Close Monitoring In the First Year after Hypospadias Repair Results in Early Detection of Urethrocutaneous Fistulas (UCFs)

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Background

- Tubularized incised plate (TIP) urethroplasty is a common technique for hypospadias repair

- Cited complications include urethrocutaneous fistula (UCF), meatal stenosis, dehiscence, hematoma, recurrent ventral curvature. Most common are UCFs

- Previous literature estimates that ~64% of complications occur within 6 weeks, and 80% within one year
  - Recent evidence reports a median time to complication of 1.2 years
Hypothesis

- We hypothesize that majority of UCFs occur within the first 6 months post-TIP urethroplasty.

- Early detection immediately after occurrence (defined here as within 1 week post-catheter removal) may allow for non-surgical management of UCF.
Objectives

- Identify post-TIP urethroplasty time to fistula (TTF)
- Review treatment strategies for post-TIP urethroplasty UCF, including the role for conservative management with catheterization
Methods

Study Design: Retrospective review of prospectively collected data

Setting: Tertiary Children’s Hospital

- Consecutive TIP repairs between 2008-2019 (n=733)
- Staged repairs, other hypospadias repair techniques, and redo cases excluded (n=303)
Methods

**Primary outcome:** Time to UCF

**Variables:** 1) Time to UCF, 2) Age at repair, 3) Follow up duration, 4) Meatal location, 5) Ventral curvature before/after degloving, 6) Pre-operative testosterone stimulation (PTS), 7) Anesthetic type (caudal versus dorsal penile block)

- Photograph check-ins q3days over first 4 weeks post-operatively by NP or hypospadias parent advocate
Methods

**Statistical analysis:** Time to UCF analyzed using Kaplan Meier curves

Mean time to UCF detection compared between patients using independent T Tests:

1) With/without PTS
2) Caudal versus DPB
3) Distal versus proximal hypospadias
4) Ventral curvature >30 degrees versus <30 degrees
## Results

- **430 patients included in analysis**

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<tr>
<td><strong>Age; months (median)</strong></td>
<td>15.6 (13-20.7)</td>
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<tr>
<td><strong>Follow-up; months (mean)</strong></td>
<td>20 +/- 22</td>
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<tr>
<td><strong>Hypospadias type</strong></td>
<td></td>
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<tr>
<td>Distal</td>
<td>n=307 (71%)</td>
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<tr>
<td>Mid</td>
<td>n=76 (18%)</td>
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<tr>
<td>Proximal</td>
<td>n=47 (11%)</td>
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Results

- 32 (7.4%) UCFs identified with a median time to UCF 6.3 (IQR 1.2-26.2) months

- Difference in mean time to detection of UCF in patients 1) with and without PTS (6.6 +/- 3.3 vs 17.7 +/- 4.1 mos, p=0.05), and 2) with caudal versus dorsal penile block (11.8 +/- 13.2 vs. 20.9 +/- 25.4 mos, p=0.05)

- Mean time to UCF detection similar for hypospadias location (13.9 +/- 15.8 vs 12. +/- 15 mos, p=0.83), and with ventral curvature >30 degrees versus <30 degrees (10.3 +/-16.7 vs 13 +/- 15.4 mos, p=0.70)
Results

UCF’s were detected in:

- 14 patients (52%) by 6 months
- 18 (67%) by 12 months
- 27 (100%) by 39 months

Median time to UCF post-TIP urethroplasty = 6.3 months

In 5 (16%) patients, whose UCFs developed within a week post-catheter removal, a catheter was reinserted for an additional 7-10 days.

All these 5 fistulas resolved spontaneously once the catheter was removed, leaving 27 to be managed surgically.
Conclusions

- 52% of all UCFs detected by a median time of 6 months

- 2/3 of all UCFs detected by 12 months post-TIP urethroplasty

- An active surveillance protocol with regular photograph check-ins within the first 4 weeks post-catheter removal may result in earlier detection, and allow for conservative management for fistula repair
Thank you for listening!