Common Laryngeal Disorders in Primary Care

How Not to Miss Something Important

Laura Matrka, MD
Associate Professor
Department of Otolaryngology
The Ohio State University Wexner Medical Center

"You don't have to treat it, you just need to catch it" –Janet Gick, MD, family medicine physician

Objectives

At the conclusion, primary care practitioners will understand:

- Red flags and high-suspicion cases
  - i.e. when to call the ENT directly and ensure a more expeditious referral
- When to refer non-smokers who are hoarse
- What to do about the PPI question

Case

- Patient is a 46yo female with 6 weeks of increased hoarseness absent any illness
  - Never smoker
  - Obese
  - Significant increase in family-related stress

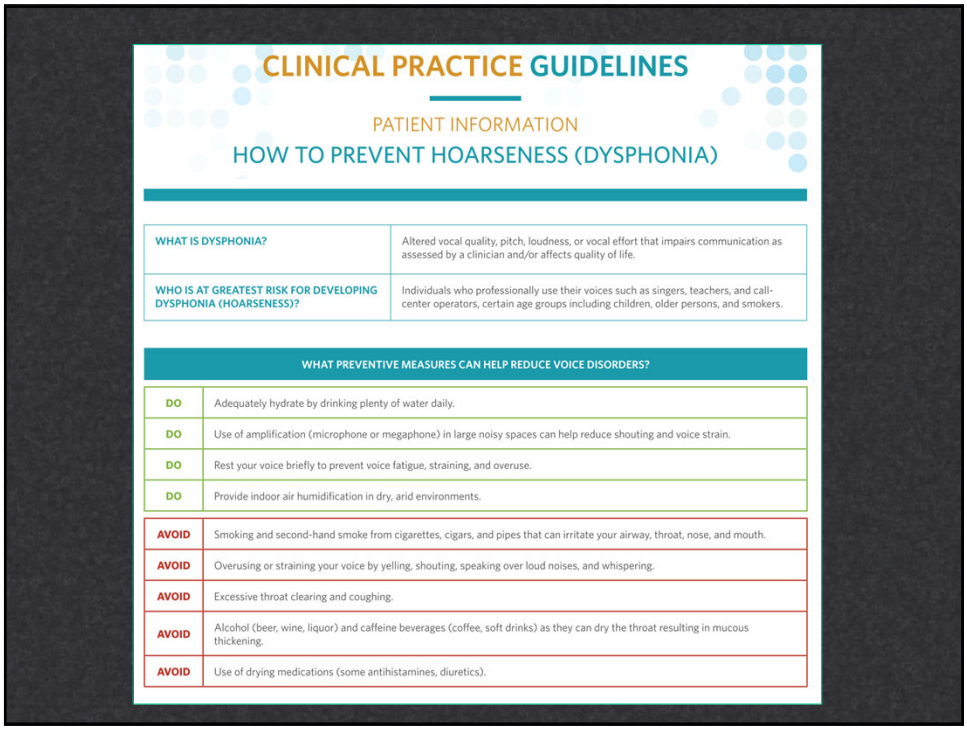
First steps?

- Which do you do?
  - Referral to ENT for scope of vocal cords
  - Check for red flags and gather more history
  - Treat empirically for infection, GERD or allergies
  - Take a closer look at her medication list

First steps?

- Which do you do?
  - Referral to ENT for scope of vocal cords
  - Check for red flags and gather more history
  - Treat empirically for infection, GERD or allergies
  - Take a closer look at her medication list

Let's go to the guidelines!



CLINICAL PRACTICE GUIDELINES

PATIENT INFORMATION

HOW TO PREVENT HOARSENESS (DYSPHONIA)

WHAT IS DYSPHONIA?	Altered vocal quality, pitch, loudness, or vocal effort that impairs communication as assessed by a clinician and/or affects quality of life.
WHO IS AT GREATEST RISK FOR DEVELOPING DYSPHONIA (HOARSENESS)?	Individuals who professionally use their voices such as singers, teachers, and call-center operators, certain age groups including children, older persons, and smokers.

WHAT PREVENTIVE MEASURES CAN HELP REDUCE VOICE DISORDERS?

DO	Adequately hydrate by drinking plenty of water daily.
DO	Use of amplification (microphone or megaphone) in large noisy spaces can help reduce shouting and voice strain.
DO	Rest your voice briefly to prevent voice fatigue, straining, and overuse.
DO	Provide indoor air humidification in dry, arid environments.
AVOID	Smoking and second-hand smoke from cigarettes, cigars, and pipes that can irritate your airway, throat, nose, and mouth.
AVOID	Overusing or straining your voice by yelling, shouting, speaking over loud noises, and whispering.
AVOID	Excessive throat clearing and coughing.
AVOID	Alcohol (beer, wine, liquor) and caffeine beverages (coffee, soft drinks) as they can dry the throat resulting in mucous thickening.
AVOID	Use of drying medications (some antihistamines, diuretics).

Guidelines Plain Language Summary

AMERICAN ACADEMY OF OTOLARYNGOLOGY–HEAD AND NECK SURGERY FOUNDATION

Plain Language Summary: Hoarseness (Dysphonia)

Otolaryngology–Head and Neck Surgery
2018, Vol. 158(3) 427–431

4B. Need for laryngoscopy in persistent dysphonia

Recommendation

Clinicians should perform laryngoscopy, or refer to a clinician who can perform laryngoscopy, when dysphonia fails to resolve or improve within 4 weeks or, irrespective of duration, if a serious underlying cause is suspected

First steps?

- Which do you do?
  - Referral to ENT for scope of vocal cords
    - Always ok – guidelines recommend referral within 4 weeks if no serious underlying cause suspected

But how quickly?

- Which do you do?
  - Referral to ENT for scope of vocal cords
  - Check for red flags and gather more history
  - Treat empirically for infection, GERD or allergies
  - Take a closer look at her medication list

Immediate referral?

- Recent head, neck, chest surgery
- Recent intubation
- Smoker
- Neck mass
- New dyspnea
- Professional voice user
  - Teacher
  - Doctor
  - Lawyer
  - Singer
  - Call center employee
  - Most people w jobs

Guidelines Plain Language Summary

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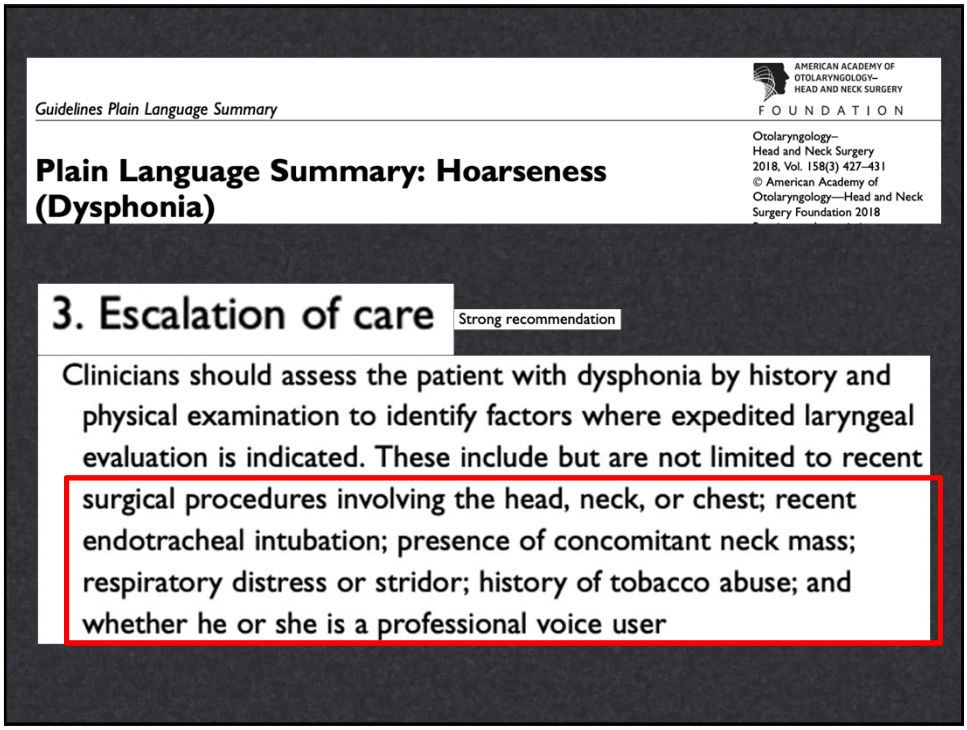
3. Escalation of care

Strong recommendation

Clinicians should assess the patient with dysphonia by history and physical examination to identify factors where expedited laryngeal evaluation is indicated. These include but are not limited to recent surgical procedures involving the head, neck, or chest; recent endotracheal intubation; presence of concomitant neck mass; respiratory distress or stridor; history of tobacco abuse; and whether he or she is a professional voice user



Additional history

- High-yield history:
  - Recent head, neck, chest surgery?
  - Recent intubation?
  - New dyspnea?
  - Smoker or significant smoking hx?
  - Professional voice user?
- High-yield physical exam:
  - neck mass?
  - stridor?

Our patient

- No recent surgery or intubation
- Non-smoker
- No change in breathing
- She is a homemaker and does not have special voice-related needs
- No neck mass or stridor

Our patient

- So no red flags, but has been long enough that a (non-urgent) referral is reasonable
- But in the meantime…?

First steps?

- Which do you do?
  - Referral to ENT for scope of vocal cords
    - YES
  - Check for red flags and gather more history
    - YES
  - Treat empirically for infection, GERD or allergies
  - Take a closer look at her medication list

Let's go to the guidelines!

NO empiric treatment!

5. Imaging	Clinicians should *not* obtain computed tomography (CT) or magnetic resonance imaging (MRI) in patients with a primary voice complaint prior to visualization of the larynx
6. Antireflux medication and dysphonia	Clinicians should *not* prescribe antireflux medications to treat isolated dysphonia, based on symptoms alone attributed to suspected gastroesophageal reflux disease (GERD) or laryngopharyngeal reflux (LPR), without visualization of the larynx
7. Corticosteroid therapy	Clinicians should *not* routinely prescribe corticosteroids in patients with dysphonia prior to visualization of the larynx
8. Antimicrobial therapy	Clinicians should *not* routinely prescribe antibiotics to treat dysphonia

NO antibiotics!

5. Imaging	Recommendation against	omputed tomography (CT) or (MRI) in patients with a primary voic ion of the larynx
6. Antireflux medication and dysphonia	Recommendation against	e antireflux medications to treat n symptoms alone attributed to reflux disease (GERD) or PR), without visualization of the larynx
7. Corticosteroid therapy	Recommendation against	prescribe corticosteroids in patients alization of the larynx
8. Antimicrobial therapy	Strong recommendation against	prescribe antibiotics to treat

- **Do NOT get imaging**
- **Do NOT give steroids and antibiotics**
- **You can consider treating for allergies or reflux, but only if there are other reasons for this besides the dysphonia alone**

DOs

- Hydrate and humidify
- Voice rest
- Amplify

DO	Adequately hydrate by drinking plenty of water daily.
DO	Use of amplification (microphone or megaphone) in large noisy spaces
DO	Rest your voice briefly to prevent voice fatigue, straining, and overuse.
DO	Provide indoor air humidification in dry, arid environments.

DON'Ts

- Smoking or secondhand
- Voice overuse, whispering, yelling
- Caffeine, alcohol, drying meds → thick mucus

AVOID	Smoking and second-hand smoke from cigarettes, cigars, and pipes that can irritate your airway,
AVOID	Overusing or straining your voice by yelling, shouting, speaking over loud noises, and whispering.
AVOID	Excessive throat clearing and coughing.
AVOID	Alcohol (beer, wine, liquor) and caffeine beverages (coffee, soft drinks) as they can dry the throa thickening.
AVOID	Use of drying medications (some antihistamines, diuretics).

First steps?

- Which do you do?
  - Referral to ENT for scope of vocal cords
    - YES
  - Check for red flags and gather more history
    - YES
  - Treat empirically for infection, GERD or allergies
    - NO
  - Take a closer look at her medication list

Our patient

- No drying meds
- Hydrates well
- 1 small cup of coffee in morning, no other caffeine

Our patient

- She notes occasional heartburn and frequent thick mucus in her throat
- Worse after meals
- Tends to eat late at night
- Remember her recent family stress?

- This is a patient who could be treated with an anti-reflux diet
  - Or even an H2 blocker or PPI prior to referral
- But ONLY as you would treat her if she didn't have the dysphonia

Key point - Red flags

History:

- Recent head, neck, chest surgery
- Recent intubation
- Smoker
- Neck mass
- New dyspnea
- Professional voice user

PE findings:

- Stridor
- Neck mass

Case 2

- 67yo male with hoarseness
  - He's sounded like this for a while
  - His wife made him come in, he doesn't know why
- High-yield history and PE

Additional history

- High-yield questions:
  - Recent head, neck, chest surgery?
  - New dyspnea?
  - Recent intubation?
  - Smoker or significant smoking hx?
  - Professional voice user?

Additional history

- High-yield questions:
  - Recent head, neck, chest surgery?
    - NO
  - New dyspnea?
  - Recent intubation?
  - Smoker or significant smoking hx?
  - Professional voice user?

Additional history

- High-yield questions:
  - Recent head, neck, chest surgery?
  - New dyspnea?
    - YES
  - Recent intubation?
  - Smoker or significant smoking hx?
  - Professional voice user?

Additional history

- High-yield questions:
  - Recent head, neck, chest surgery?
  - New dyspnea?
  - Recent intubation?
    - NO
  - Smoker or significant smoking hx?
  - Professional voice user?

Additional history

- High-yield questions:
  - Recent head, neck, chest surgery?
  - New dyspnea?
  - Recent intubation?
  - Smoker or significant smoking hx?
    - 55 pack-years
  - Professional voice user?

Additional history

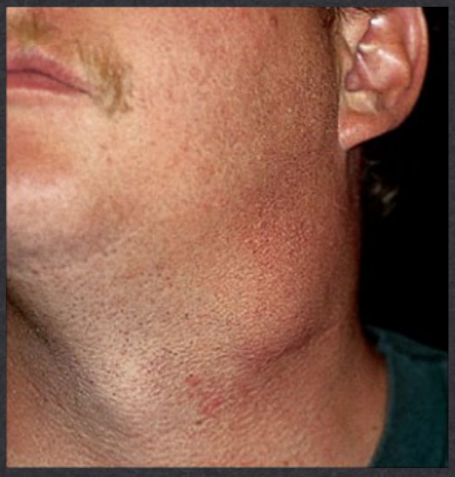
- High-yield questions:
  - Recent head, neck, chest surgery?
  - New dyspnea?
  - Recent intubation?
  - Smoker or significant smoking hx?
  - Professional voice user?
    - Still works in carpentry occasionally

PE

- High-yield physical exam:
  - neck mass?
  - stridor?

PE

- High-yield physical exam:
  - neck mass?
    - YES
  - stridor?



PE

- High-yield physical exam:
  - neck mass?
  - stridor?
    - No….?
    - You didn't think so, but something sounded odd when he started laughing

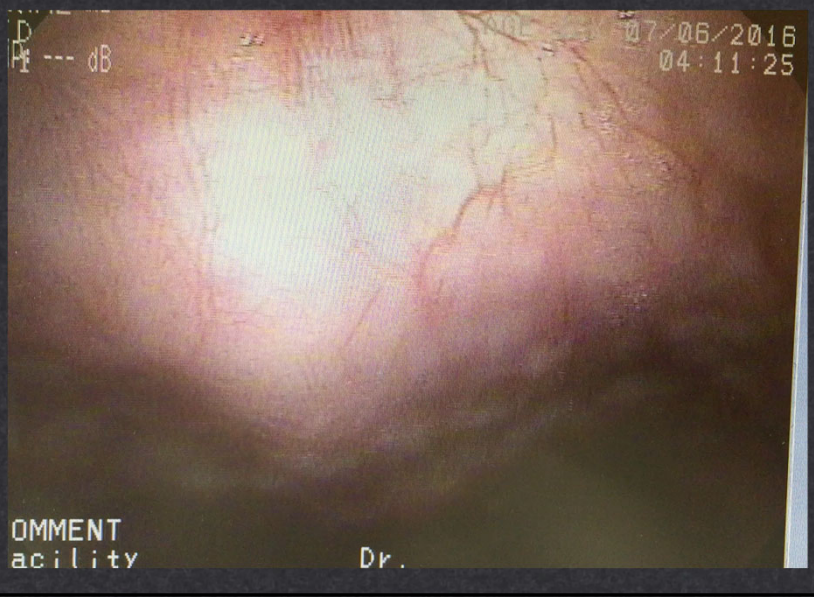
Summary

- High-yield questions:
  - New dyspnea?
    - YES (Can't sleep lying flat)
  - Smoker or significant smoking hx?
    - 55 pack-years
  - Neck mass?
    - YES
  - Stridor?
    - Maybe

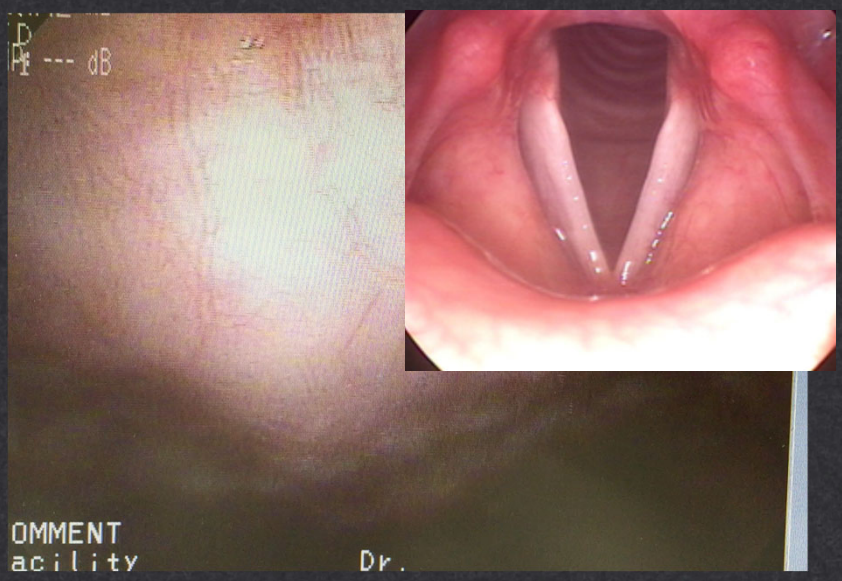
IMMEDIATE REFERRAL

- He is scheduled with local ENT for 7 weeks later.
- You call the office and ask that he be seen sooner.
- ENT sees this:

IMMEDIATE REFERRAL



IMMEDIATE REFERRAL



IMMEDIATE REFERRAL

- T3N2Mx laryngeal cancer

To PPI or not to PPI?

- Recent large studies showing *association* (but not causation) between PPI use and 1) dementia 2)kidney disease
- Already known that PPIs increase fracture risk, PNA and C diff risk, and are associated with nutritional deficiencies

To PPI or not to PPI?

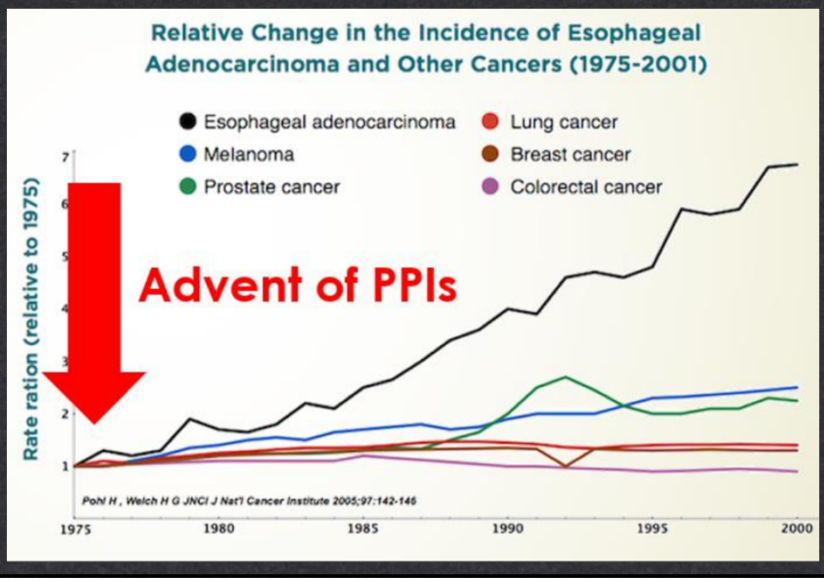
- Could be a good thing
- Bringing more attention to PPI overuse
- But some patients do benefit…

To PPI or not to PPI?

- Simple approach
  - Do they feel miserable when they wean off?
  - Do they know why they are taking it?
    - If no, stop the PPI

To PPI or not to PPI?

- What about Barrett's?



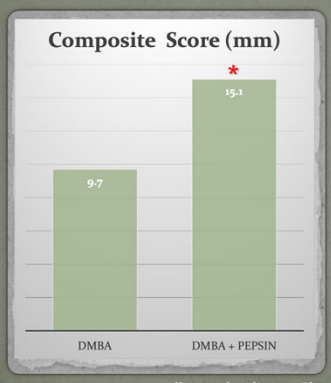
To PPI or not to PPI?

- Esophageal adenoCA
  - With a 600% rise in incidence since advent of PPIs, could they be masking symptoms that would otherwise lead to earlier detection??
    - 95% of patients are never selected for screening

To PPI or not to PPI?

- AND….
  - It turns out PEPSIN may be the oncogenic factor
    - Not the acid

Effect of Pepsin in an Animal Model of SCC

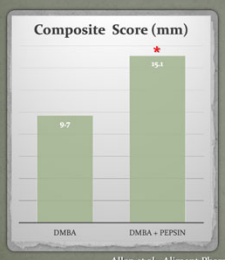


- Hamster buccal pouch model
- Application of pepsin 3 times/week for 14 weeks enhanced tumor growth ($p<0.0001$)

Allen et al., Aliment Pharmacol and Ther 2011

Source: Nikki Johnston, PhD

Effect of Pepsin in an Animal Model of SCC



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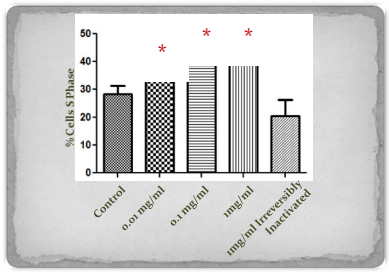
Allen et al., Aliment Pharma

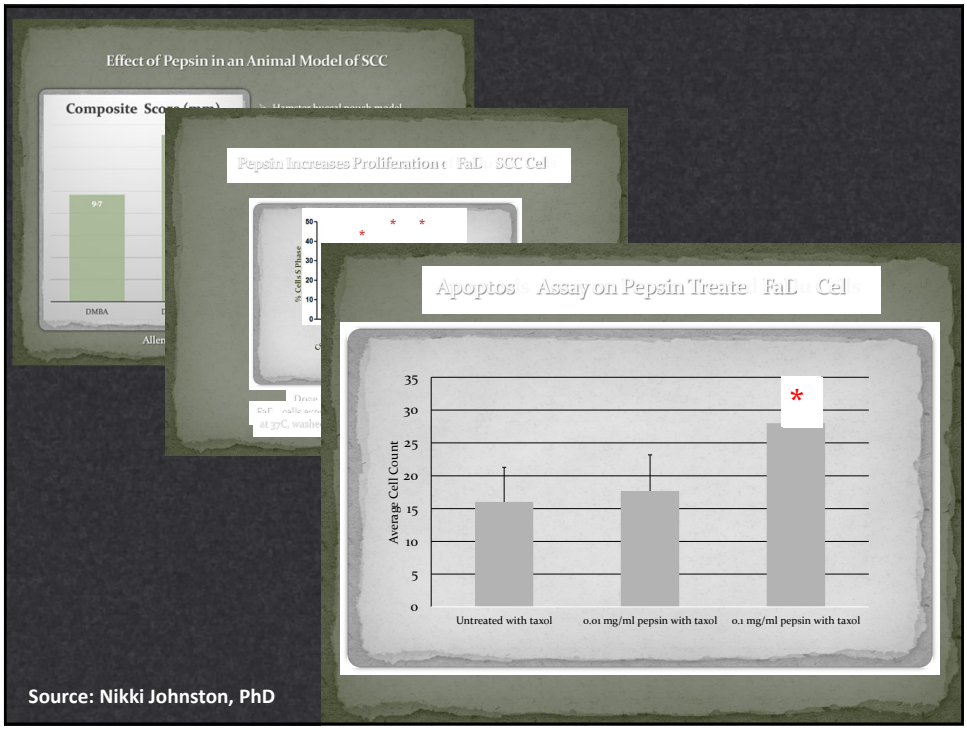
Pepsin Increases Proliferation o FaD SCC Cel



Dose Response Increase in % Cells S Phas

FaD cells exposed to pepsin at concentration indicated for 1 hr at 37C, washed and incubated in fresh media for 24 hrs at 37

Source: Nikki Johnston, PhD



Source: Nikki Johnston, PhD

Conclusions

- Pepsin detected in larynges of cancer pts but absent in pts without clinical signs reflux/inflammatory/neoplastic disea
- Pepsin induces a dose & tim dependent promotion of proliferation in both normal transformed epithelial cultur
- This induction of proliferation is associated with gene and microRNA expression chang that are consistent with promotion of neoplas
- Chronic pepsin exposure caused resistance to apoptosi
- *In viv* HBP study revealed active pepsin increases tumor volum
- Chronic pepsin, pH7, exposure increases cell colony forming abili

Source: Nikki Johnston, PhD

PPI use

- Hard question to answer
- Use PPIs when they help clinically
- Weaning trials frequently
- Consider non-acid reflux
- Remember sodium alginates!
  - Food thickener made of seaweed
  - Forms a raft that physically blocks reflux

Sodium alginates

Sodium alginates

- Take 1000mg after meals and before bed
- No active drug
- Raft remains intact until you eat again

- Could also recommend only the before-bed dose and after meals where they overeat or eat reflux-inducing foods

Common Laryngeal Disorders in Primary Care

Brandon Kim, MD
Assistant Professor-Clinical
Department of Otolaryngology
The Ohio State University Wexner Medical Center

Case

- Patient is a 21 yo male college runner with increasing shortness of breath during exercise.
  - Prior diagnosis of exercise-induced asthma but has minimal benefit with inhalers
  - History of anxiety
  - History of recent intubation after motor vehicle accident
  - Never smoker

Additional history

- High-yield questions:
  - Recent head, neck, chest surgery or trauma?
  - Prior tracheostomy or intubation history?
  - Timing of dyspnea?
  - Dysphonia or dysphagia?
  - Noisy breathing?
  - Triggers of stress, exercise, or odors?
  - History of sinusitis or GERD?
  - Smoker or significant smoking hx?

Physical Examination

- Any evidence of prior head and neck surgery or trauma?
- Biphasic stridor vs. inspiratory stridor vs. end-expiratory wheeze?

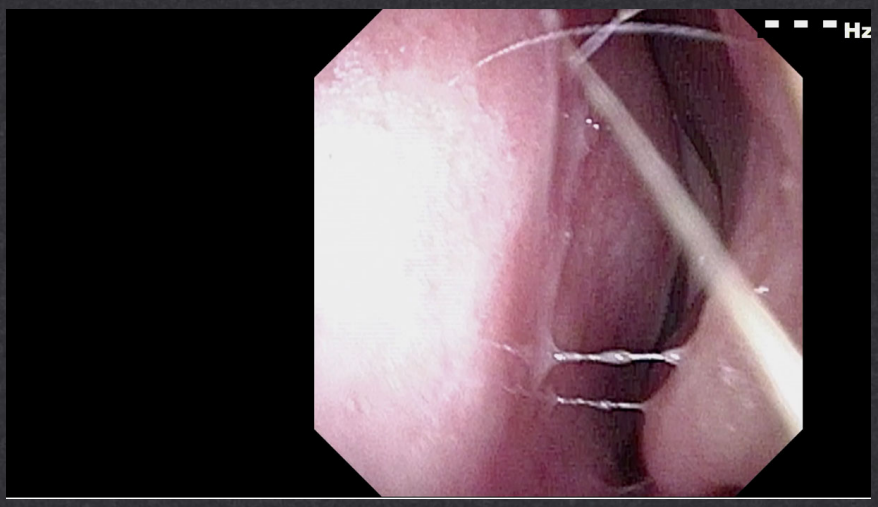
Testing

- Usually expect CXR.
- Consideration has often already been given for pulmonary, cardiac, or deconditioning etiology at the time of referral.
- Pulmonary function tests:
  - What diagnosis is supported with flattening of the inspiratory loop?
  - What diagnosis is supported with flattening of both the inspiratory and expiratory loop?

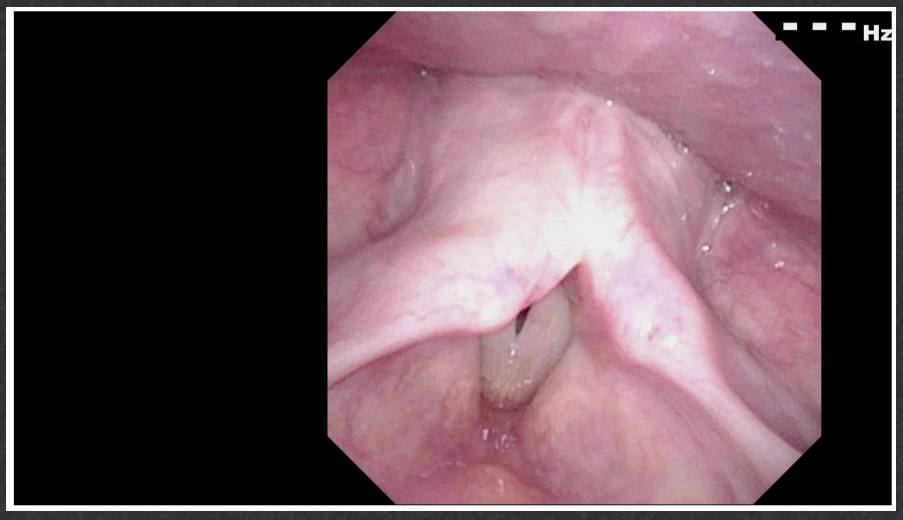
Laryngoscopy

- Evaluate for masses or lesions
- Vocal fold motion to rule out paralysis
- Observe vocal folds at rest, with exercise, vocal cord dysfunction protocol, and/or with odors (imperfect proxy)
- Evaluate subglottis

Flexible Laryngoscopy



Post-operative Laryngoscopy



Subglottic Stenosis

- Etiologies:
  - Intubation
  - Tracheostomy
  - Trauma
  - Prior surgery (head and neck, thyroid)
  - Idiopathic

Subglottic Stenosis

- Etiologies:
  - Intubation
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  - Prior surgery (head and neck, thyroid)
  - Idiopathic

ORIGINAL ARTICLE

Idiopathic Subglottic Stenosis

Stephen S. Park, MD; John M. Streitz, Jr, MD; Elie E. Rebeiz, MD; Stanley M. Shapshay, MD

Vocal Cord Dysfunction/ Paradoxical Vocal Fold Movement

Journal of Asthma and Allergy

Dovepress
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REVIEW

Differentiating vocal cord dysfunction from asthma

This article was published in the following Dove Press journal:
Journal of Asthma and Allergy
12 October 2017
Number of times this article has been viewed

Andrew Fretzayas[1,2]
Maria Moustaki[3]
Ioanna Loukou[3]
Konstantinos Douros[4]

Abstract: Vocal cord dysfunction (VCD)-associated symptoms are not rare in pediatric patients. Dyspnea, wheezing, stridor, chest pain or tightness and throat discomfort are the most commonly encountered symptoms. They may occur either at rest or more commonly during exercise in patients with VCD, as well as in asthmatic subjects. The phase of respiration (inspiration rather

Vocal Cord Dysfunction/ Paradoxical Vocal Fold Movement

Dunn *et al. Asthma Research and Practice* (2015) 1:9
DOI 10.1186/s40733-015-0009-z

ASTHMA RESEARCH AND PRACTICE

REVIEW Open Access

Vocal cord dysfunction: a review

Neha M. Dunn[1*], Rohit K. Katial[2] and Flavia C. L. Hoyte[2]

Case

- 78 yo M with history of repeated pneumonias over the past 3 years, becoming more frequent.
- Upon questioning, he endorses globus sensation and "mucous."
- Occasionally, "things come back up" and he coughs more after meals.

Case

- PMH: History of melanoma previously, history of GERD diagnosis
- PSH: Knee surgery
- Social: Denies tobacco, occasional wine

Additional history

- High-yield questions:
  - History of esophageal procedures or oropharyngeal trauma?
  - Globus or mucous sensation?
  - Food sticking?
  - Differential dysphagia to liquids vs. solids?
  - Choking or coughing?
  - Reflux or regurgitation?
  - Weight loss or pneumonia?

Additional history

- High-yield questions:
  - History of abdominal thrusts or loss of consciousness for choking?
  - Drooling? Food escaping into the nose?
  - Odynophagia (pain with swallowing)?
  - Avoiding foods or difficulty with certain consistencies?
  - Change in voice (especially wet quality)?
  - Behavior: Eating and talking?
  - Neurological signs/symptoms?

Physical Examination

- Neurological Examination to assess for focal weakness, gait abnormality, cogwheeling, or cranial nerve weakness.
- Oral examination:
  - Tongue weakness?
  - Incomplete dentition?
  - Poor-fitting dentures?
- Voice (wet? Weak?)
- Lungs

Testing or Referrals

- May consider modified barium swallow (MBS) or referral to laryngology for functional endoscopic evaluation of swallow (FEES) with speech language pathology for concern for oropharyngeal dysphagia.
- May consider esophagram or referral to gastroenterology for concern for esophageal dysphagia.

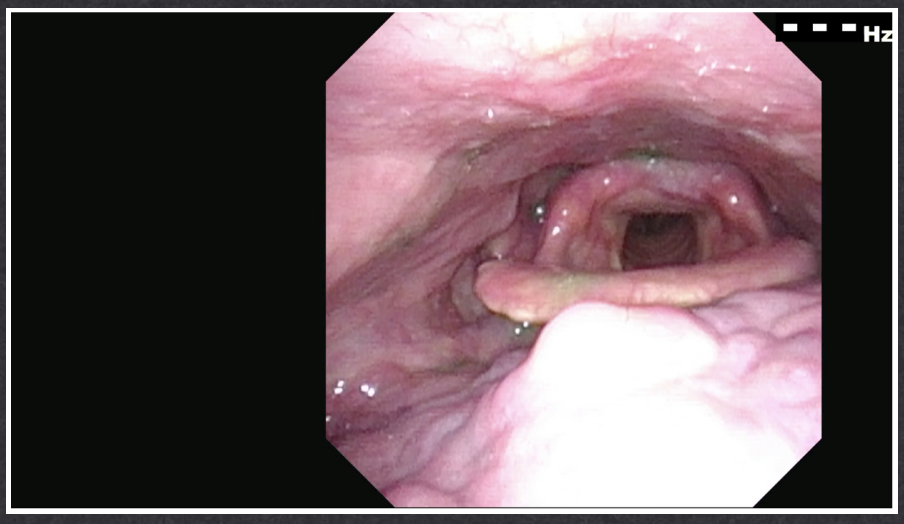
On Esophagrams and Dysphagia

- Able to assess anatomy (masses, strictures, Zenker's, Schatzki's ring, hiatal hernia).
- Able to assess motion (dysmotility, spasms, achalasia, may catch or miss reflux events).
- Unable to assess many mucosal abnormalities.
- Unable to allow for biopsy.

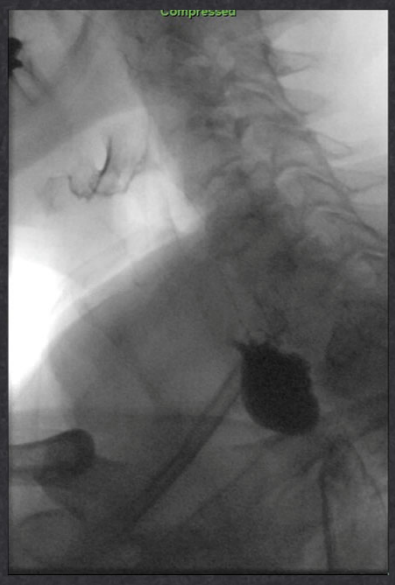
On EGD and dysphagia

- Does not examine causes of oropharyngeal dysphagia.
- Not a dynamic study examining motion of the patient's esophagus during swallow.
- Able to assess for mucosa (esophagitis, ulcer, lesions) and anatomy (strictures, Schatzki's ring, hiatal hernia).
- Able to biopsy (eosinophilic esophagitis)

Functional Endoscopic Evaluation of Swallow



Modified Barium Swallow



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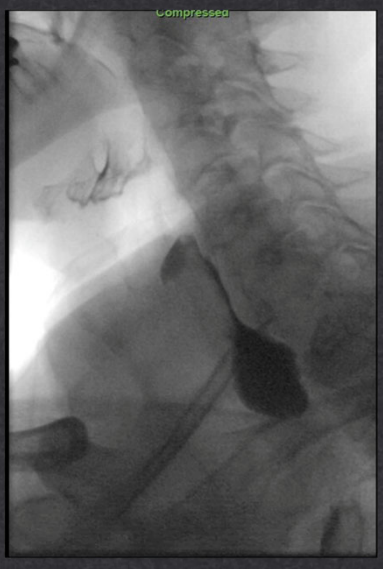
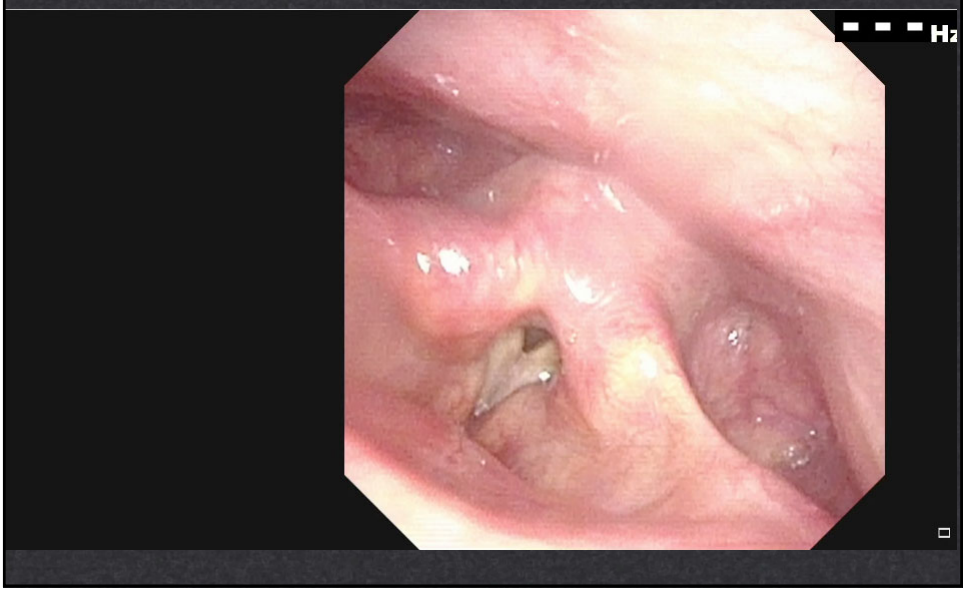


Post-operative Laryngoscopy



Dysphagia Prevalence

The Prevalence of Dysphagia in Primary Care Patients: A HamesNet Research Network Study

Thad Wilkins, MD, Ralph A. Gillies, PhD, Andria M. Thomas, PhD, and Peggy J. Wagner, PhD

Purpose: **A number of disorders cause dysphagia, which is the perception of an obstruction during swallowing. The purpose of this study was to determine the prevalence of dysphagia in primary care patients.**

Methods: **Adults 18 years old and older were the subjects of an anonymous survey that was collected in the clinic waiting room before patients were seen by a physician. Twelve family medicine offices in HamesNet, a research network in Georgia, participated.**

Results: **Of the 947 study participants, 214 (22.6%) reported dysphagia occurring several times per month or more frequently. Those reporting dysphagia were more likely to be women (80.8% women vs 19.2% men, $P = .002$) and older (mean age of 48.1 in patients with dysphagia vs mean age of 45.7 in patients without dysphagia, $P = .001$). Sixty-four percent of patients with dysphagia indicated that they were concerned about their symptoms, but 46.3% had not spoken with their doctor about their symptoms. Logistic regression analyses showed that increased frequency [odds ratio (OR) = 2.15, 95% CI 1.41–3.30], duration (OR = 1.91, CI 1.24–2.94), and concern (OR = 2.64, CI 1.36–5.12) of swallowing problems as well as increased problems eating out (OR = 1.72, CI 1.19–2.49) were associated with increased odds of having talked to a physician.**

Conclusions: **This is the first report of the prevalence of dysphagia in an unselected adult primary care population. Dysphagia occurs commonly in primary care patients but often is not discussed with a physician. (J Am Board Fam Med 2007;20:144–150.)**