Urinary Diversion

Follow-up

► The Ideal Solution to “Incurable VVF”
  - Replaces damaged storage capacity
  - Can replace damaged continence mechanism

► It is ideal, but is it safe and practical?
The Only Series

► Jos, Nigeria, 1996-2002
  - 41 patients
  - 34 with useable data
► Patient Parameters
  - Age: 29.7 yrs
  - Time with VVF: Ave: 10.5 yrs; Max. 29 yrs
  - Prior Surgeries: Ave: 2.6; Max 11

Patient Parameters

► Reason for Diversion:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inoperable VVF</td>
<td>9</td>
<td>26%</td>
</tr>
<tr>
<td>Loss of Urethra</td>
<td>5</td>
<td>15%</td>
</tr>
<tr>
<td>SUI</td>
<td>18</td>
<td>53%</td>
</tr>
<tr>
<td>SUI; Failed Sling</td>
<td>2</td>
<td>6%</td>
</tr>
</tbody>
</table>
## Type of Diversion

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>%</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainz II</td>
<td>23</td>
<td>68</td>
<td>2.0hr</td>
</tr>
<tr>
<td>Ureterosigmoidostomy</td>
<td>11</td>
<td>32</td>
<td>2.6hr</td>
</tr>
</tbody>
</table>

## Surgical Results

- Jos, Nigeria, 34 patients

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry</td>
<td>23</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Nighttime Incontinence</td>
<td>7</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Recurrent RVF</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Unable to complete procedure</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Surgical Complications

- Evangel VVF Centre, Nigeria
  - 34 patients, 1996-2002
  - Overall Complications: 62%
    - Major: 26%
    - Minor: 35%
    - Death: 6%
  - Karshima J and Kirschner C, unpublished

- University of Miami
  - 90 patients 1988-2002
  - Overall Complications: At least 76%
    - 150 complications in 90pts
    - Pouch-related 53%
    - Death: 11%

Long-term complications

- Metabolic Abnormalities
- Growth and Development
- Altered Sensorium
- Infection
- Stones
- Cancer
- Osteomalacia
- Basic Lab Studies
- Observation
- Serum Mg study
- Culture
- Radiograph
- Colonoscopy
- Bone-density study
Hyperchloremic Metabolic Acidosis

“These electrolyte abnormalities ... may be lethal to the patient, as severe electrolyte abnormalities have contributed to the death of patients”

- Campbell's Urology, 9th edition

Practical Issues

► Follow-up
  - In Ethiopia:
    - Walking time to public transport:
      Average 11.7hrs
    - Travel time by public transport:
      Average 5.8 hrs
      - N=3532
Practical Issues

► Laboratory Capabilities
  ▪ Electrolyte studies relatively difficult
  ▪ Other studies (Mg, etc) non-existent

► Radiology Capabilities
  ▪ Contrast studies very unusual
  ▪ Interventional capability non-existent

► Endoscopic Capabilities
  ▪ Colonoscopy very unusual

Practical Issues

► Pharmacologic Availability
  ▪ Potassium replacement
  ▪ Alkalination
  ▪ Antibiotics

► Supply Availability
  ▪ Catheters
  ▪ Appliances
Practical Issues

► Cost
  ▪ A course of ciprofloxacin costs my patients about $130
  ▪ Ethiopia GDP per capita 2002 $90

Local Solutions

► Kanwa:
  ▪ Potassium-based alkaline lake-bed salt
  ▪ Available in many northern Nigerian markets
► We need to be responsible and creative
Some forms of urinary diversion have been done in the African context with reasonable success and safety comparable to the US.

Follow-up is very difficult

Long-term complications are significant

Diagnostic capabilities for follow-up are limited essentially to clinical examination

Medications may not be affordable or available