Feasibility and Safety of Sham Feeding in Long Gap Esophageal Atresia

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Introduction & Literature Review

• Long Gap Esophageal Atresia (LGEA):
  - Inability to perform primary esophageal anastomosis
  - Initial management:
    - G-tube and continuous Replogle aspiration
    - Delayed primary anastomosis (3 months of age)
  - Complication: Oral aversion

• Consequences of Oral Aversion:
  - Delay in PO feeds
  - Delay in solid food introduction
  - Possible long term feeding issues
  - Possible growth retardation
  - Prolonged hospitalization

• Sham Feeding:
  - Definition: Non nutritive feeds
  - Promotes positive oral experiences
  - Helps develop feeding habits
  - Contributes to parent-child bond development

Published Data:

  - 27/32 EA patients with esophagostomy had sham feeding 0%
  - Breastfeeding
  - No clear data on long term feeding habits

  - 4 patients, Replogle (unprepared), 25% breastfeeding: No aspiration event
  - Time to full feeds 2 months earlier than ‘usual’ for LGEA patients

Retrospective Study

• Methods:
  - Single institution
  - Retrospective chart review from 1987 to 2012
  - Data collected: Medical, surgical, feeding related

• Results:
  - 29 patients born with LGEA since 1987
    - Exclusions: death (1); reduced past chart (1)
  - 9/27 patients (33%) were offered sham feeds
    - Technique: 5-30 cc of glucose water (+/- milk)
    - No standardization
    - 8/9 sham fed until definitive primary anastomosis
    - No medical contra-indications
    - No complications
    - No mention of long term feeding evolution

Sham Feeding Protocol

• Data Collection Sheet

• Breastfeeding and Bottle Feeds Protocols
  - Sham Feeding (SF) Steps
    - Initiate Replogle with 0.9 NS before and after each SF session
    - If possible, have Replogle tube installed in nstubs (but oral tube does not constitute a contra-indication to SF)
    - Perform SF at time of G-tube nutrient bolus feed
    - Perform SF even if continuous feeds
    - Stop SF before the baby shows signs of fatigue, choking, or discomfort
    - SF must be a positive experience
    - Do not include SF in total fluid requirements
    - Change in SF steps must be adapted to the baby’s condition and must be validated by the NICU team

Prospective Study

• Study started in 2013

<table>
<thead>
<tr>
<th>Patient #1</th>
<th>Patient #2</th>
<th>Patient #3</th>
<th>Patient #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>EA Type</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>GA (wks)</td>
<td>35</td>
<td>31</td>
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<tr>
<td>BW (g)</td>
<td>2990</td>
<td>2150</td>
<td>3910</td>
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<tr>
<td>Associated Anomalies</td>
<td>Patent Ductus Arteriosus</td>
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<td>None</td>
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<tr>
<td>Age at Definitive Surgery</td>
<td>2013-06-07 (3-10 mo)</td>
<td>2013-07-05 (3-10 mo)</td>
<td>2014-09-05 (3-10 mo)</td>
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<tr>
<td>Postoperative Complications</td>
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<tr>
<td>Sham Feeding</td>
<td>Complications</td>
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<td>None</td>
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<tr>
<td>- Parental Satisfaction</td>
<td>High</td>
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<td>High</td>
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<tr>
<td>- Long Term Evolution</td>
<td>Duration of Follow up 21 mo</td>
<td>21 mo</td>
<td>21 mo</td>
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<tr>
<td>- Oral Aversion</td>
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</tr>
<tr>
<td>- G-Tube Use</td>
<td>Stopped</td>
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<tr>
<td>- PN Feeding</td>
<td>Full PN</td>
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<td>Full PN</td>
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</tbody>
</table>

• Conclusion:
  - Sham feeding is feasible and safe in LGEA
    - Positive experience for all babies
    - High parental satisfaction
    - Multidisciplinary teamwork
    - Small number of patients
    - Multicentric study?
    - Include other pathologies?