The Loop Technique: A Novel Incision and Drainage Technique in the Treatment of Skin Abscesses in an Emergency Department in a Community-acquired Methicillin-resistant *Staphylococcus Aureus* Endemic Area

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NO FINANCIAL COI TO DISCLOSE
IMPORTANCE
COMPARE THE FAILURE RATE OF LOOP VS I&D OF ABSCESSSES IN ED PATIENTS OF ALL AGES
Study Design

- PROSPECTIVE
- NON-INFERIORITY
- RANDOMIZED
- ONE YEAR
- TWO LEVEL 1 CENTERS
- CONVENIENCE SAMPLE
Exclusion

- ABSCESSES ON HAND, FACE, FOOT
- REQUIRED INPATIENT ADMIT
- REQUIRED OPERATIVE TREATMENT
RANDOMIZATION

1:1 RATIO RANDOMIZED SEALED STUDY PACKETS
PRIMARY OUTCOME: FAILURE
Failure

• REQUIRED ADDITIONAL PROCEDURE
• REQUIRES INTRAVENOUS ANTIBIOTIC
• REQUIRES OPERATION
SECONDARY OUTCOMES
Secondary Outcomes

- EASE OF PROCEDURE
- PAIN OF INITIAL PROCEDURE
- EASE OF CARE AT FOLLOW-UP
- PAIN AT FOLLOW-UP
- PATIENT SATISFACTION AT DAY 10
Results
256 Potential study patients identified

39 Did not meet inclusion and exclusion criteria

217 Enrolled in the study and randomized

109 Randomized to Incision and Drainage

108 Randomized to the LOOP technique

109 Randomized to Incision and Drainage

97 (89%) Completed follow-up

99 (92%) Completed follow-up
<table>
<thead>
<tr>
<th></th>
<th>I&amp;D n=109</th>
<th>LOOP n=108</th>
<th>Total N=217</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Age in years (IQR) Range</td>
<td>21 (4-37)</td>
<td>22 (2-35)</td>
<td>22 (2-35)</td>
</tr>
<tr>
<td></td>
<td>0.2-69</td>
<td>0.5-65</td>
<td>0.2-69</td>
</tr>
<tr>
<td>Gender (% female)</td>
<td>58 (53%)</td>
<td>52 (48%)</td>
<td>110 (51%)</td>
</tr>
<tr>
<td>Location of Abscess (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head and Neck</td>
<td>4 (4)</td>
<td>3 (3)</td>
<td>7 (3)</td>
</tr>
<tr>
<td>Torso</td>
<td>10 (9)</td>
<td>13 (12)</td>
<td>23 (11)</td>
</tr>
<tr>
<td>Extremities</td>
<td>64 (59)</td>
<td>47 (44)</td>
<td>111 (51)</td>
</tr>
<tr>
<td>Buttocks/Groin</td>
<td>31 (28)</td>
<td>45 (42)</td>
<td>76 (35)</td>
</tr>
<tr>
<td>Size of Abscess (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1 cm</td>
<td>4 (4)</td>
<td>9 (8)</td>
<td>13 (6)</td>
</tr>
<tr>
<td>1-2.5 cm</td>
<td>46 (42)</td>
<td>44 (41)</td>
<td>90 (42)</td>
</tr>
<tr>
<td>2.5-4 cm</td>
<td>40 (37)</td>
<td>36 (33)</td>
<td>76 (35)</td>
</tr>
<tr>
<td>&gt;4 cm</td>
<td>19 (17)</td>
<td>19 (18)</td>
<td>38 (18)</td>
</tr>
<tr>
<td>Cellulitis (%)</td>
<td>79 (73)</td>
<td>75 (69)</td>
<td>154 (71)</td>
</tr>
<tr>
<td>Sedation (%)</td>
<td>32 (30)</td>
<td>32 (30)</td>
<td>64 (30)</td>
</tr>
<tr>
<td>Antibiotics prescribed at discharge (%)</td>
<td>102 (94)</td>
<td>100 (93)</td>
<td>202 (93)</td>
</tr>
</tbody>
</table>
196 Completed follow-up

114 Adults
- 55 Incision and Drainage
  - 10 (18%) Treatment failure
- 59 LOOP
  - 13 (22%) Treatment failure

82 Children
- 42 Incision and Drainage
  - 9 (21%) Treatment failure
- 40 LOOP
  - 0 (0%) Treatment failure
Table 2. Description of Secondary Outcome Measures in the I&D Versus LOOP Group

<table>
<thead>
<tr>
<th>Measure</th>
<th>I&amp;D n=109 (95% CI)</th>
<th>LOOP n=108 (95% CI)</th>
<th>P-Value N=217</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinician Perspective (n=208)</td>
<td>3.2 (2.8-3.6)</td>
<td>2.9 (2.5-3.2)</td>
<td>0.168</td>
</tr>
<tr>
<td>Pain of Procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient/ Parent Perspective (n=206)</td>
<td>4.4 (3.9-4.9)</td>
<td>4.1 (3.6-4.6)</td>
<td>0.446</td>
</tr>
<tr>
<td>Ease of Care over first 36 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient/ Parent Perspective (n=174)</td>
<td>2.9 (2.4-3.5)</td>
<td>2.0 (1.5-2.4)</td>
<td>0.002</td>
</tr>
<tr>
<td>Pain over first 36 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient/ Parent Perspective (n=175)</td>
<td>3.7 (3.2-4.3)</td>
<td>2.7 (2.1-3.2)</td>
<td>0.004</td>
</tr>
<tr>
<td>Patient/ Parent Satisfaction at 10 days (n=139)</td>
<td>8.9 (8.6-9.3)</td>
<td>9.5 (9.3-9.8)</td>
<td>0.005</td>
</tr>
</tbody>
</table>
Limitations

• CONVENIENCE SAMPLE
• NO STANDARDIZATION:
  • USE OF SEDATION
  • PERFORMING CLINICIAN
  • USE OF ANTIBIOTICS
Conclusions

• LOOP EFFECTIVE ALTERNATIVE
• SIGNIFICANTLY LOWER FAILURE RATE IN CHILDREN
• EQUIVALENT INITIAL PAIN AND EASE OF USE
• EASIER TO CARE FOR PATIENTS
• LESS PAINFUL ON FOLLOW-UP
• HIGHER PATIENT SATISFACTION
• FURTHER STUDIES WARRANTED
Acknowledgement

MARCH 10, 1960 – FEBRUARY 26, 2017
QUESTIONS?

THANK YOU