



COLLEGE OF GENERAL
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Hoarseness of voice

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Hoarseness of voice

Hoarseness of voice or dysphonia is a common presentation in general practice. It refers to abnormal quality of voice. Voice may be abnormal in its pitch, loudness, breathiness, flexibility or sustainability. Most likely causes are infection, allergy, exposure to irritants and drugs. Neurological causes can present with short history such as stroke.

Causes of hoarseness

Local causes

- Voice overuse - common.
- Irritants – smoke, vomitus
- Reflux laryngitis
- Infections – laryngitis, laryngeal abscess, acute epiglottitis, diphtheria, croup.
- Benign lesions of the vocal cords - singer's nodes, polyps, fibromas, cysts and papillomas.
- Laryngeal cancer – Squamous cell carcinoma, lymphoma
- Neck or chest malignancies - lung cancer, lymphoma, thyroid cancer, eosophagal and hypopharyngeal malignancies.
- Inflammation/oedema - anaphylaxis, physical trauma, airway burns, angio-oedema,
- Vocal cord weakness - laryngeal nerve palsy (complete or partial) or cricoarytenoid joint disease.
- Other neurological conditions - Stroke, Parkinson's disease, Motor neurone disease. Myasthenia gravis, essential laryngeal tremor, spasmodic dysphonia
- Trauma – post intubation laryngitis
- Congenital – laryngomalacia, laryngeal web, laryngeal papilloma

Systemic causes

- Endocrine – diabetes, hypothyroidism, acromegaly.
- Rheumatoid arthritis
- Granulomatous disease - eg, sarcoidosis, tuberculosis, syphilis, Wegener's granulomatosis.
- Autoimmune disorders

- Medications - Angiotensin-converting enzyme inhibitors(cough),Antihistamines, diuretics, anticholinergics(dryness),Antipsychotics (Laryngeal dystonia), Bisphosphonates(Chemical laryngitis) Danazol, testosterone(effect of sex hormones), Inhaled steroids(irritation/ infection)

- Functional dysphonia – associated with fatigue, stress

Box 1

History

- Onset and progression
- Associated respiratory symptoms
- Voice overuse/shouting/screaming
- Associated vomiting or acid reflux

Red flags [Guidelines for the Diagnosis and Management of Hoarseness, Amber Huntzinger]¹

- Presence of hemoptysis, dysphagia, odynophagia, otalgia, or airway compromise
- Family history of cancer
- Neck mass – thyroid enlargement, lymph nodes etc. may indicate malignancy
- Tobacco or alcohol use – risk factors for malignancies
- Neurologic symptoms – palatal palsy, features of vocal cord palsy (weak cough, breathy voice, aspiration, extensional dyspnea), tremors (parkinson's), weakness
- Possible aspiration of a foreign body – in acute onset hoarseness
- Symptoms do not resolve after surgery (intubation or neck surgery) – intubation and neck can cause recurrent laryngeal nerve damage.
- Symptoms in a neonate
- Symptoms in a person with an immunocompromising condition
- Symptoms occur after trauma - arytenoid subluxation
- Unintentional weight loss
- Worsening symptoms – risk of airway obstruction

Dangerous causes of hoarseness are anaphylaxis, malignancies, and neurological impairment. Given below is a list of red flags published in a journal¹ which is useful in evaluating a patient in general practice. If present these patients need early referral to a specialist.

In the GP setting most of the time indirect laryngoscopy is not possible. But the following examination findings (Box 2) can give a clue to the cause and help decide on whom to be referred.

Box 2

Focused examination in general practice setting,

- Examine the nose, nasal airway, oral cavity, tongue, pharynx
- Look for features of airway obstruction – Dyspnea, stridor, wheezing, cyanosis. These indicate an emergency
- Features of anaphylaxis
- Facial swelling
- Laryngeal function - assess voice, cough and swallowing.
- Neck examination - scars, lymph nodes, thyroid gland. Localized tenderness indicates infection or abscess.
- Associated symptoms - e.g. fever, hypothyroidism, tremor, weight loss.
- Chest or neurological examination if indicated – Lung tumors can damage recurrent laryngeal nerve. Minor strokes can present with sudden hoarseness

Box 3

Specialist examination

- Indirect laryngoscopy using head light and laryngeal mirror - assess gross vocal-fold movement and to detect laryngeal pathology
- Flexible fibrotic rhino laryngoscopy – provides more detailed view of visualizing the nasal cavity, sinuses, pharynx, and the larynx. A scope is entered through nose and directed to larynx under topical anesthesia. Movements of vocal cords during speech, singing and swallowing can be assessed.
- Video stroboscopy – provides a video documentation of structure and function of larynx under topical anesthesia. . This is a special flexible or rigid telescope that records the vibration of the vocal cords during sound production. The waves in the vocal folds which are not visualized by naked eye is seen on screen as in slow motion.

Investigations

Symptoms persisting for more than 3 weeks needs investigation to exclude malignancy. National Institute for Health and Care Excellence (NICE) guidance on suspected cancer recommends

urgent chest X ray specially for smokers, alcoholics and adults of 50 years and above. If lung fields show features of lung cancer patients should refer to a relevant specialist. If CXR is negative, patient needs referral by a laryngeal specialist for further evaluation.

Management

Resent onset hoarseness due to infective causes, milder allergies and reflux laryngitis can be safely managed in general practice.(discussed under subheadings) The patient advice that could be helpful in addition to medication is given in Box 3.

Box 4

Vocal hygiene (Oxford handbook of clinical specialties)

- Do not whisper and do not shout
- Plenty of fluids but avoid/ reduce tea, coffee, cola and alcohol
- Do not eat late night
- Avoid irritants – spicy food, smoke, dust, cigarette smoke
- Have a good sleep/rest
- Keep bed room moist by having a damp towel
- Avoid medicated lozenges- menthol cause dryness
- Steam inhalation if symptomatic

Laryngitis

One of the most common causes of hoarseness. Usually viral in etiology. Painful phonation and swallowing favours bacterial infection. Vocal cord (VC) examination may show only a little change disproportionate to the severe symptoms. VC movements will be normal. Viral infection can cause aphonia. No proven treatment for viral laryngitis. Role of steroids are controversial. Antibiotics are useful if bacterial infection is suspected.

Chronic laryngitis

Associated with smoking, alcohol excess, laryngopharyngeal reflux and voice abuse. Examination may show swelling and roughening of VC with multiple dilated blood vessels.

Voice overuse

Excessive loudness and prolonged use of voice can give rise to VC lesions and VC hemorrhage. Teachers in particular are at risk. Voice therapy is the mainstay of treatment.

Reflux Pharyngolaryngitis

Pharyngolaryngitis is unlikely to be a continuation of Gastro-oesophageal reflux(GORD). Patients with GORD have symptoms while supine and patients with laryngopharyngeal reflux have symptoms while upright. Normal gastro-oesophageal endoscopy does not rule out laryngopharyngeal reflux. Laryngopharyngeal is best assessed by laryngoscopy and flexible trans-nasal oesophagoscopy, in seated position with local anesthesia.

Most recommend life style modification and a course of proton pump inhibitors if GORD symptoms are present.

Vocal Nodules

These occur as a result of chronic voice abuse. These benign bilateral nodules occurs at junction of anterior one third and posterior two thirds, the maximal point of vibration. Nodules hinder the ability of the vocal cords to approximate. Adherence to voice hygiene and voice therapy are the mainstay of treatment. A proper assessment of the VCs is a must before referring for voice therapy. Steroids has no place. Acid suppression may help.

Vocal cysts

These cysts containing mucus are usually unilateral and occur due to voice trauma. These do not respond to voice therapy. Surgery is the treatment of choice.

Vocal cord paralysis

Vocal cords are innervated by the superior and the recurrent branches of the vagus nerve. Recurrent nerve damage is commoner and can result from endotracheal intubation, neck surgery and less commonly from cardiac, pulmonary and oesophageal surgery. It could also get damaged by post viral mononeuritis and with benign and malignant tumours in its pathway.

Presentation is with a breathy voice. Damage could be partial, complete, unilateral or bilateral. According to the “Semon’s law” in partial palsy only the abductors are affected and VCs remain in midline. In complete palsy both abductors and adductors are affected and therefore the VCs lie in a paramedian position. Management depends on etiology. Mostly conservative with speech therapy. Augmentation of vocal cord with autologous or synthetic fillers are newer modalities of treatment.

Laryngeal cancer

This should be suspected in smokers with persistent dysphonia. Odynophagia, referred earache, neck lump are other features. If suspected urgent referral is indicated.

Functional dysphonia

No structural and functional anomaly is found on evaluation. Symptoms are diverse and include voice fatigue, laryngeal discomfort or even aphonia. Voice therapy and a psychiatric opinion may be indicated.

References

1. Oxford handbook of Clinical Specialities. 9th edition
2. <http://www.australiandoctor.com.au/cmsspages/getfile.aspx?guid=37a4e825-6b85-4e25-8c05-3ba8ad21e0f9>
3. <http://patient.info/doctor/hoarseness-pro>
4. Guidelines for the Diagnosis and Management of Hoarseness. Amber Huntzinger. *Am Fam Physician*. 2010 May 15;81(10):1292-1296.
(<http://www.aafp.org/afp/2010/0515/p1292.html>)