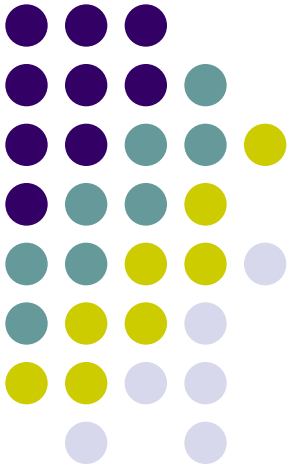
# Dysphagia in children with cerebral palsy-the pharyngeal phase

**A review of the literature**

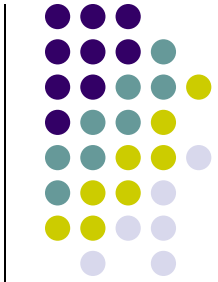
by Sophie Miles



# Cerebral Palsy

- “Cerebral Palsy (CP) refers to a group of chronic, non-progressive disorders of movement, posture and tone due to central nervous system damage in early development,” (Sullivan et al., 2000).
- At risk for dysphagia if cranial nerves involved in deglutition are damaged.
- Each child will present differently according to the nature and locus of brain damage.

# Types of Cerebral Palsy



- Spastic, Athetoid, Ataxic and Mixed.
- Spastic cerebral palsy is the most prevalent type (from 72-91% according to Odding et al. 2005)
  - Results from bilateral damage to the pyramidal and extrapyramidal tracts of the central nervous system (CNS).
- Children with CP often present with hypotonia of the hypopharyx, compromising airway protection and increasing the risk of dysphagia of the hypopharynx (Rogers, 2004).

# Pharyngeal Dysphagia

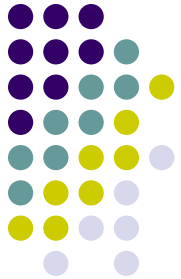
- Pharyngeal phase dysphagia can occur as a result of impairment to pharyngeal peristalsis, elevation of the larynx, laryngeal adduction and damage to the cricopharyngeus muscle. (Logeman, 1984.)
- Clinical Signs and Symptoms include:
  - Weak pharyngeal peristalsis
  - Delayed swallow reflex
  - Pharyngeal pooling

- In children, dysphagia and aspiration can cause recurrent pneumonia and can be fatal. (Kohda, Hisazuma & Hiramatsu, 1994).

# Current Literature

- Kohda, Hisazumi, and Hiramatise examined 10 infants with neurological disorders via Modified Barium Studies (MBS).
- All 10 infants exhibited cricopharyngeal dysphagia, (only observed in 58% of infants without neurological implications.)
- Nasoregurgitation was observed in 9 infants.
- 2 infants exhibited no laryngeal elevation.

# Rogers et al. (1994)



- Studied characteristics of 90 children with CP using modified barium swallow examinations
- Pharyngeal pooling and swallow delay observed in all 90 patients.
- Delayed swallow reflex in 97%
- Reduced pharyngeal peristalsis in 41%
- Aspiration occurred in 40%
  - 50% before swallow
  - 50% after swallow

# Averdson et al. 1994

- Conducted a retrospective review of 186 children ages 2-21yrs evaluated by MBS.
- 48% if the children were diagnosed with CP.
- Of those who aspirated, 71% had CP diagnoses.
- Aspirated most often with thin liquids.
- Aspiration was silent in 94% of the cases.

# Calis et al. 2008

- Conducted a mealtime observation study of 166 children ages 2-19yrs with severe CP.
- Used the Dysphagia Disorders Survey (DDS) along with a severity scale.
- Results indicated a dysphagia prevalence rate of 99% in the population studied.
- Clinical signs reported indicated possible pharyngeal phase problems.
- Further research needed to confirm validity of DDS with radiological studies.

# Conclusions

- Pharyngeal phase problems:
  - Decreased laryngeal elevation
  - Delayed swallow reflex
  - Reduced pharyngeal peristalsis
    - Cricopharyngeal dysfunction

# Conclusions

- When evaluating the pharyngeal swallow of the child with CP, the following should be considered:
- Silent aspiration is likely
- Take caution with thin liquids
- Refer for an MBS.

# References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