SURGICAL APPROACH TO DROOLING IN CHILDREN
A CASUISTIC REVIEW AND EVALUATION OF GRADE OF SATISFACTION

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Introduction

• Drooling of saliva is the unintentional loss of saliva from the mouth as consequence of a dysfunction in the coordination of the swallowing mechanism resulting in excessive pooling of saliva in the anterior portion of the oral cavity.
• Excessive drooling is considered to be abnormal in children older than 4 years of age, and is a common problem in pediatric patients with neurological disorders.
• It hinders masticatory system, interferes with speech, impairs oral hygiene contributing to oral dermatitis, aspiration pneumonias and fluid electrolyte imbalances.
• It has a profound negative impact on quality of life contributing to social exclusion, self-esteem problems and significant discomfort, especially amongst school-aged children. In addition, it can present a serious challenge for caregivers.
• Various approaches to manage this condition have been described in the literature, including oral motor therapy, behavior modification via biofeedback, drug therapy, radiotherapy and surgical treatments.
• Submandibular duct relocation is the surgical approach undertaken by the authors which allows conservation of salivary flow.

Objectives: The aim of this study is to share our experience on the surgical approach of drooling children, evaluate clinical outcomes and long-term caregiver satisfaction outcomes.

Methods: Retrospective study with review of medical records of 43 children and adolescents submitted to submandibular duct relocation in Centro Hospitalar Tondela-Viseu between January 2003 and December 2017. The authors analyzed the clinical history, bibs used per day before and after surgery and caregivers’ satisfaction assessed by interview using a questionnaire.

1. Does your child still has drooling?
   Yes
   No

2. Is your child currently on any therapy for drooling?
   Yes
   No

3. How many daily bibs did your child used before surgery?
   0
   1-5
   >5

4. How many daily bibs does your child use after surgery?
   -Unsatisfied
   -Satisfied
   -Very satisfied

Table 1. Caregiver satisfaction and outcome questionnaire

Results

- Forty-three children and adolescents (15 girls and 28 boys) underwent bilateral submandibular duct transposition between January 2003 and December 2017, with a median age of 9 years;
- All children have neurological disorders, with cerebral palsy being the predominant diagnosis (table 2);
- None of the patients had received any treatment prior to surgery;
- The majority were hospitalized for 1 to 2 days and no surgical complications were observed;
- The number of bib or clothing changes were >10 in 23 patients (53%) preoperatively and <5 in 32 patients (74%) postoperatively. 15 patients (35%) didn’t need to use bibs postoperatively and 7 (17%) kept the same number (graph 1 and 2);
- 30% of caregivers were satisfied and 53% were very satisfied with the results of surgery (table 3).

Table 2. Demographics and causes of saliorhea in 43 children treated surgically

<table>
<thead>
<tr>
<th>Gender (n, %)</th>
<th>Males</th>
<th>Females</th>
</tr>
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<tbody>
<tr>
<td>3-18 years</td>
<td>18 (65.1%)</td>
<td>15 (34.9%)</td>
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<table>
<thead>
<tr>
<th>Age (min, max, mean)</th>
<th>3-18 years (9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebral Palsy</td>
<td>19 (44.2%)</td>
</tr>
<tr>
<td>Developmental delay</td>
<td>13 (30.2%)</td>
</tr>
<tr>
<td>Genetic Syndromes</td>
<td>5 (11.6%)</td>
</tr>
<tr>
<td>Other neurodevelopmental disabilities</td>
<td>6 (14.0%)</td>
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</tbody>
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Graph 3. Caregivers’ degree of satisfaction postoperatively (n=43)

Conclusions

- Drooling is the unintentional leakage of saliva from the mouth, generally as a result of difficulty in swallowing the saliva produced;
- Frequently a major problem in children with cerebral palsy, intellectual disability and other neurological impairments and its treatment should not be underestimated;
- A multidisciplinary team is indispensable for appropriate assessment and management of drooling;
- The results of this study show that submandibular duct relocation is an effective method in the resolution of uncontrolled drooling in children, contributing to the improvement of children’s quality of life;
- The degree of satisfaction with the surgical results is in agreement with the published international studies, proving once more the effectiveness of the surgical technique implemented in our Hospital.

References