



# Oropharyngeal Dysphagia

**Presented By:**

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No financial disclosures



# Objectives

1. To discuss the stages of swallowing
2. To identify the anatomic structures and neural control involved in swallowing
3. To discuss the diagnostic tests commonly used to evaluate swallowing disorders
4. To correlate the oral and pharyngeal phases of swallowing with respective symptomatology and pathology



**DYSPHAGIA**

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graph TD; A[DYSPHAGIA] --> B[OROPHARYNGEAL DYSPHAGIA]; A --> C[ESOPHAGEAL DYSPHAGIA]; B <--> C
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A flowchart illustrating the classification of dysphagia. At the top is a light blue rounded rectangle labeled 'DYSPHAGIA'. Two arrows point downwards from this box to two separate light blue rounded rectangles below it. The left box is labeled 'OROPHARYNGEAL DYSPHAGIA' and the right box is labeled 'ESOPHAGEAL DYSPHAGIA'. A double-headed arrow connects these two bottom boxes, indicating a relationship between them.

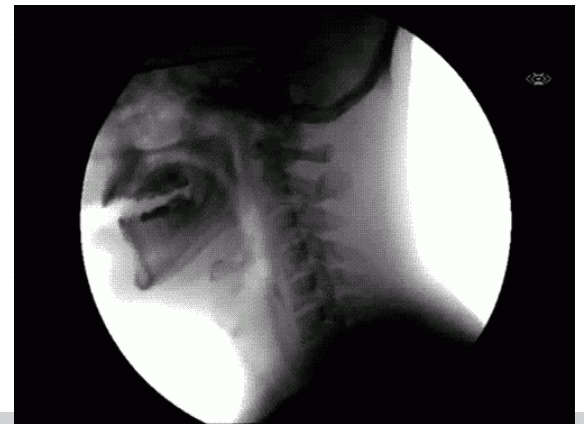
**OROPHARYNGEAL  
DYSPHAGIA**

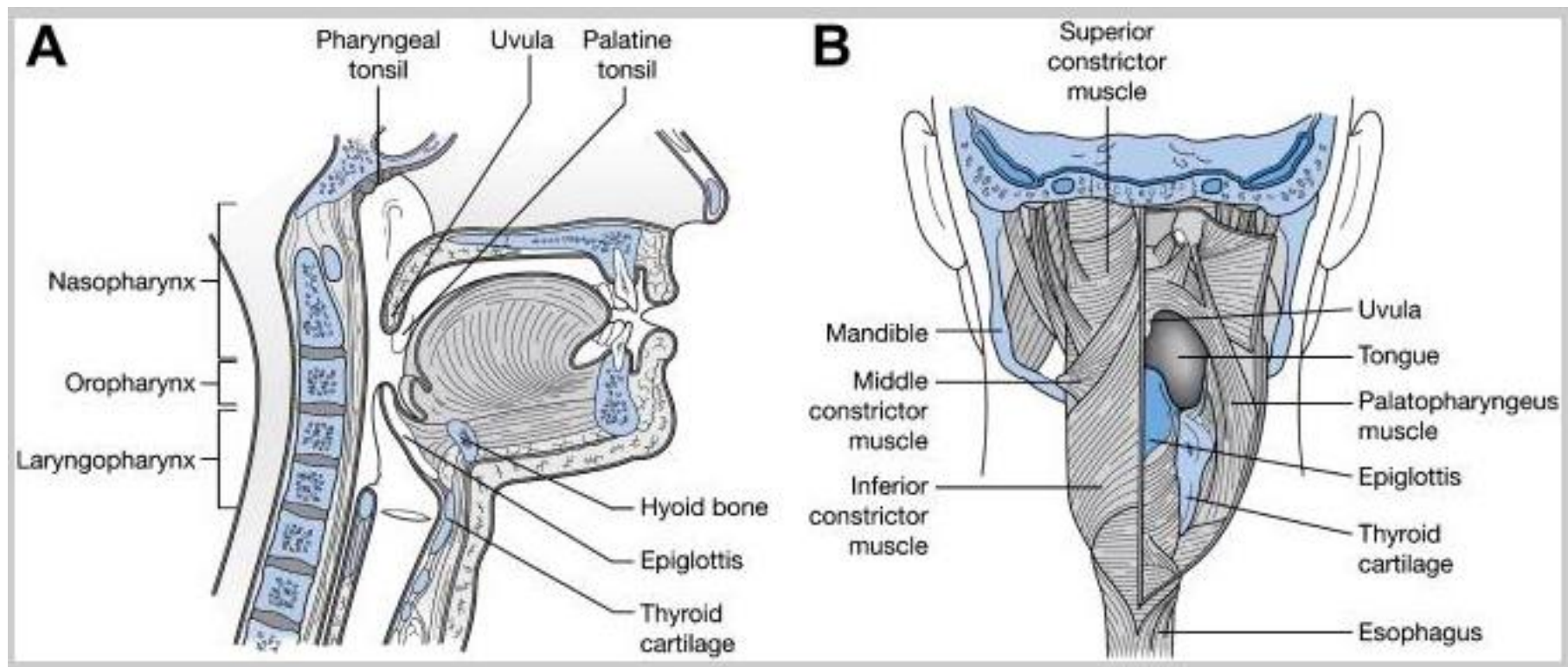
**ESOPHAGEAL  
DYSPHAGIA**



# Deglutition

1. Prepare a bolus of suitable size and consistency
2. Prevent dispersal of bolus during the phases of swallowing
3. Create differential pressure that move bolus forward
4. Prevent food from entering the larynx and nasopharynx
5. Pass the bolus into the pharynx rapidly
6. Prevent gastric reflux
7. Clear the esophagus of residuals





# Phases of swallowing

1. Oral phase
2. Pharyngeal phase
3. Esophageal phase

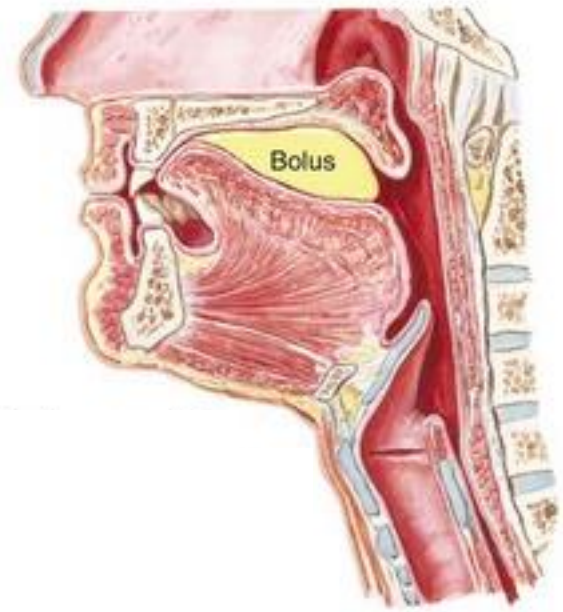


# Phases of Swallowing

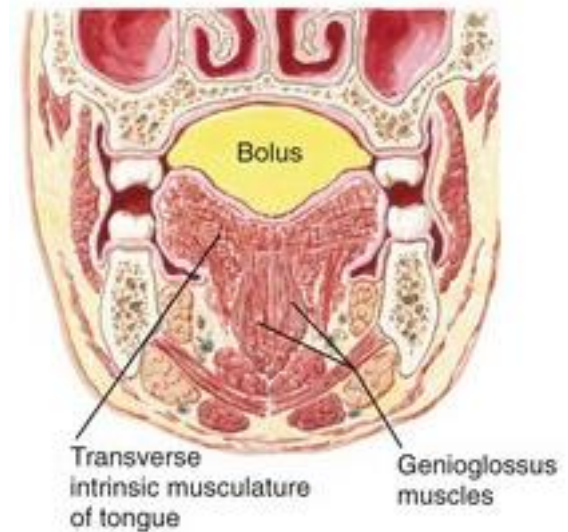




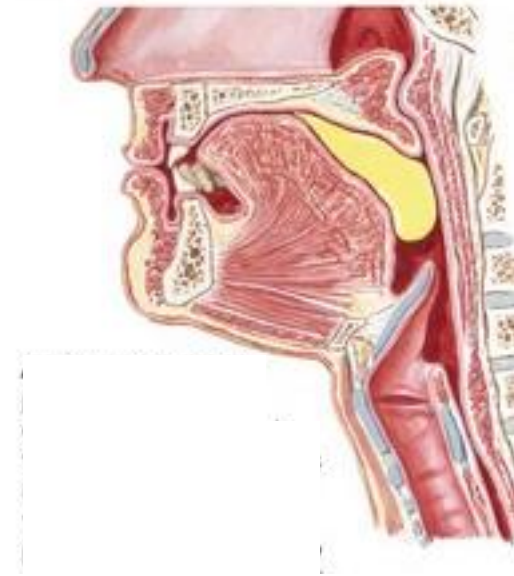
- Tip of the tongue rises up against the anterior palate
- Soft palate draws up
- Bulge starts to form in the upper part of the upper posterior pharyngeal wall to approach the soft palate



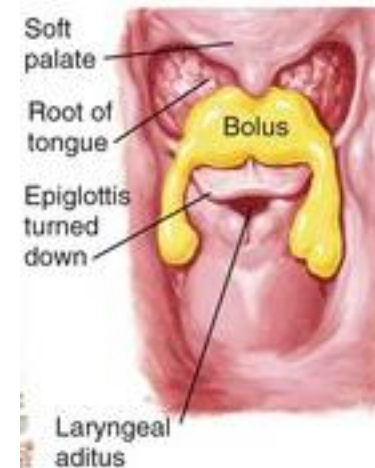
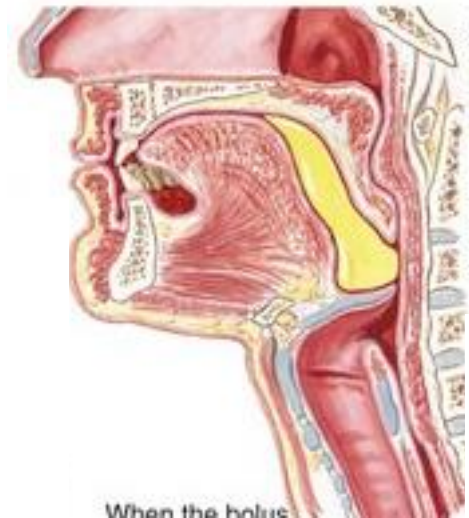
- Bolus lay in a groove formed by the **genioglossus** and **transverse intrinsic musculature of the tongue**



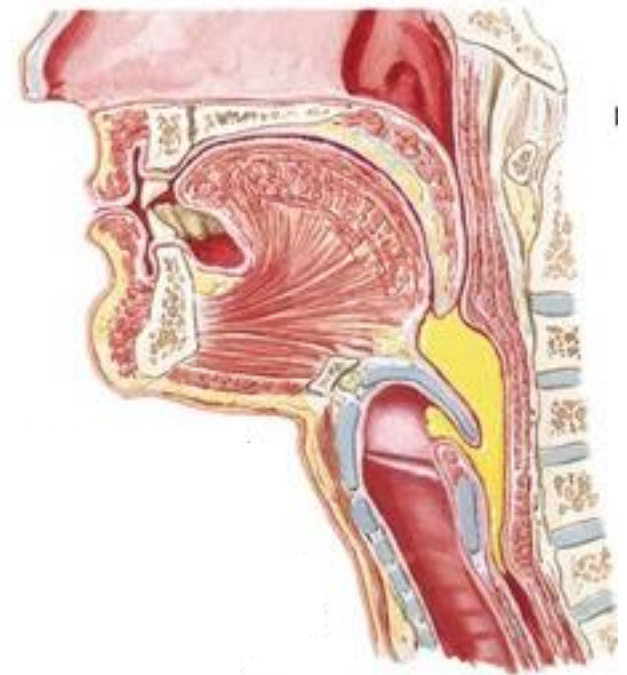
- Tongue pushes the bolus back by pressing against the hard palate
- Soft palate moves upward to close the nasopharynx
- Forward motion of the root of the tongue creates space for bolus movement



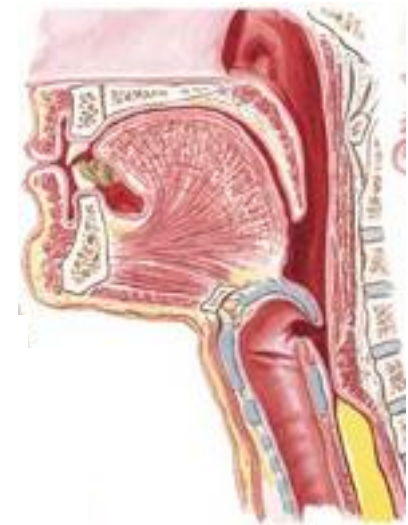
- Hyoid bone and larynx move upward and forward
- Epiglottis is tipped down
- Stripping wave on posterior pharyngeal wall begins pushing the bolus inferiorly

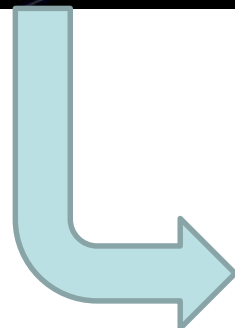
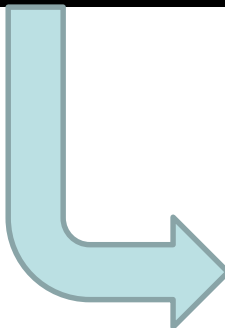
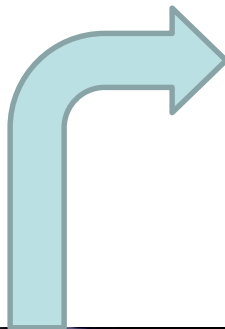
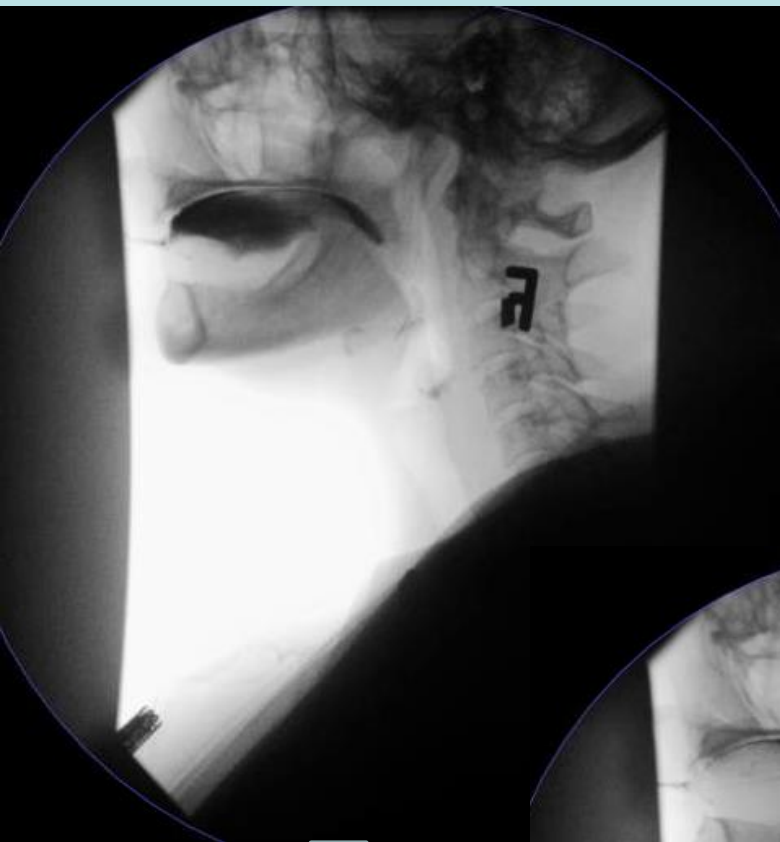


- Soft palate is pulled down dips to the root of the tongue
- Closed oropharyngeal cavity
- Relaxed cricopharyngeus to allow passage of food bolus

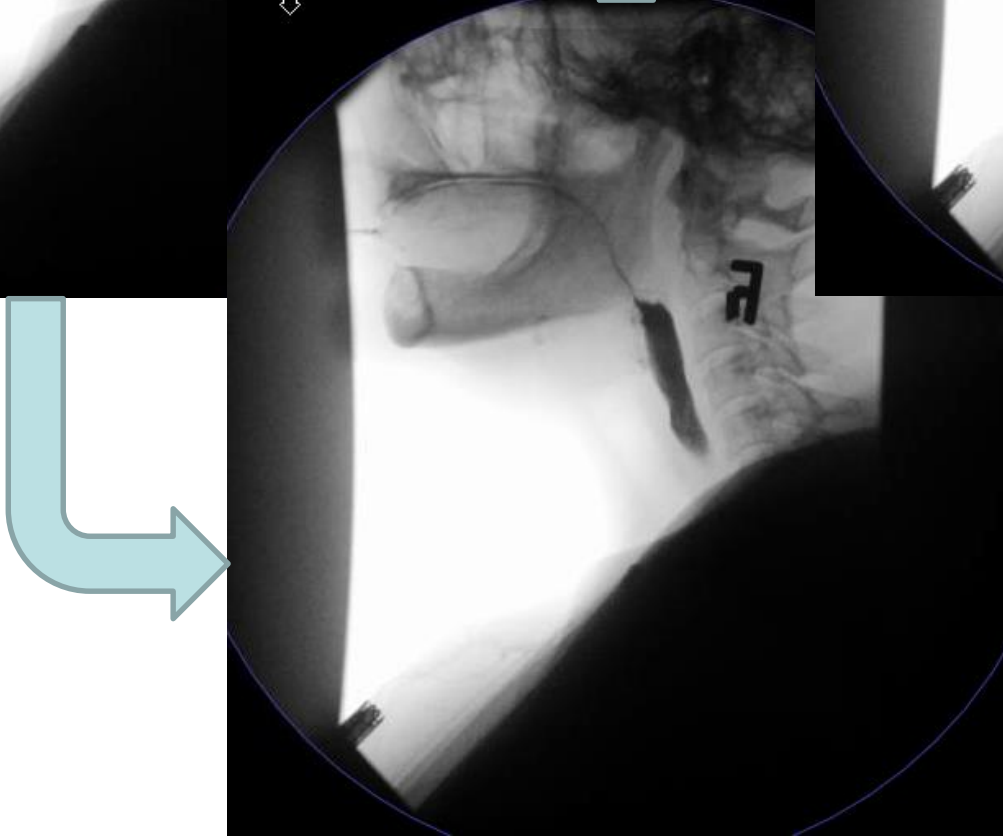
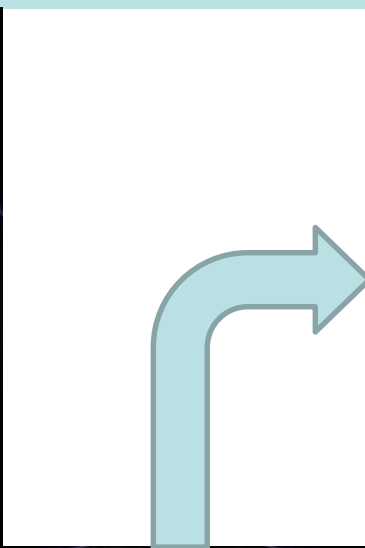
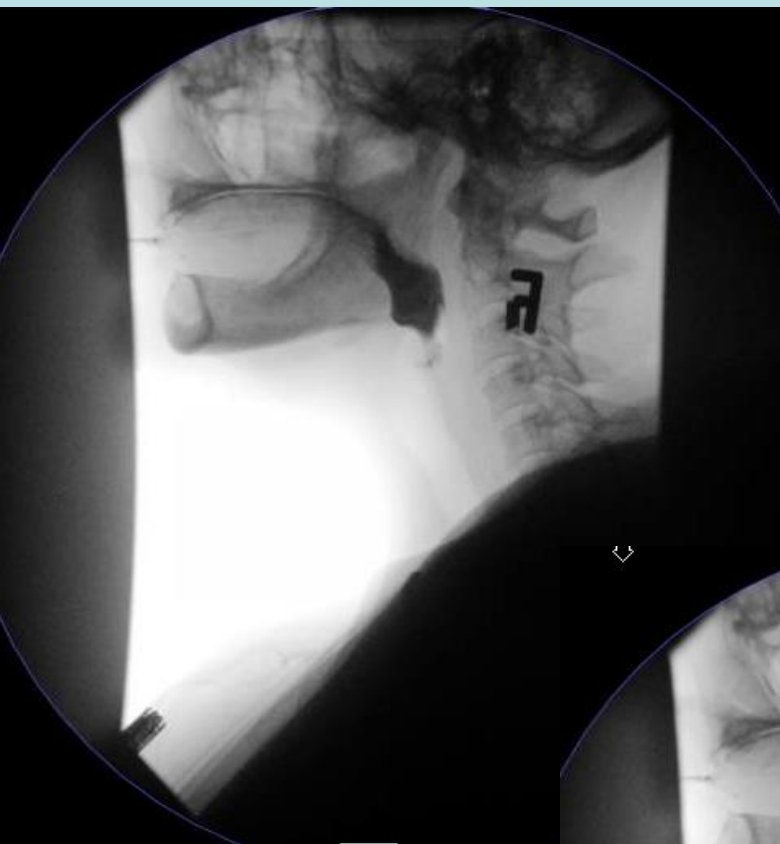


- Stripping wave reaches the vallecula and pushes the bolus down into the UES
- Cricopharyngeus muscle relaxes allowing the bolus to pass
- Epiglottis begins to turn up against the hyoid bone and larynx descends











# Disorders of Oral Phase of Swallowing

- Poor dentition
- Decreased salivary flow
- Reduced lingual control in addition to an absent/delayed swallowing reflex, and weakened laryngopharyngeal musculature
- Disordered and weakened tongue movements
- Mucosal disease



# Disorders of the Pharyngeal phase of Swallowing

- Central or peripheral nervous system disorders: CVA
- Muscular dystrophy
- Poor UES compliance causing incomplete relaxation
- Functional and anatomical abnormalities in the UES
- Esophageal obstruction



# Aspiration

- Passage of food or liquids through the vocal cords
- Caused by **impaired laryngeal closure** or overflow of retained food in the pharynx
- Factors that influence the effects of aspiration
  - Quantity
  - Depth
  - Physical properties of the aspirate
  - Pulmonary clearance mechanism



# History

- Onset: acute, progressive, intermittent
- Regurgitation, halitosis, pneumonia
- Neck fullness, mass
- Pain: direct or referred
- Changes in speech
- Weight loss
- Social history: smoking, alcohol
- Medications



# Signs/Symptoms of oral or pharyngeal dysphagia

- Coughing or choking with swallowing
- Difficulty initiating a swallow
- Food sticking
- Drooling
- Weight loss
- Change in dietary habits
- Recurrent pneumonia
- Voice changes
- Nasal regurgitation



# Medications that affect Oropharyngeal Function

- Sedatives, dystonia: BZD, neuroleptics, anticonvulsants
- Myopathy: Steroids, lipid lowering drugs
- **Xerostomia:** anticholinergics, anti-HTN, anti-psychotics, anti-depressants, anti-Parkinsonian, anti-neoplastics, etc., etc.
- **Inflammation: antibiotics**



# Physical Exam:

- Oral cavity: dentition, mouth sores and masses
- Tongue/uvula: position and symmetry
- Gag reflex
- Head and neck; supraclavicular region
- Neurologic exam
- Water swallow test:
  - Done post-CVA: identified 80% of those found to have aspiration in radiologic studies (*KV Kuhleimer, Dysphagia 1998*)



# Modified barium swallow vs Esophagram

MBS	Esophagram
Oral and pharyngeal dysphagia	Food sticking below the collarbone
Food sticking in the oropharynx	Hiatal hernia
Laryngeal abnormalities	Zenkers diverticulum
CVA	Esophageal stricture
Questionable aspiration	Esophageal dysmotility
Recurrent pneumonia and R lower lobe infiltrates	Possible mass
Progressive neurological disease	Reflux and regurgitation





# Modified barium swallow vs Esophagram

	MBS	Esophagram
<b>Bolus character</b>	Food tray: various consistencies with barium	Liquid barium
<b>Staff</b>	Radiology & speech pathologist or ENT	Radiology
<b>Preparation</b>	No preparation	NPO for 2 hours
<b>Extent</b>	Oral and pharyngeal phases of swallowing	Esophageal phase



# Modified Barium Swallow in Dysphagia

- 93 patients with swallowing difficulties
  - 45 women, 48 men; mean age 62
- Undergone clinical and radiographic evaluation
- Clinical and radiographic evaluation correlated well
  - The correlation was close to 94% of patients
  - Status of pharyngeal function was not determined in 61 (66%) of 93 by clinical examination alone
- Conclusions
  - Combined clinical and radiographic examinations correlated well
  - Clinical evaluation alone was limited by failure to adequately evaluate the pharynx

David J. Ott, et. al Dysphagia 1996



# Additional diagnostic studies

- Esophagoscopy
- Esophageal manometry and pH probe
- EMG
- FEES

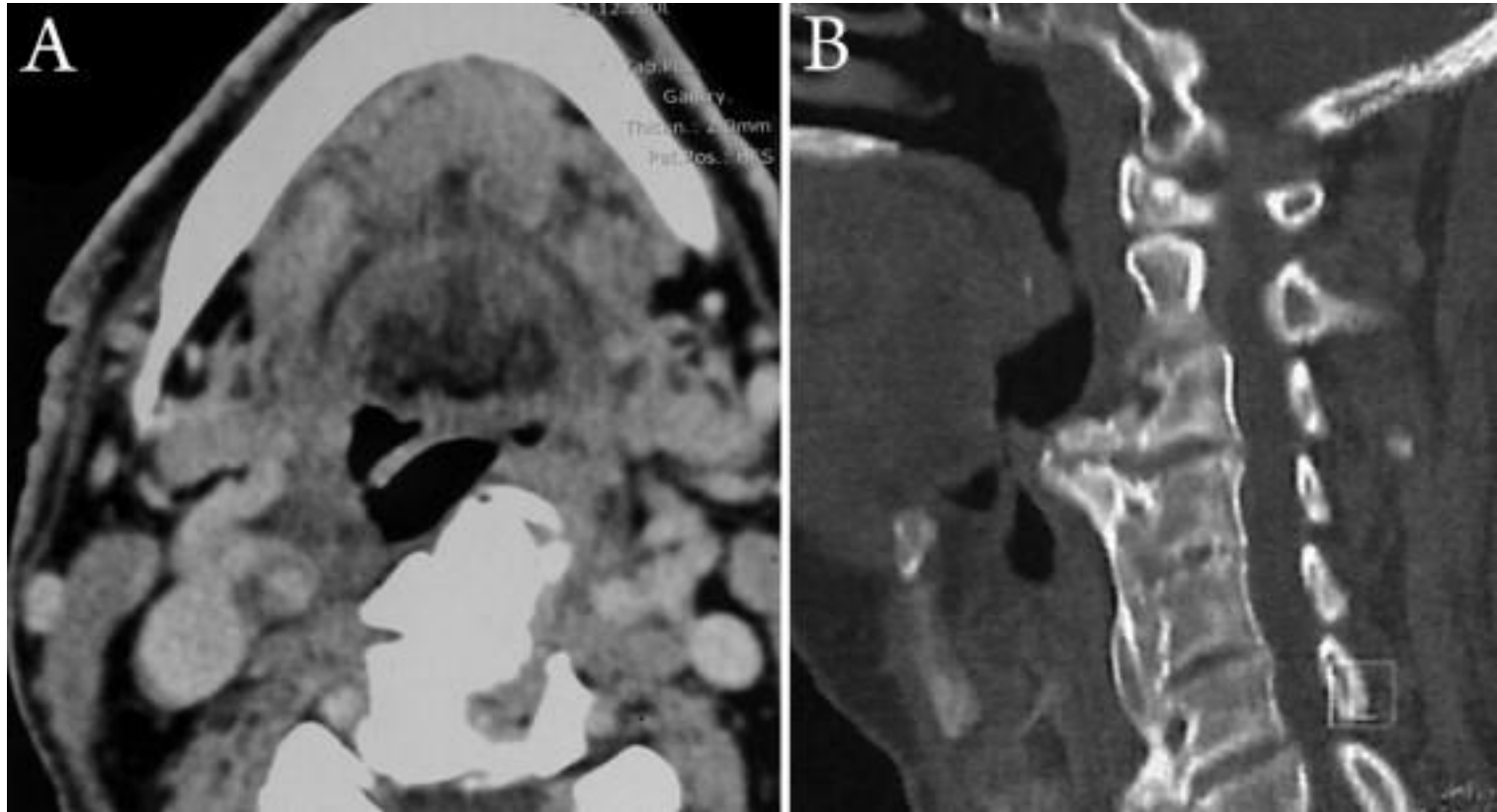


# Etiologies of Oropharyngeal

PRIMARY	SECONDARY
<p>Structural:</p> <ul style="list-style-type: none"> <li>•Cricopharyngeal bar</li> <li>•Zenker's diverticulum</li> <li>•Cervical webs</li> <li>•Osteophytes and skeletal abnormalities</li> <li>•Congenital</li> </ul>	<p>Iatrogenic:</p> <ul style="list-style-type: none"> <li>•Medication side effects</li> <li>•Postsurgical changes</li> <li>•Radiation</li> <li>•Corrosive</li> </ul>
	Infectious: Mucositis, Lyme, Syphilis
	Metabolic: Thyrotoxicosis, Amyloidosis
	<p>Myopathic:</p> <ul style="list-style-type: none"> <li>•Connective tissue disease</li> <li>•Myasthenia gravis</li> <li>•Myotonic dystrophy</li> </ul>
	<p>Neurologic</p> <ul style="list-style-type: none"> <li>• Stroke</li> <li>• Head trauma</li> <li>• ALS, CP, MS</li> <li>• Dementia</li> </ul>



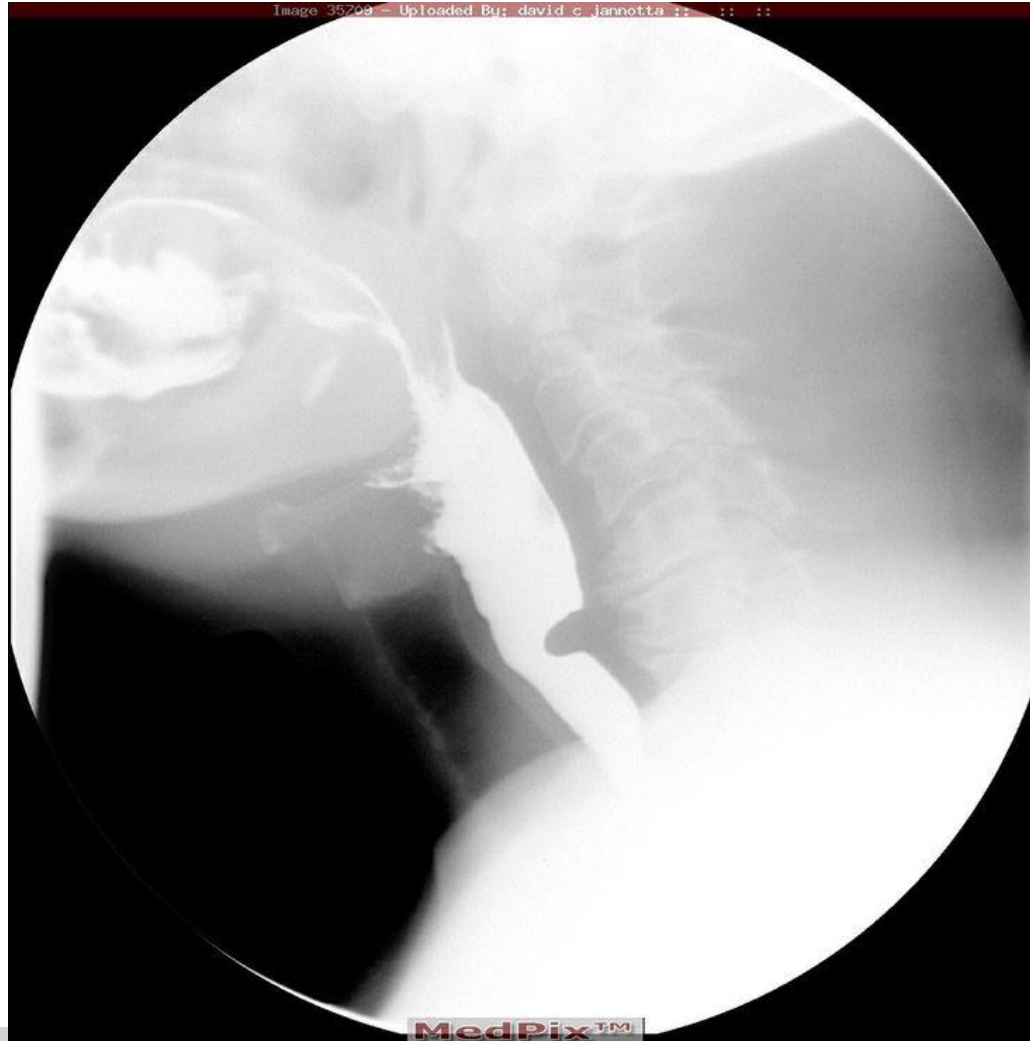
# Cervical Osteophytes



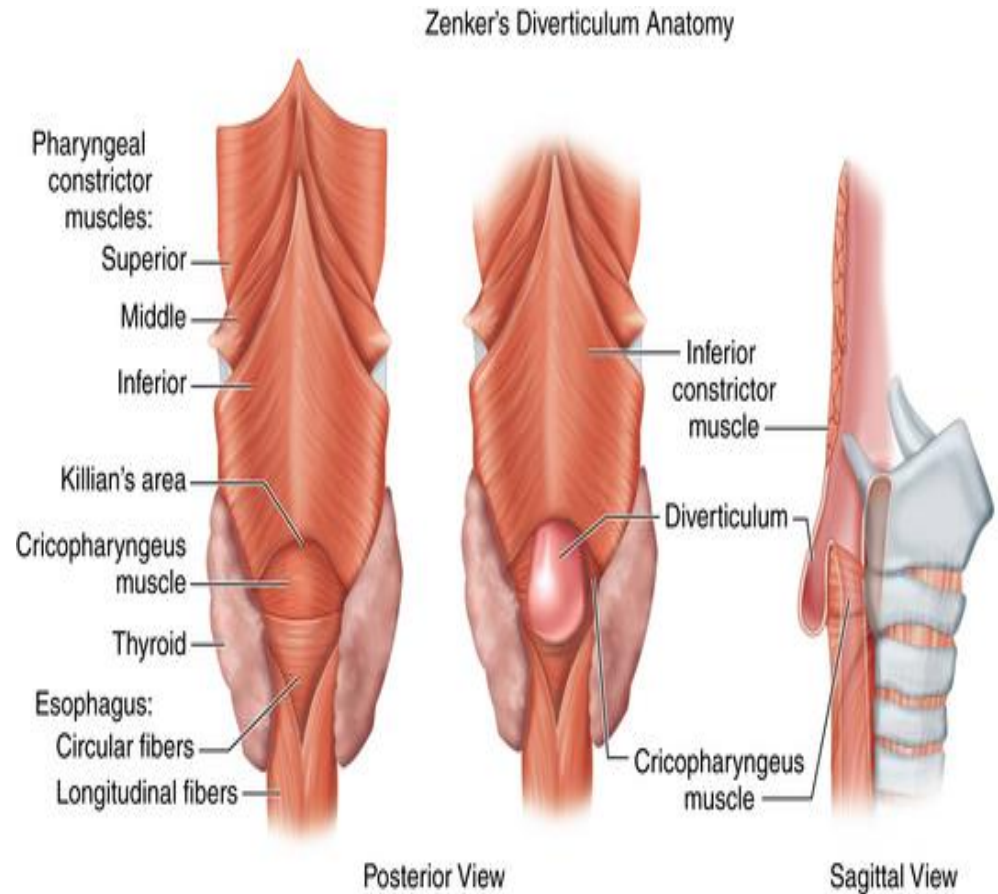
P. Lecerf Euro Annals of Otorhino 2010



# Cricopharyngeal bar



# Zenkers Diverticulum



# Esophageal Rings and Webs

- Rings: found in the distal esophagus
  - A ring: proximal to the squamocolumnar junction, impression of the LES
  - B ring: mucosal structure at the Squamocolumnar junction
- Webs: unknown cause
  - Occur in the cervical esophagus
  - Cause narrowing of the postcricoid area





# Esophageal Webs

- Associated with iron deficiency anemia (Plummer-Vinson Syndrome)
- Other associations: bullous dermatologic disorders, chronic graft-versus-host disease
- Barium esophagram vs endoscopy
- Treatment: usually ruptured during endoscopy
- Good response to dilation

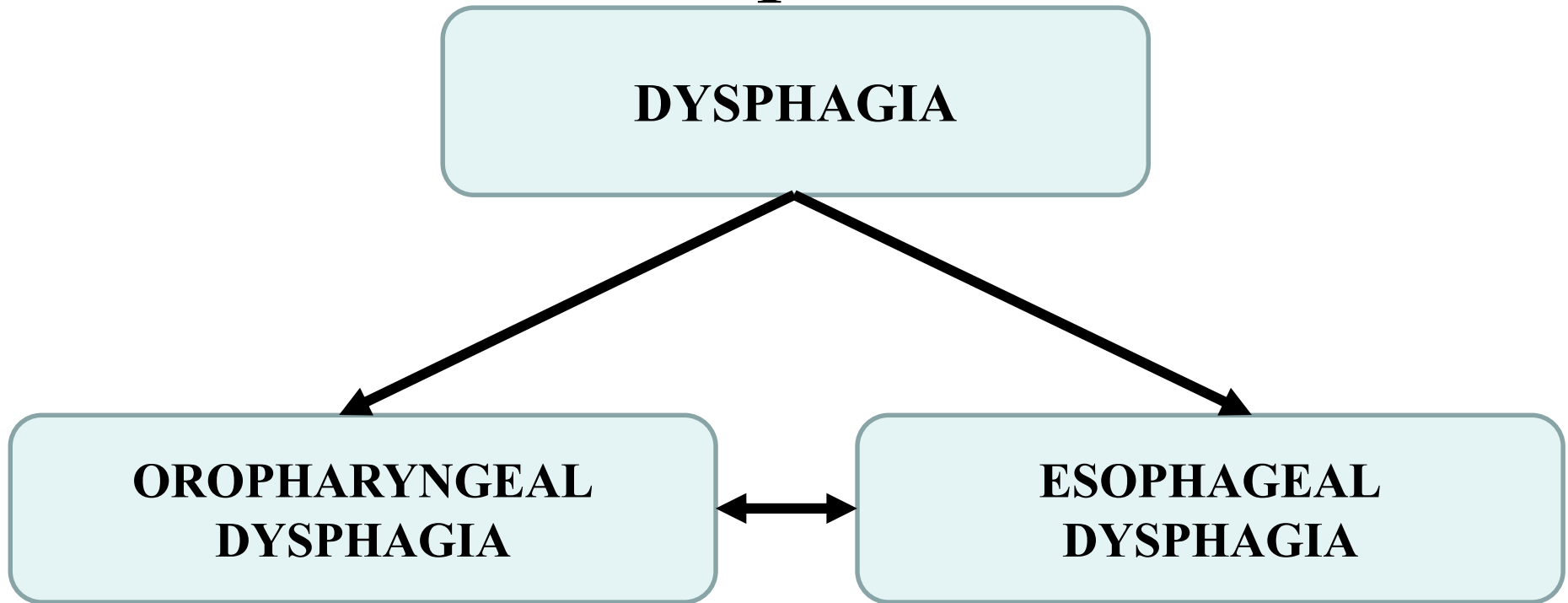








# General Approach to Swallowing Complaints



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