The persistent Cloaca

Duncan Wilcox
Common Channel
Bladder
Vagina
Bowel
Outline

• Short term outcome
• Long term outcome
• Prospective study on bladder and bowel function
Surgical Complications

- 22 girls median age 10 months
- Complications
  - Severe (3-14%)
    - 2 urethral stenosis
    - 1 complete stenosis of reconstruction
  - Moderate
    - 2 asymptomatic short residual common channels
    - 3 had minor stenosis of introitus
Renal Outcome

- 32 (50%) developed chronic renal failure
- 11 (17%) end stage renal failure
- 4 (6%) renal transplantation (3 awaiting transplant)
- 4 (6%) mortality from renal failure
Urological Abnormalities

- 53 patients (83%) had an abnormality of the urinary tract
  - renal structural abnormalities
  - abnormal renal position
  - ectopic ureters
  - VUR
  - Bladder abnormality
Predictors of CRF

* P < 0.05
Faecal continence 60%
- 28% normal bowel movement
- 30% require regular enemas
## Results – Bowel Function

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<thead>
<tr>
<th></th>
<th>GOOD</th>
<th>FAIR</th>
<th>POOR</th>
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<tr>
<td>LOW</td>
<td>6</td>
<td>4</td>
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<td>2</td>
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<tr>
<td>CLOACA</td>
<td>1</td>
<td>3</td>
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<tr>
<td>TOTALS</td>
<td>9</td>
<td>11</td>
<td>6</td>
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<tr>
<td></td>
<td>(34%)</td>
<td>(42%)</td>
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<tr>
<td>Review results</td>
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CLOACA:
- Review results:
  - 2 Good
  - 4 Fair
  - 6 Poor

**Overall:**
- 9 Good
- 11 Fair
- 6 Poor

**Percentage:**
- Good: 34%
- Fair: 42%
- Poor: 23%
Continence Outcome

n = 50

URINARY CONTINENCE  n

- Voids spontaneously  11  22%
- CIC  6  12%
- Reconstructive surgery  23  46%

TOTAL CONTINENCE  40  80%
## Results – Urinary Function

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<td>10 (38%)</td>
<td>11 (42%)</td>
<td>5 (20%)</td>
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Additional Surgery

Reconstructive Surgical procedures mean 4.7 (Range 2-9)

- Mitrofanoff formation 18
- Bladder Augmentation 17
- Bladder neck reconstruction 12
- Bladder neck closure 6
- ACE 11
Voiding Continence
n=11

- <3cm: 8
- >3cm: 3
- Good BN: 11
- Poor BN: 0
- Renal N: 8
- Renal ABN: 3
Urinary control

- Normal 65%
- CIC 24%
- Incontinent 7%
- Urinary diversion 4%

Hendren 1992
Incontinence of Urine

- Wiener ‘74 31%
- Hassink’83 22%
- Rintala ‘94 (Adult FU) 33%
- Boemers ‘95 24%
- Pena ‘95 10%
Sacral Anomalies

Abnormal sacrum  21 (47%)
  14 - normal spinal cord
  7  - abnormal spinal cord

Normal sacrum   24 (53%)
  4  - abnormal spinal cord
  20- normal spinal cord

Sensitivity 66%, Specificity 66%
Patient LC

Lipoma of cord
Effect of PSARP

- 32 patients
- Temporary anomaly 3
- Permanent anomaly 3
  (Boemers 1995)
• Posterior Saggital Approach widely used for 10-15 years.

• Pathology
  ▪ pelvic plexus may be a midline structure
  ▪ plexus intimately associated with urethral fistulae.

  Davies ‘99
Urodynamics

Bladder function assessed by Natural fill urodynamics pre & post reconstructive surgery. Classified as normal or abnormal

PRE 0.2 -9 (mean 3) months

POST  6-24 (mean 12.9) months
Natural Filling Urodynamics
3 Fill and void cycles

Intravesical pressure (Pves)
Abdominal pressure (Pabd)

Pves - Pabd = Detrusor pressure (Pdet)
Results
PRE Reconstruction

**CLOACA n = 10**
- 5 common channel <3cm
- 5 common channel >3cm

Abnormal Bladder function in 9/10
- Neurogenic DO 6
- Idiopathic DO 3

* DO-Detrusor overactivity

**ARM n = 20**
- 12 Male
- 8 Female

Abnormal Bladder function in 12/20
- Neurogenic DO 3
- Idiopathic DO 3
- Dyssynergia 3
- Inadequate 3
Results
POST Reconstruction

Bladder function pre & post compared
- Urodynamic pattern
- Bladder emptying efficiency
- Bladder capacity
- Clinical status & intervention

Change (deterioration) in bladder function
CLOACA = 5/10  ARM = 1/20

P=0.04  p=0.7

*Wilcoxon signed rank
Deterioration in bladder function

CLOACA n=5

- Change in urodynamic pattern from hypercontractile to Inadequate (atonic) in 4/5
- Significant increase in bladder capacity
- Patients void only by abdominal straining
Bladder function abnormal in 29 of the 45 patients
12 patients displayed gut wave activity prior to detrusor contraction
• 9 of the 12 had an abnormal sacrum or abnormal spinal cord

• Most pronounced in 7 patients with spinal cord lesion $p=0.5$
Patients

• 24 Adult patient (>16 years)
  ▪ 3 Lost to follow up

• Gynaecology review in 21
  ▪ Menstrual history, record of sexual activity & pregnancies
  ▪ Clinical examination or EUA
Outcome at Puberty

- Normal Menstruation 13 32%
- Hematometra 15 36%
- Vestigial uterus 8 20%
- Early puberty 3 7%
- Under investigation 2 5%

* 6/10 diagnosed absent uterus at laparotomy developed uterine function
Adult Outcome

21 women aged 17-32 (mean 24) years

• Sexually active 12 (57%)
• Adequate Vagina 6 (29%)

(6/18 additional adult vaginal surgery)

No pregnancies to date