ENT Manifestations in NTM: Dysphagia

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Dysphagia = Δυσφαγία

- Greek root *phagein*
- Combined with prefix *dys-*
- Final syllable *ja*
- *dis-FAY-juh*
What is Dysphagia?

- The term dysphagia refers to any difficulty moving food from the mouth to stomach.
- It is a symptom of disease.
- All age groups.
- As a result of congenital abnormalities, structural damage and/or medical conditions.
Statistics…

• Patients with respiratory disorders will often exhibit disorders of swallowing:

• In a study of 78 patients with chronic obstructive pulmonary disease, it was observed that 85% of them had some degree of dysphagia.  
  Good-Fratturelli, Curlee, & Holle, 2000

• Five studies reported that at least 80% of patients with COPD showed to have swallowing dysfunction  
  O’Kane & Groher, 2009
Dysphagia and Pulmonary Disease

- Chronic cough
- Chronic bronchitis
- Chronic obstructive pulmonary disease
- Obstructive sleep apnea
- Pneumonia
- Lung cancer
- Bronchiectasis and NTM
Pulmonary Disease and Swallow Physiology

- Relationship between breathing and swallowing:
  - Anatomical: brainstem
  - Anatomical: similar structures used for both upper airway maintenance and swallowing
  - Physiological: swallowing interrupts the cycle of respiration

- Does disordered respiration lead to disordered swallowing function?
Signs and Symptoms

• Obvious difficulties
• Pneumonia and respiratory infections
• Weight loss
• Patient complaints
Does dysphagia matter?

- ASPIRATION PNEUMONIA!!!!
- Quality of life
Normal Anatomy & Physiology

Regions of Pharynx

- Nasopharynx
- Oropharynx
- Laryngopharynx
Normal Anatomy & Physiology

View during Laryngoscopy

View during Videofluoroscopy
Stages of Swallowing

- The act of swallowing function is described in 4 phases:
  - Oral preparatory phase
  - Oral phase
  - Pharyngeal phase
  - Esophageal phase
Respiratory defenses

• The most highly recognized neural response involved in airway protection is **coughing**.

• Coughing is a reflex-evoked modification of breathing pattern in response to airway irritation.
Pulmonary Disease and Swallowing

- Respiratory rate may increase, altering coordination between the shared functions of the upper aerodigestive tract.
- In pulmonary disease, respiratory demand increases.
- Each swallow closes the respiratory system for 1-2 seconds.
- As the respiratory rate increases, it may affect swallowing.
Purposes of Swallow Study

• Provide valuable information of anatomy and physiology.
• Patient’s ability to swallow various consistencies.
• Assess secretions and patient’s reaction to them.
• Adequacy of airway protection.
• Coordination of respiration and swallowing.
• Evaluate the impact of compensatory strategies on physiology.
• Comprehensive perspective on swallowing from the lips through the esophagus.
Treatment Planning

- The goal of any treatment program is the re-establishment of safe oral intake while maintaining adequate hydration and nutrition.

- What type of nutritional management is necessary?

- What type of therapy
  - Compensatory strategies or exercises?
  - Direct or indirect?
Current Research

• Swallow studies were analyzed from 41 newly diagnosed patients with NTM.

• Two swallows were analyzed per patient (N=164 swallows).

• The primary outcome of interest was airway protection.

• The proportion of subjects with at least one unsafe swallow was 41.5%.
Future Research

• Future work should explore swallowing physiology in NTM population

• Further work needs to determine the relationship between impaired swallowing safety and NTM progression.
Thank you