

ADVANCED LARYNGOLOGY PART I – HEARING A VOICE PROBLEM

Presenter(s):

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Purpose: Many clinicians (otolaryngologists, speech therapists) take a history and then endoscopically examine the vocal cords. Without listening to the voice, or being able to describe types of hoarseness, many voice disorders are overlooked. In advanced laryngology, utilizing physics, music & listening skills, the examiner elicits both obvious and subtle voice problems accurately.

Outcome objective: Upon completion of this session, participants should be able to...

... listen to an impaired voice and predict what should be seen on endoscopy.

... understand how physics, music & listening play a significant role in the diagnosis of hoarseness or other vocal impairment.

Goal: In advanced laryngology, consider a different diagnostic approach. Consider a three-part examination consisting of

- 1) a history
- 2) listening to and recording vocal capabilities
- 3) then endoscopically examining the larynx.

There presently exists a disconnect between the science of sound production and the general clinician's or otolaryngologist's approach to diagnosing voice disorders. The heavy emphasis on looking for a mass or describing the color of the larynx misses many diagnoses where the chief complaint is impaired sound production (hoarseness). The goal of this course is to orient the advanced laryngologist/phoniatrist/voice therapist/voice teacher to concepts of sound production, thinking about physics and music.

Listening before looking.

Vocal cords have three basic functions with respect to sound production. They can...

- 1) alter pitch
- 2) alter volume
- 3) alter clarity of sound.

The phonologic portion of the advanced laryngology exam includes a battery of tests to elicit combinations of these functions.

Premises supporting the need for a battery of tests include...

- 1) The larynx is a highly redundant system.
- 2) An individual naturally and automatically attempts to compensate for any dysphonia using this redundancy.
- 3) Exploring the entire range of the voice will unmask compensation and expose the vocal impairment.

Loud and soft voice production at both high and low pitches are the foundation for this battery of tests. Clinically eliciting the comfortable speaking pitch, maximum phonation time, then highest and lowest pitch (first at loud volumes and then at soft volumes) will define where the voice is impaired. Noting the quality of sound impairment, type of vibration and the pitch where any impairment occurs during these vocal tasks will orient the examiner toward certain types of disease.

Listening for and identifying a voice impairment often leads to a pared-down differential diagnosis even before looking with an endoscope, thereby predicting what an examiner will see on endoscopy. The pitch and volume eliciting maximal impairment during this phonologic portion of the exam then suggests the pitch and volume at which to record the stroboscopic examination.

Case studies: Examples. Each type of voice disorder will have a vocal signature on phonologic testing. Some examples include...

- 1) Weakness involving the recurrent laryngeal nerve will be exacerbated at low pitch and high-volume sound production and relatively clear at high pitch and low volume.
- 2) Vocal cord swellings such as nodules, polyps and hemorrhage will most significantly impair vocal cord vibration at high pitch and low-volume, typically at a very specific pitch.
- 3) Stiffness inducing disorders such as fungal growth will selectively impair high pitch, soft sound production.

Each type of vocal cord vibratory impairment generates a specific pattern on vocal capabilities testing. At the end of the session, presenters will play impaired voices and the audience will be able to accurately predict what they will see on endoscopy before viewing the videos.