Early Genital Reconstruction After Debridement of Fournier’s Gangrene is Safe and Effective

PD46-07

Jason Sandberg, MD
Shawn Sexton, BS
Bradley Erickson, MD

AUA 2020 – Virtual Presentation
Disclosures

• I have no relevant conflicts of interest to disclose
Summary

- Introduction & Objective
- Methods
- Results
- Commentary
- Conclusions
Introduction & Objective

✓ Fournier’s gangrene is classically managed with aggressive excision and drainage at the time of presentation follow by delayed reconstruction

✓ Delaying reconstruction imposes morbidity on patients:
  • Pain
  • Long-term wound management requiring third-party care
  • Missed time at work
  • Decreased mobility and deconditioning
Introduction & Objective

✅ Hypothesis: Early wound closure and reconstruction affords equivalent, if not improved surgical outcomes
Introduction & Objective

Presentation

POD6 after Recon

Final Debridement

6 months post-op
Methods

IRB-approved database from our institution was queried for adult male patients and CPT codes related to Fournier’s Gangrene from July 2009 – June 2019

• “Debridement of skin, muscle, and fascia for necrotizing soft tissue infection…
  • - external genitalia and perineum (11004)” OR
  • - abdominal wall (11005)” OR
  • - external genitalia, perineum, and abdominal wall (11006).”

OR

• “Incision and Drainage of epididymis, testis and/or scrotal space (54700).”

OR

• “Drainage of scrotal wall abscess (55100).”
Methods

Subjects excluded

-20 subjects represented a post-procedural complication

-14 subjects were incorrectly coded

-82 subjects has simple scrotal abscess requiring I&D without reconstruction

-7 subjects died prior to reconstruction

-5 subjects had inadequate records to include

49 Total
Methods

Subjects were divided into Early (within 10 days of final debridement) and Late reconstruction (greater than 10 days) groups.

Groups were compared for
- Baseline characteristics
- Site and extent of debridement
- Type of closure
- 90-day post-reconstruction complications
- 90-day post-reconstruction mortality rate

The standard t-test and chi-squared/Fisher’ exact tests were used to compare the groups, significance p<0.05
# Results

Baseline characteristics

<table>
<thead>
<tr>
<th></th>
<th>Early (n = 28)</th>
<th>Late (n = 21)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (yrs)</strong></td>
<td>53.0 ± 16.7</td>
<td>52.1 ± 10.2</td>
<td>p = 0.81</td>
</tr>
<tr>
<td><strong>Smoker</strong></td>
<td>14, 50.0%</td>
<td>10, 47.6%</td>
<td>p &lt; 0.87</td>
</tr>
<tr>
<td><strong>BMI</strong></td>
<td>33.3 ± 10.1</td>
<td>39.5 ± 11.0</td>
<td>p = 0.04*</td>
</tr>
<tr>
<td><strong>Charlson Comorbidity Index</strong></td>
<td>3.0 ± 2.4</td>
<td>2.7 ± 1.8</td>
<td>p = 0.61</td>
</tr>
<tr>
<td><strong>APACHE II</strong></td>
<td>7.4 ± 4.7</td>
<td>8.0 ± 4.7</td>
<td>p = 0.45</td>
</tr>
<tr>
<td><strong>Time between final debridement &amp; reconstruction (hrs)</strong></td>
<td>131.1 ± 48.3</td>
<td>674.7 ± 415.7</td>
<td>p &lt; 0.001*</td>
</tr>
</tbody>
</table>
Results

Area of resection and reconstruction

<table>
<thead>
<tr>
<th>Area</th>
<th>Early (n = 28)</th>
<th>Late (n = 21)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrotum</td>
<td>26, 92.9%</td>
<td>19, 90.5%</td>
<td>p = 1</td>
</tr>
<tr>
<td>Penis</td>
<td>9, 32.1%</td>
<td>5, 23.8%</td>
<td>p = 0.52</td>
</tr>
<tr>
<td>Suprapubic/Inguinal</td>
<td>15, 53.6%</td>
<td>7, 33.3%</td>
<td>p = 0.16</td>
</tr>
<tr>
<td>Perineum</td>
<td>18, 64.3%</td>
<td>11, 52.4%</td>
<td>p = 0.40</td>
</tr>
</tbody>
</table>
## Results

### Perioperative Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Early (n = 28)</th>
<th>Late (n = 21)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Closure Type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary –</td>
<td>12, 42.9%</td>
<td>10, 47.6%</td>
<td>p = 0.74</td>
</tr>
<tr>
<td>Grafting –</td>
<td>16, 57.1%</td>
<td>11, 52.4%</td>
<td></td>
</tr>
<tr>
<td><strong>Reconstructed during initial hospital day</strong></td>
<td>28, 100%</td>
<td>7, 33.3%</td>
<td>p &lt; 0.001*</td>
</tr>
<tr>
<td><strong>Minor wound breakdown</strong></td>
<td>9, 32.1%</td>
<td>4, 19.0%</td>
<td>p = 0.30</td>
</tr>
<tr>
<td><strong>Wound Infection</strong></td>
<td>2, 7.1%</td>
<td>2, 9.5%</td>
<td>p = 1</td>
</tr>
<tr>
<td><strong>Re-operation for infection or wound complication</strong></td>
<td>1, 3.6%</td>
<td>4, 19.0%</td>
<td>p = 0.36</td>
</tr>
<tr>
<td><strong>90-day mortality following reconstruction</strong></td>
<td>2, 7.1%</td>
<td>0, 0.0%</td>
<td>p = 0.51</td>
</tr>
</tbody>
</table>
Commentary

- Single institution, retrospective cohort
- Patient identification via CPT codes
- Antibiotic therapy and culture data forthcoming
- Are patients in the Late group sicker at baseline?
- Our data already represents a shift in management
Commentary

Proportion of Cases from 2009 through 2019

- Early
- Late
Conclusions

✔ Early genital reconstruction following surgical excision and drainage in the treatment of Fournier’s gangrene provides safe and fastidious wound closure

✔ Reconstruction may be performed during the patient’s initial hospital stay
Thank you

Jason-Sandberg@uiowa.edu