Improving patient outcomes: An innovative interdisciplinary approach for treating dysphagia in children with cerebral palsy

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Background/Objectives

Our region lacked a comprehensive system for children with cerebral palsy (CP) who have dysphagia and oral motor (OM) problems in conjunction with nutritional deficits. An interdisciplinary OM Clinic (Nutrition, Occupational Therapy and Pediatrics) was developed to assess and treat OM dysfunction in children with CP ages 1-7 years. This clinic’s charge is to provide therapeutic services that advance OM skill development to promote growth and facilitate skills necessary for safe, efficient eating. Our clinic philosophy recognizes the value of an interdisciplinary family-centered approach and the importance of using standardized tools designed to assess dysphagia.

Description

Feeding and swallowing disorders have significant implications for development, growth and nutrition, respiratory health, gastrointestinal function, parent-child interaction and overall family life in children with CP (Rogers, 2004). In our clinic, initial and follow-up diagnostic evaluations include the Dysphagia Disorders Survey (DDS), Pediatric Assessment Scale for Severe Feeding Problems (PASSFP), caregiver interview and patient observation in a natural environment (i.e. kitchen). The DDS is a task analysis tool that describes severity of feeding disorders in children with developmental disabilities. Part one examines patient characteristics and management issues related to dysphagia. Part two evaluates eating skills and behaviors seen during a meal observation. Test-retest comparisons provide evidence of treatment outcomes (Sheppard, 2002). The PASSFP, a parent-report, consists of items reflecting nutritional, oral sensory, OM, behavioral feeding, and quality of life issues. The PASSFP is designed to assess progress in children’s development of oral eating skills (Crist et al., 2004). Used together, they measure the severity of the feeding disorder, identify target goals for remediation, and provide the capacity to track intervention outcomes.

Table: Case example – Outcome measures at each clinical visit

<table>
<thead>
<tr>
<th>Visit #</th>
<th>Age</th>
<th>PASSP</th>
<th>DDS (part 1)</th>
<th>DDS (part 2)</th>
<th>DDS Total</th>
<th>DDS Level</th>
<th>BMI z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9m</td>
<td>43</td>
<td>10</td>
<td>15</td>
<td>25</td>
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<td>-1.30</td>
</tr>
<tr>
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<td>1y</td>
<td>50</td>
<td>8</td>
<td>7</td>
<td>15</td>
<td>3</td>
<td>-1.04</td>
</tr>
<tr>
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<td>1y2m</td>
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<td>16</td>
<td>3</td>
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<td>7</td>
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<td>20</td>
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<td>6</td>
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<td>9</td>
<td>3</td>
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<td>5</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>-1.25</td>
</tr>
</tbody>
</table>

*Gavage placed prior to 5th visit

Significance

A unique, but critical feature of our clinic is the requirement of active family involvement throughout the evaluation/treatment process. Family needs, values and resources are considered when providing recommendations. Interweaving knowledge and skills of the Occupational Therapist and Nutritionist with systematic data collection and analysis of the DDS and PASSFP has led to improved service delivery for children with CP. Positive outcomes have included improvements in: growth; enteral feeding dependence; functional skills such as cup drinking/spoon feeding; positioning; self-feeding independence; oral motor skills for chewing and management of textures; and communication with community providers. Review of cases led to categorization of common clinical recommendations. Planned future research will include data analysis of individual and group patient outcomes.

DDS Levels - Definitions

Level 1 – No disorder: no symptoms of feeding & swallowing disorder

Level 2 – Mild disorder: feeding & swallowing disorder managed with either diet restrictions, medications or adaptive feeding/swallowing strategies; maintains satisfactory nutrition & hydration with no secondary respiratory complications

Level 3 – Moderate disorder: feeding & swallowing disorder managed with combination of diet restrictions, medications or adaptive feeding/swallowing strategies; maintains satisfactory nutrition & hydration with no secondary respiratory complications

Level 4 – Severe disorder: feeding & swallowing disorder managed with combination of diet restrictions, medications or adaptive feeding/swallowing strategies; related nutritional, hydration or respiratory problems persist in spite of the management program

Level 5 – Profound disorder: diet is managed with non-oral feeding for supplemental or total nourishment; related nutritional, hydration or respiratory problems may persist or condition may be satisfactory

Clinical Recommendation Categories

- Nutritional requirements, Kcalorie boosters, Adjust tube feedings
- Bowel management
- Positioning, Seating equipment
- Cup drinking; Straw skills, Spoon feeding, Adaptive utensils
- Oral motor strategies, Chewing
- Oral hygiene program
- Self-feeding/Independence
- Play and Exposure to feeding process
- Mealtime guidance, Behavioral/Sensory strategies
- Safety of swallowing
- General education and provision of resources
- Referral to other medical providers, Community/School therapist collaboration

Graph: DDS Levels for Scored Visits

- DDS Total
- DDS Level
- BMI z-score

Clinical examples:

- Nutritional recommendations, feeding strategies
- Lifestyle modifications, equipment
- Parent education, training