Chest Tube Complications in Infants

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Disclosure Information

- Linda Vo, FNP: No relevant financial relationships to disclose or as appropriate
- Ellen McGrath, PNP: No relevant financial relationships to disclose or as appropriate
- David P. Mooney, MD, MPH: No relevant financial relationships to disclose or as appropriate
Objective

• To present data on chest tube complications in infants compared to older age groups
• To share data analysis of chest tube complications and associated interventions across all age groups
• To provide information to other institutions to help with management in chest tubes in infants

Background

• Concern heightened for chest tubes in infants
• No reports of increased complication rate

Methods

• Retrospective descriptive study
• Single hospital electronic data warehouse
• Consecutive patients with chest tubes
• General Surgical Service from 2010 to 2015
Methods

- Data extracted
  - Demographics
  - Length of tube presence
  - Pulmonary incision
  - Any tube complication
  - Tube occlusion
  - Tube replacement

Methods

- Four age categories
  - Infants: less than 1 year
  - Preschoolers: 1 to 4 years
  - Elementary: 5 to 9 years
  - Older: 10 years or older

Results

- 280 patients
  - Standard care for all
  - Majority placed during a surgical procedure
Results

- Surgical Procedures
  - EA repair
  - CDH
  - CCAM/CPAM
  - Tumor resection/debulking/biopsy
  - Bleb resection, thoracic outlet syndrome

<table>
<thead>
<tr>
<th>N</th>
<th>Age (yrs)</th>
<th>Weight (kg)</th>
<th>Length (days)</th>
<th>Pulmonary (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infants</td>
<td>84</td>
<td>0.4</td>
<td>6</td>
<td>9.6</td>
</tr>
<tr>
<td>Preschoolers</td>
<td>50</td>
<td>2.1</td>
<td>11.7</td>
<td>4.4</td>
</tr>
<tr>
<td>Elementary</td>
<td>32</td>
<td>7.2</td>
<td>26.5</td>
<td>6.9</td>
</tr>
<tr>
<td>Older</td>
<td>114</td>
<td>16.4</td>
<td>58.9</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Complications

<table>
<thead>
<tr>
<th>Complication (%)</th>
<th>Occluded (%)</th>
<th>Replaced (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Preschoolers</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Elementary</td>
<td>31</td>
<td>12.5</td>
</tr>
<tr>
<td>Older</td>
<td>17</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Results

• No patient suffered cardiorespiratory compromise secondary to a chest tube complication

Conclusion

• Complication rates for chest tubes in infants comparable
• No higher risk of complications
• Require the same degree of diligence

Thank you!