

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?

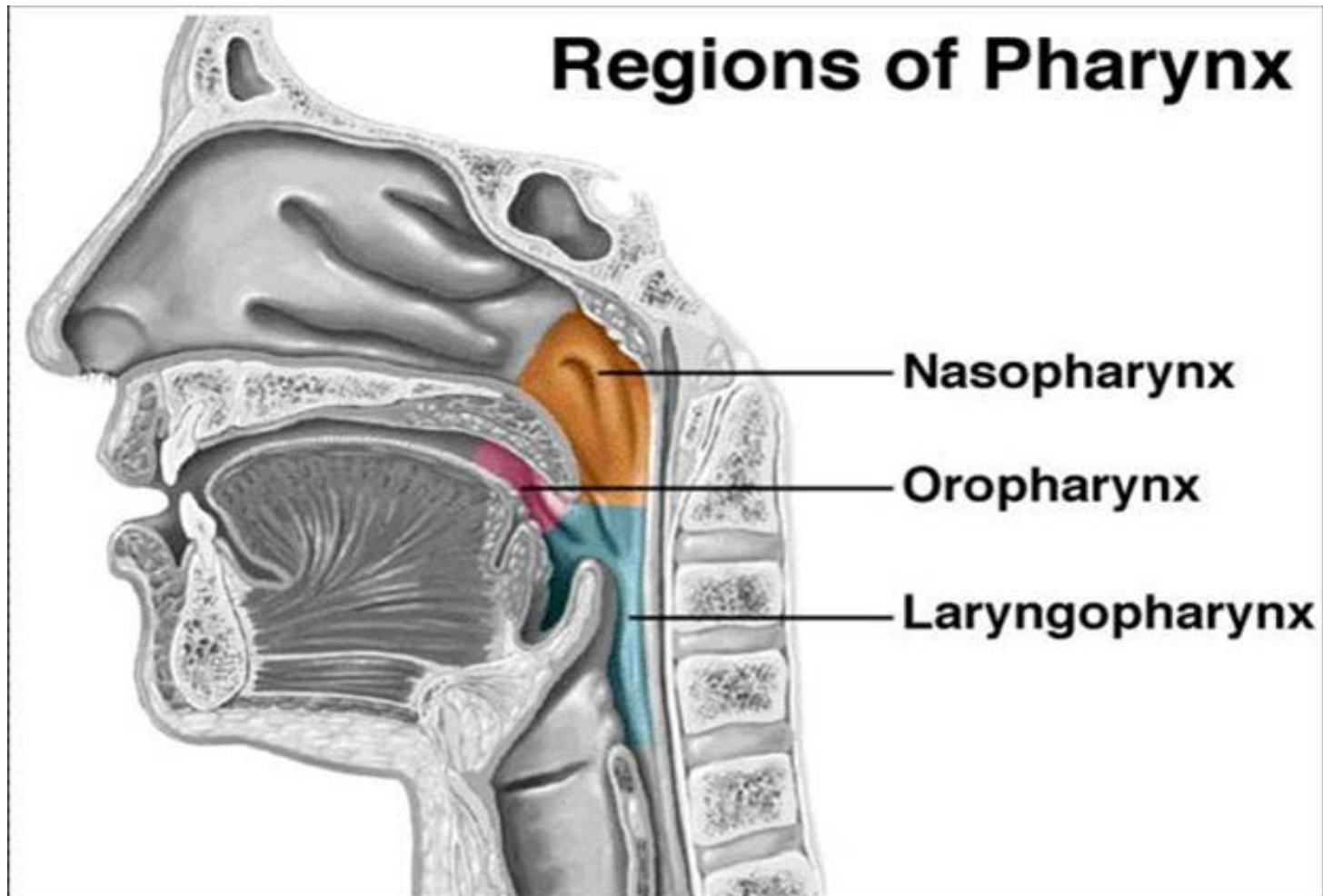
Signs and Symptoms

- Obvious difficulties
- Pneumonia and respiratory infections
- Weight loss
- Patient complaints

Does dysphagia matters?

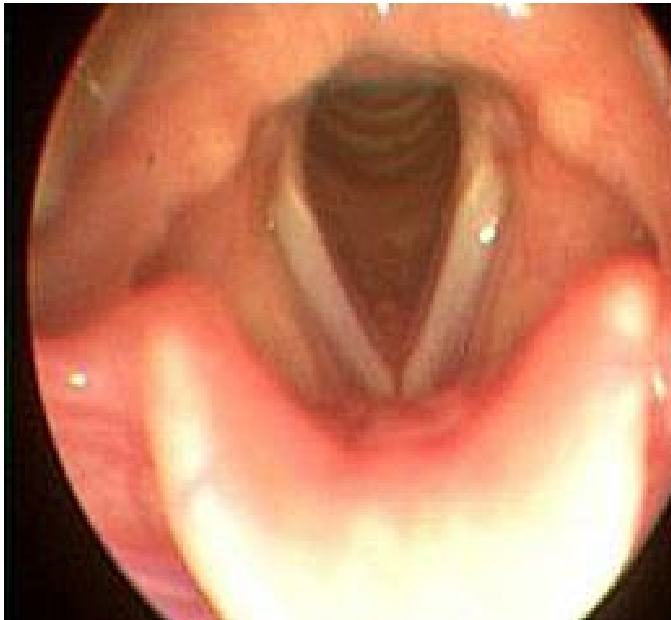
- ASPIRATION PNEUMONIA!!!!
- Quality of life

Normal Anatomy & Physiology

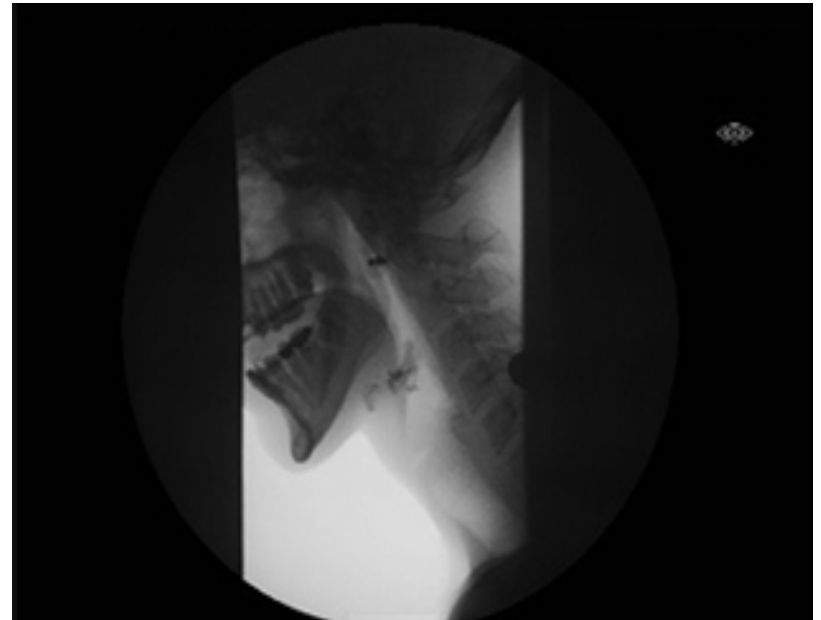


Normal Anatomy & Physiology

View during Laryngoscopy



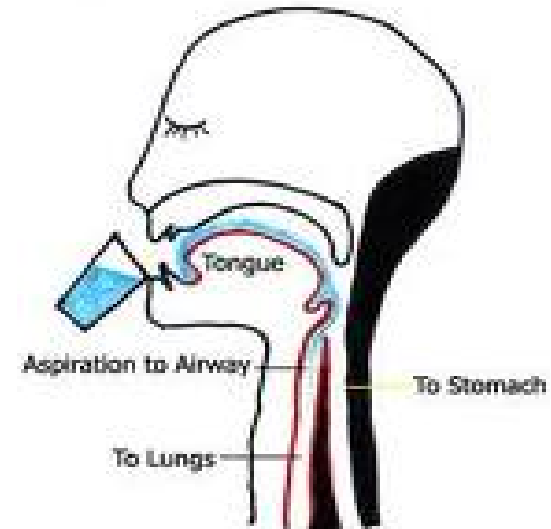
View during Videofluoroscopy



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