasation on VCUG after negative pcRUG
- Inter- and intraobserver agreement of pcRUG: 0.78 and 1.00
- Inter- and intraobserver agreement of VCUG: 0.82 and 1.00
- Median (IQR) radiation dose (mGy/cm²):
  - pcRUG: 122 (73-143)
  - VCUG: 203 (172-307)

CONCLUSION
These data suggest to prefer pcRUG over VCUG as early postoperative imaging after urethroplasty

- No loss of diagnostic yield
- Less radiation exposure
- Avoidance of patients being unable to void during examination

p < 0.001