The Incidence of Secondary Airway Lesions (SAL) in Patients with Laryngomalacia (LM)

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Objectives

1. Analyze incidence of SAL in LM
2. Predict correlation between SAL & need for surgery

Introduction

• LM most common cause of stridor
• SALs occur in 7.5%-64% LM patients
• Many suggest SALs are inconsequential to treatment decisions, but controversy exists with this statement
• Null: No correlation between SALs & surgical intervention

Methods and Materials

• Age, gender, race, presenting symptoms, diagnostic procedure, SAL type, co-morbidities affecting airway, surgical intervention recorded
• EXCLUSION: CP, PRS, craniofacial syndrome, central OSA, etc.
• INCLUSION: LM diagnosis by direct visualization, & sufficient electronic medical records data
• Primary outcome measures: SAL incidence, type, & predictive value for surgical intervention

Results

• 167 charts, 16 excluded for confounding co-morbidities
• Final sample size 151
• Majority male (60.9%), and full-term (78.3%)
• Mean age 5.85 months (SD 15.15 mos)
• SAL incidence 28.5% (N=43)
• 9.9% (N=15) surgery
• All surgical patients had shortened AE folds
• Chi-Square analysis examined SAL & surgery relation (χ²=2.71, p=0.10) Table 2
• Age at first visit significant (8 = 0.24, p = .004): older children had higher surgical treatment rate logistics regression

Table 1. Type of SAL and Incidence

<table>
<thead>
<tr>
<th>Lesion Type</th>
<th>N</th>
<th>% with Secondary Airway Lesion</th>
<th>% within sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM</td>
<td>18</td>
<td>41.8</td>
<td>10.8</td>
</tr>
<tr>
<td>BM</td>
<td>8</td>
<td>18.6</td>
<td>4.8</td>
</tr>
<tr>
<td>TBM</td>
<td>12</td>
<td>27.9</td>
<td>7.2</td>
</tr>
<tr>
<td>SGS</td>
<td>8</td>
<td>18.6</td>
<td>4.8</td>
</tr>
<tr>
<td>VCP</td>
<td>1</td>
<td>2.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Vallecular Cysts</td>
<td>2</td>
<td>4.7</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Note: Some patients had more than one type of secondary airway lesion, thus the total will not add up to 100%. TM-Tracheomalacia, BM-Bronchomalacia, TBM-Tracheobronchomalacia, SGS-Subglottic Stenosis, VCP- Vocal Cord Paralysis

Table 2. Chi-Square analysis: Relation for Presence of SAL and Surgical Procedure

<table>
<thead>
<tr>
<th>2nd Airway Lesion</th>
<th>Surgical Procedure</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td>Yes</td>
<td>36</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>15</td>
</tr>
</tbody>
</table>

Discussion

• 28.5% SAL
• 1 had tracheostomy & 7 supraglottoplasty
• Supraglottoplasty = 1 or more: epiglottopexy, release of AE fold, &/or arytenoid reduction
• SAL defined: TM, BM, TBM, VCP, SG & laryngeal edema not defined as SAL
• Age statistically significant: ≥1 increased incidence of surgical intervention (p=0.004).
• Variable incidence in literature may be due to different definitions & inclusion of confounders in statistical analyses
• Historically, surgeons may have lower threshold with SAL patients; however our data doesn’t support this

Conclusions

• No association between SALs and surgical intervention.
• Incidence of SALs is median of literature reports.
• SAL patients are not higher acuity
• Findings will aid clinicians when managing SAL patients

References


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