Obstetric Vesicovaginal Fistula Repair: Vaginal Approach
Simple Repair Techniques
Disclosures

• None specific to talk
• Grant Funding
  – NIH
  – NSF
  – Center for Global Health
  – Mimic Technologies
  – Intuitive Surgical
  – Maren Foundation
Outline

• Preoperative considerations
• Principles of fistula surgery
• Simple VVF repair techniques
• Success rates and risk factors for failure
• Martius graft
• Duration of bladder drainage
When to Perform Surgery?

Retrospective analysis: 1,716 women with obstetric VVF
  • Challenge the practice of waiting 3 months before surgery

Duration between delivery and repair (3 – 75 days): 43% repair w/in 30 days, 88% repair w/in 60 days

Successful closure in >90% of patients regardless of timing
  • Catheter drainage resulted in 15 – 20% cure w/in 4-6 wks after delivery (usually small fistula <1cm)

What I Do: delay surgery only until tissue sloughing and necrosis resolves

RCT: 64 women with obstetric VVF
- No trimming vs. trimming of bladder edges, usually ½ cm
- All received vaginal VVF repair with martius graft
- Primary outcome: absence of fistula on exam at 3 month

Both groups similar: demographics, fistula characteristics

Both groups resulted in similar success rates:
  75% (non-trimmed) vs. 68% (trimmed)
- No differences in success: location, number, recurrent
- Failed repairs resulted in larger fistula in the trimmed group

Lack of information regarding the amount of fibrosis/scarring

What I Do: no trimming unless extensive fibrosis

Neurourol and Urodyn 2011;30:302
One or Two Layer Closure?

832 Patients

1 layer
45%
91%

2 layer
55%
93%

What I Do: 2 layer closure unless bladder size is significantly compromised or risk damaging ureter

Am J Obstet and Gynecol 2009
Key Principles of Repair

Well vascularized/ healthy edges

Adequate mobilization of the fistula; Tension-free closure of the fistula

Locate and protect the ureteral orifices

Dye test to ensure water-tight closure

Continuous bladder drainage after the repair
Mobilization of the Fistula
Tension-Free Closure of Fistula
Check for Integrity of Repair
Closure of Vaginal Epithelium
Successful repair of obstetric fistulas is 83% after one attempt and 65% after two or more attempts.

Surgeons with basic skills can learn the techniques necessary for obstetric fistula repair and can perform the techniques effectively and successfully.

Unclear what factors contribute to repair success or failure.

## Risk Factors for Repair Failure (N=1045): 11% Failure

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete urethral destruction</td>
<td>8.37</td>
<td>3.26 – 20.44</td>
</tr>
<tr>
<td>Severe vaginal scarring</td>
<td>4.58</td>
<td>2.92 – 7.13</td>
</tr>
<tr>
<td>Small bladder size</td>
<td>3.80</td>
<td>2.41 – 5.95</td>
</tr>
<tr>
<td>Circumferential fistula</td>
<td>2.81</td>
<td>1.87 – 4.23</td>
</tr>
</tbody>
</table>

Am J Obstet and Gynecol 2009
Martius Graft
Martius Graft
Martius Graft
Success rates increased from 70% to 90%
Disadvantages include longer operative time and potentially increased postoperative infection

413 patients underwent vaginal VVF repair:
50% with Martius, 50% without
- Failure rates were the same (3% vs. 1%) even in recurrent fistula cases (45 cases)
- Stress urinary incontinence rates were higher (45% vs. 17%)

What I Do: no Martius flap; for recurrent fistula in vascular compromised tissue, consider Martius graft

RCT (10 days vs. 14 days): 189 VVF exclude circumferential fistula

- Similar success rates: 97% vs. 93% at discharge

RCT (7 days vs. 14 days): 524 simple VVF exclude fistula from radiation, multiple fistula

- Similar success rates: 96% (95% CI 92 – 98) vs. 97% (95% CI 94 – 98) up to 3 months after surgery
- No differences in length of hospital stay, proportion of women with fever, post repair infection, incontinence

What I Do: 7 – 10 days of continuous bladder drainage for simple fistula

Lancet 2015;386:56; Int J Gynaecol Obstet 2012;118:21
SUMMARY

- Key principles of repair: well vascularized/healthy edges, adequate mobilization/tension free closure, locate/protect ureters, dye test, continuous bladder drainage
- Not trim edges unless fibrotic
- High repair success with simple VVF
- Risk factors for failure: urethral destruction, severe vaginal scarring, small bladder size, circumferential fistula
- 2 layer closure unless limited bladder size
- No Martius flap unless recurrent fistula w/ vascular compromise