Intraoperative Laser Angiography in Bladder Exstrophy Closure

A Simple Technique to Prevent Catastrophic Penile Injury

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COMPLETE PRIMARY REPAIR OF EXSTROPHY

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Classic Bladder Exstrophy (N= 18)
Cloacal Exstrophy (N= 6)

18 performed on day one of life

Dry intervals (N=21)
CASE REPORT

Penile loss following complete primary repair of bladder extrophy
Potential Reasons

Direct Vascular Injury
Vasospasm
Compartment Syndrome
How to limit vascular compromise

- Sound surgical technique
- Adequate hydration
- Neuroaxial blockade

Figure 2  Right granular atrophy following CPRE.
Algorithm

Dissection of Bladder and BN

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Measure Penile Perfusion
(Intraoperative Laser Angiography)

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Above Threshold

↓

CPRE

Below Threshold

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Staged Approach
Study

1) Beginning of Case
2) Initial Dissection
3) Pubis Together
4) End of Case

CPRE?  Staged?
Study (Surgeon is Blinded)

1) Beginning of Case

2) Initial Dissection

3) Pubis Together

4) End of Case

PEDiatric Urology MIDWEST Alliance
Results (N=6 Male)

1) Beginning of Case
   - 341%

2) Initial Dissection
   - CPRE (4) → 76.5%
   - Staged (2) → 141%

3) Pubis Together
   - 128%

4) End of Case
   - 304%
Female Exstrophy
Intraoperative Laser Angiography
Conclusions

Easily to use

Penile Perfusion is reduced when pubis is apposed.

Marked reduction in penile blood flow may occur without any outward clinical signs.

In the immediate postoperative period, there may be greater reduction with CPRE as opposed to a staged repair.
Objectives

Prospective Evaluation of
Penile Viability
Penile Length and Width
Long Term Penile Function
Postoperative Day 1
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