Penile curvature in proximal hypospadias; what is the main contributing factor?

Harmit Ghattaura, Andre Stanley, Laura Jackson,
Karim Awad, Mark Woodward, Mohamed Shalaby

Introduction

The STraighten And Close 1 (STAC) repair corrects severe penile curvature (PC);

- ventral degloving
- urethral transection with mobilisation (UT)
- ventral corporotomies (VC)

Our aim was to assess which contributes greatest to the correction of PC.

Methods

Searches of prospectively maintained databases identified patients who underwent primary STAC1 repair between 01/03/2021–30/06/2024. Case notes were reviewed to collect;

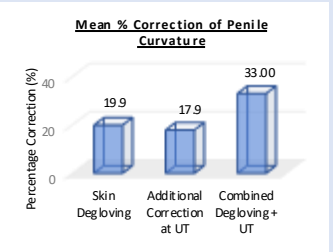
- demographic data
- measurements of curvature
- ventral lengthening
- overall correction at STAC2

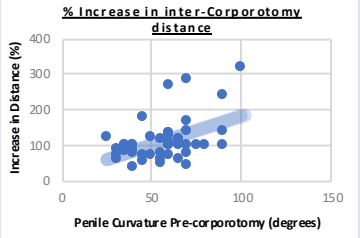
Results

55 boys underwent STAC1 repair at mean age 2.7yrs (1.1-6.6).

- Initial median curvature was 90-degrees (40–120), by visual inspection.
- reducing to 70-degrees (30–110) after degloving; using goniometer
- and further to 60-degrees (25–100) after UT; using goniometer

Median reduction in PC was 15-degrees (0-60) after degloving and 10-degrees (0-50) after UT





- 3 VC - resulted in a mean 112% (40-320%) increase in length
- Greater residual PC achieved greater lengthening (R^2-0.23 $p<0.0005$)

- 32 boys went on to have STAC2 surgery with median PC of 0-degrees (0-20)
- 5 patients (15.6%) needed dorsal plication at STAC2 for residual PC≤30-degrees
- 1/55 (3.1%) patient required a re-do single VC

Pre-STAC1 PC >90-degrees were more likely to have PC ≥ 60-degrees after degloving and UT vs <90-degree group ($p<0.02$), and vs 90-degree group ($p<0.01$)

	Correction; mean % (IQR)		
Group	**Degloving**	**Additional Correction - UT**	**Degloving + UT**
Overall	19.9 (10-30)	17.9 (0-29.4)	33 (22.2-45.8)
< 90 degrees (n=8)	13.8 (0-27)	4.6 (0-9)	17.7 (0-33.3)
90 degrees (n=16)	25.3 (16.7-33.8)	19 (8.9-23.8)	40.6 (33.3-50)
>90 degrees (n=18)	16.7 (10-30)	22.1 (3.6-33.3)	33 (15-45.8)

Conclusions

- **Significant PC remains after degloving and UT; corrected by 3 VC in 81.8% of patients rising to 96.6% after dorsal plication at STAC2**
- **The risk of re-do corporotomy is low (3.1%)**
- **The more severe the degree of PC; the greater the lengthening achieved by VC**