

Did You See That?? Interesting Modified Barium Swallow Studies

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Disclosures

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- Financial-Employed as Clinical Manager-Ohio, MBSEnvision. I am paid a salary.

- Non-financial-None

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- Financial-Lead SLP MBS Envision, Michigan. Paid a salary.

- Non-financial-None

Why bother?

- Appropriate referral
 - Martin-Harris, 2000
 - Reviewed over 600 MBSs, found a needed referral in 26%
- Appropriate recommendations
 - Strategies that improved swallow function 48.4%
 - Therapy recommended 37.2%
 - Changes in mode of intake 31.4%
 - Diet texture changes 43.8%

First things first..what is normal?



Oral



Oral: Poor Denture Fit

- Prosthetic Dentistry Study
- 92% of participants with full dentures worn "most or all of time"
 - 90% were assessed to need significant adjustment
 - 69% total remake
 - 58% felt they did not need or were unsure if they needed dental assessment
 - 58% felt that the fit of their dentures was excellent or good

REFERRAL: PROSTHETIC DENTIST

Weintraub, 1985

Oral



Oral: Edentulous mastication

- Normal does NOT mean perfect!
- Talk to your patient!!!

Oral



Oral: Torus Palatine

- Bony protrusion on palate
- Midline
- Fairly common
- Not usually problematic
- Usually less than 2 cm, but can change
- Appearance
 - Flat, spindle, lobular
- Less common to develop on mandible

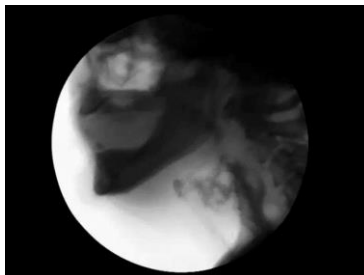
REFERRAL: PRIMARY CARE PHYSICIAN

Neville et al., 2002

Oral: Torus Palatine



Oropharyngeal



Oropharyngeal: V-P Insufficiency

- Neurological
 - CVA, Parkinson's, ALS, etc.
- Structural
 - Resection secondary to oral/laryngeal CA

REFERRAL: OTOLARYNGOLOGIST

Perlman, 1997

Oropharyngeal



Oropharyngeal: Soft tissue changes

- Traumatic
 - Intubation
- Surgical scarring
 - Head and neck surgical hx
- GERD
- Mass
- Edema
 - Infection

REFERRAL: PRIMARY CARE/OTOLARYNGOLOGIST

Pharyngeal



Pharyngeal



Pharyngeal: Chin tuck

- Not always effective
 - Shanahan, Logemann et al., 1996; Nagaya et al., 2004; Terre et al., 2012
- Weaker pharyngeal contractions
 - Bulow et al., 1999
- Use of chin tuck can be ineffective or worsen severity of aspiration with patients with weak pharyngeal constrictor muscles

Pharyngeal



Pharyngeal: NG misplacement

- Using x-ray is the “gold standard” to assess placement
- Coiling of ng tube in pharynx can cause
 - Respiratory distress
 - Aspiration
 - Choking
 - Injury

REFERRAL: PRIMARY CARE PHYSICIAN/ER

Agarwal, 2002

Pharyngeal

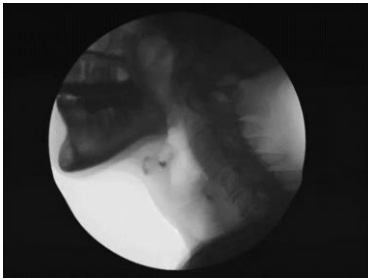


Pharyngeal: Total Laryngectomy

- Why bother?
 - Poor historian
 - Fistula?
 - Oral function?
 - Pharyngeal residue?

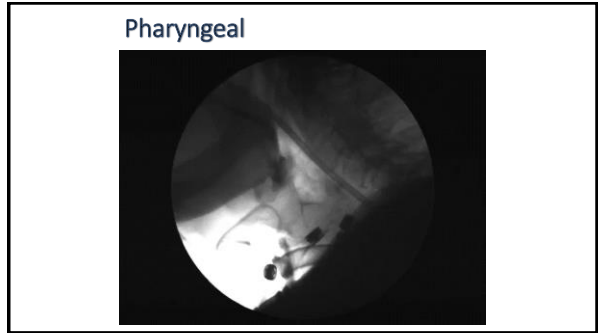
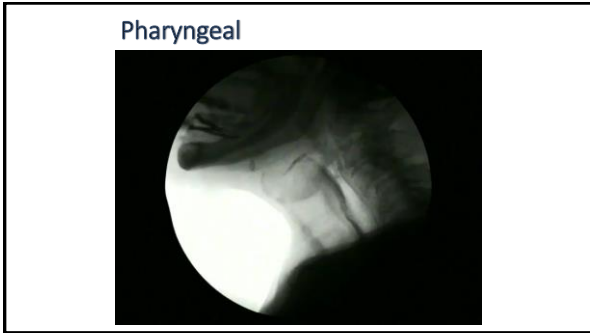
REFERRAL: PRIMARY CARE PHYSICIAN

Pharyngeal



Pharyngeal: Calcification

- Calcification of laryngeal cartilages common
 - Normal part of aging process
 - Jurik, 1984
- Calcification of epiglottis is rare
 - Epiglottis is made of more fibrous cartilage than arytenoids, thyroid and cricoid cartilages
 - Ardran, 1964

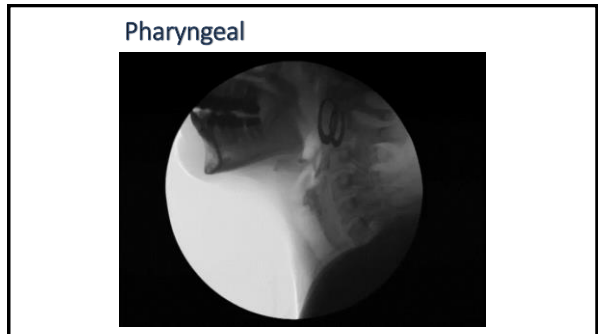


Pharyngeal: Scar tissue

- Laryngeal granulomas
 - 3% trachs
 - Norwood et al (2000)
- Most frequent late effect complication with trachs
- can be subclinical
- or may present as
 - failure to wean from the ventilator
 - failure to decannulate
- Granulation tissue may cause airway occlusion
- Can result in airway stenosis

REFERRAL: OTOLARYNGOLOGIST

Epstein, 2005



Pharyngeal: Calcification

- Marker of cardiovascular disease
- Can be associated with a higher risk of dementia

REFERRAL: PRIMARY CARE PHYSICIAN

Bos, 2014; Fanning, 2006



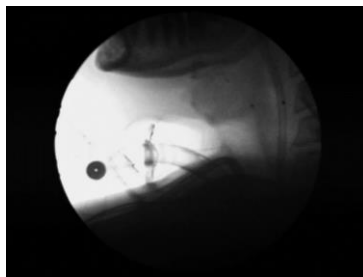
Pharyngeal: Osteophyte

- Primarily below the level of C3.
- Complete resolution of the dysphagia after surgical excision is not always seen
- Complications of surgical removal

REFERRAL: OTOLARYNGOLOGIST

McCulloch and Jaffe, 2006

Pharyngeal



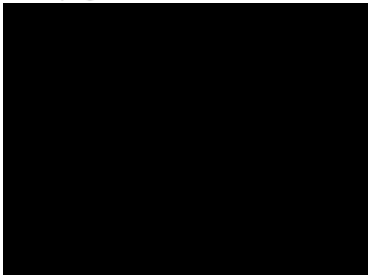
Pharyngeal: Trach/NG risk?

- Trach risk
 - Leder 2010
 - 25 participants
 - Instrumental assessments pre and post trach
 - 22 (88%) same or better
 - 3 worse (worsening medical condition)
 - 4 improved to no aspiration (improved medical)
 - "Tethering"?
 - Tube "pulls down" or "holds" larynx
 - Terk, 2007
 - MBS 7 patients
 - Trach/cuffed, trach/capped, no trach
 - Measured max hyoid displacement and laryngeal movement
 - No difference in any patient in any condition

Pharyngeal: Trach/NG risk?

- NG risk
 - Timing
 - Increased oral and pharyngeal transit times
 - Normals and post-stroke
 - Huggins, 1999; Wang, 2006
 - Swallow safety
 - No significant differences
 - Dielews, 2008; Huggins, 1999; Butler, 2009
 - Aspiration
 - Leder & Suiter, 2008
 - Compared 630 with and 630 without ng
 - No significant differences in aspiration incidences
 - Fattal, Suiter, Warner & Leder, 2011
 - Compared same individuals with tube in and tube out
 - No significant differences in aspiration incidences

Pharyngeal



Pharyngeal: Calcified lymph nodes

- Rare-estimated 1%
- Associated with
 - Benign disease
 - Current or past infection
 - Malignancies
 - Not a high enough correlation with malignancy to use as a predictor

REFERRAL: PRIMARY CARE PHYSICIAN

Eisenkraft & Som, 1999

Pharyngeal



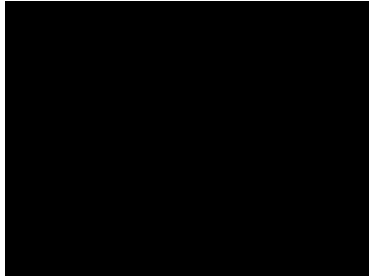
Pharyngeal: Silent aspiration

- Aspiration
 - Garon et al., 2009
 - 2,000 MBS completed
 - 51% aspirated
 - 55% of those who aspirated were SILENT aspirators

Pharyngeal: Silent aspiration



Pharyngeal



Pharyngeal: Foreign body

- Can be difficult to diagnose
 - Non-obstructing or partially obstructing
 - Can present as history of choking, dysphagia, odynophagia, or dysphonia
 - Undiagnosed coughing, stridor, or hoarseness
- The most common foreign bodies in the throat are pieces of plastic, metal pins, seeds, nuts, bones, coins, and dental appliances

REFERRAL: ER
Heim, 2007

Pharyngeal: Foreign body



Pharyngo-esophageal



Pharyngo-esophageal: Diverticula

- Formation and bulging of pouch through musculature
- Thought to be caused by increased pressure in pharynx/esophagus
 - Pharynx: excessive coughing, instrument, effortful deglutition
 - Esophagus: distal obstruction, achalasia, dysmotility
- Symptoms
 - Pain with swallow, regurgitation, bad breath, weight loss
 - Decreased PO intake, aspiration pneumonia, cough post swallow

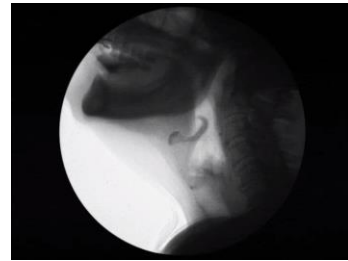
REFERRAL: OTOLARYNGOLOGIST/GASTROENTEROLOGIST

Porcaro-Sales et al, 2011

Pharyngo-esophageal



Pharyngo-esophageal



Pharyngo-esophageal

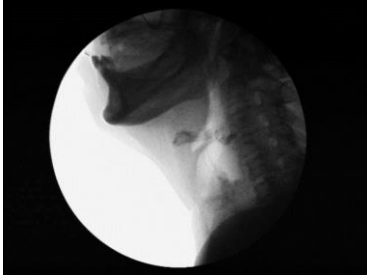


Pharyngo-esophageal: C-P bar

- Spasm of cricopharyngeus
- Appears as a posterior indentation at the pharyngo-esophageal junction during the swallow
- Can occur alone or in combination with Zenker's diverticulum
- Not always associated with dysphagia
 - Normal flow rate
 - Normal UES pressure and relaxation
 - Normal peristalsis of pharynx

Dantas et al, 1990; Jones, 2006; Kuhn et al., 2013

Esophageal



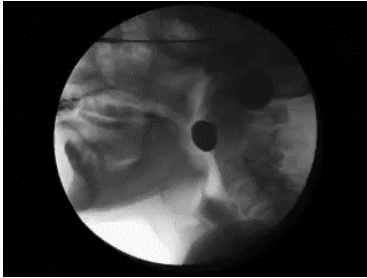
Esophageal: Ring/ Web

- Most common type of anatomical difference in esophagus
- Can be congenital or acquired
- Seen in estimated 5-15% patients during an MBS
- Singular or multiples



REFERRAL: GASTROENTEROLOGIST

Esophageal



Esophageal: UES dysfunction

- Can result from
 - cricopharyngeal fibrosis
 - neurological impairment
 - combination of these factors
- Diagnosed via manometry
 - appearance on MBS is nonspecific

REFERRAL: GASTROENTEROLOGIST

Cook, 2006

Esophageal



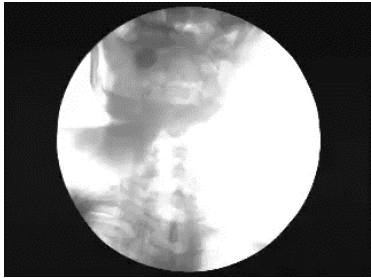
Esophageal: Achalasia

- Incomplete relaxation of the LES and lack of peristalsis of the esophagus
- Presents as:
 - Difficulty swallowing
 - Regurgitation
 - Chest pain
- Treatments
 - Botox /medication
 - Esophageal dilation
 - Myotomy
- Usually no underlying cause, but a small percentage can occur secondary to a disease process
- Affects about one person in 100,000 per year

REFERRAL: GASTROENTEROLOGIST

McCulloch & Jaffe

Esophageal



Esophageal: Pill dysphagia

- 40% of American adults have experienced difficulty swallowing pills, even though most have had no problems swallowing food or liquid.
 - 14% - delayed taking doses
 - 8% - skipped a dose
 - 4% - discontinued using their medication
- Can lead to pill esophagitis

REFERRAL: GASTROENTEROLOGIST/PHARMACIST

Harris Interactive/Schwartz Pharma, 2003

Esophageal



Esophageal: Megaesophagus

- Distention of the esophagus
- Lack of peristalsis, incomplete relaxation of LES
- Causes
 - Achalasia
 - Lap band surgery complication
 - Chagas disease
- Dysphagia most common symptom

REFERRAL: GASTROENTEROLOGIST

Chuah et al, 2013; Farrokhi et al, 2007

Esophageal



Esophageal: Hiatal hernia

- Part of the stomach slides through the diaphragm and into the chest cavity
 - congenital
 - age-acquired
 - 4 in 10 Americans over 50
- Symptoms
 - Belching, excessive gas, hiccups, difficulty swallowing, reflux, lower chest pain, abdominal pain, nausea

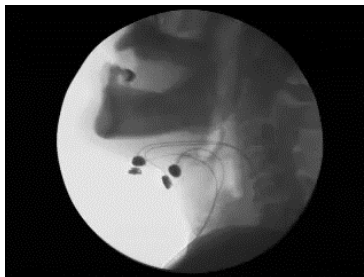
REFERRAL: GASTROENTEROLOGIST

Puri et al, 2004; Wu et al, 2003

What if I don't know??

- ASK!!!
 - Radiologist
- SIG 13
- Social media
 - SNL
 - Dysphagia café
 - Medical SLP forum
 - National Foundation of Swallowing Disorders
 - MBSimp
- BCS-S
 - www.swallowingdisorders.org
- cbrindo@mbsenvision.com

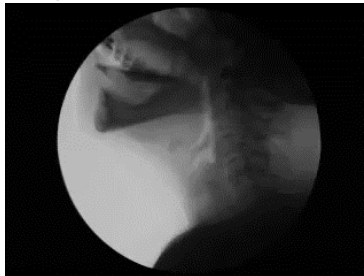
Did you see that??



Did you see that??



Did you see that??



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