

## Diagnosis Details of Reinke's Edema

### - How to investigate a case of Hoarseness ?

The first line of investigation is **flexible laryngoscopy**; however, diagnostic imaging comes into play if a cause is not identified or if further evaluation is warranted

- In general, any patient with unexplained hoarseness persisting for more than 3 weeks should be referred to an ear, nose, and throat surgeon for investigation
- Clinical examination including **laryngoscopy** is required to identify the small minority of patients with hoarseness who require imaging
- Depending on the findings at laryngoscopy, imaging is aimed at (a) characterising and staging laryngeal or pharyngeal tumours or (b) identifying a cause for vocal cord paralysis
- Computed tomography or magnetic resonance can be used for either indication, but MRI is preferable if pathology is expected in the brain stem, skull base, or suprahyoid neck whereas CT is better for imaging pathology in the infrahyoid neck and mediastinum
- In an adult smoker with a recurrent laryngeal nerve palsy a chest radiograph can be used to decide on the most appropriate form of CT scan to be performed

### Summary of investigations for a case of Hoarseness

- First line —> refer to ENT to do Flexible Laryngoscopy—> if normal or inconclusive or more evaluation is needed —> do imaging (CT or MRI)
- If any associated suspicion neck swelling present —> imaging + Fine needle aspiration (FNA) ..... (Imaging is not recommended prior to visualisation of the larynx if the remaining examination has been unremarkable)



**Fig. 12.1** Algorithm for diagnosis and management of hoarseness

# Flexible Laryngoscopy

**Definition:** Flexible laryngoscopy is viewing of the pharynx and larynx using a flexible laryngoscope (also called a nasopharyngolaryngoscope). Flexible laryngoscopy is generally done to evaluate symptoms of disorders of the pharynx and larynx.

## **Indications for Flexible Laryngoscopy:**

Laryngoscopy may be indicated for the evaluation of patients with the following:

- Chronic cough
- Chronic throat pain
- Dysphagia
- Dysphonia
- Foreign body in the throat
- Hoarseness or change in voice
- Odynophagia
- Sensation of a lump in the throat
- Symptoms of aspiration
- Sometimes hemoptysis

In particular, patients at high risk of head and neck cancer (eg, heavy smokers or alcohol users) may benefit from laryngoscopy, especially if they have had hoarseness, sore throat, or ear pain for > 2 weeks.

Laryngoscopy can also be useful to evaluate the airway prior to [oro-tracheal intubation](#).

Urgent laryngoscopy may be indicated in patients with angioedema, stridor, epistaxis, and/or craniofacial trauma.

Flexible laryngoscopy can be tried for patients who do not tolerate direct laryngoscopy.

## **contraindications:**

### **Absolute contraindications**

- Suspected epiglottitis

### **Relative contraindications**

- Stridor
- Angioedema
- Active epistaxis or an uncontrolled bleeding disorder

In patients with stridor or angioedema, stimulation of the laryngopharynx may further compromise the airway. If laryngoscopy is essential, it should be done in the controlled setting of an operating room with a person skilled at difficult airway management (including surgical techniques) present.

## **Complications of Flexible Laryngoscopy**

- Injury to the mucosa, which may cause bleeding
- Laryngospasm and airway compromise

The procedure may cause gagging, coughing, and/or vomiting. Occasionally, patients have a vasovagal reaction.

## **Equipment:**

- Flexible laryngoscope (nasopharyngolaryngoscope) with light source
- Gloves
- Protective eyewear
- Mask
- Nasal speculum
- Lubricant

- Wall suction connected to a Frazier-tip catheter
- Topical vasoconstrictor/anesthetic (eg, 4% cocaine, 0.05% oxymetazoline plus either 1% tetracaine or 4% lidocaine)
- Cotton swabs or pledgets for nonspray topical decongestants and/or anesthetics

## **Step-by-Step Description of Flexible Laryngoscopy**

### **Preparation**

- Check that the laryngoscope, including the light source and suction, are working properly.
- Adjust eyepiece focus (use letters such as on drug or equipment packaging).
- Check both nares and use the one that appears more widely patent.
- Hold the nares open with a nasal speculum. Insert the speculum with the handle parallel to the floor and open the speculum vertically; stabilize your hand by placing one or two fingers against the patient's nose.
- Apply the topical vasoconstrictor/anesthetic.

### **Procedure**

Do the following about 5 to 15 minutes after the application of the vasoconstrictor/anesthetic:

- Lubricate the laryngoscope tip.
- Insert the laryngoscope tip into the nose and advance it slowly adjacent to the inferior turbinate (either above or below) parallel to the floor of the nose.
- Advance it into the nasopharynx, inspecting the eustachian tube opening in the lateral nasopharynx and the adenoid tissue on the posterior wall.
- Tell the patient to breathe through the nose (which makes the soft palate drop). Use the thumb control on the laryngoscope to flex the tip

down to go past the palate, and then straighten to avoid curling forward into the uvula.

- Inspect the base of the tongue, valleculae, epiglottis, piriform sinuses, arytenoids, false and true vocal cords, and the larynx below the vocal cords.
- Do not pass the laryngoscope through the vocal cords because contact can cause laryngospasm.
- Fully inspect the vocal cords. Instruct the patient to say "eeee," which will contract the vocal cords and allow more thorough inspection.
- Avoid touching the mucosa or epiglottis because this may provoke a gag reflex.
- Gently withdraw the laryngoscope.

### **Aftercare for flexible Laryngoscopy**

- Instruct patient to avoid eating and drinking for at least 20 minutes to prevent aspiration due to residual laryngopharyngeal anesthesia.

### **Warnings and Common Errors for Flexible Laryngoscopy**

- Inserting the scope too forcefully, causing bleeding and/or discomfort
- Losing situational awareness of the direction of the scope tip
- Using too little anesthesia or vasoconstrictor

### **Tips and Tricks for Flexible Laryngoscopy**

- Give the patient a tissue prior to the procedure because tearing may occur.
- Remind the patient to breathe during the procedure because some patients reflexively hold their breath.
- Before inserting the scope, familiarize yourself with the tip controls.

- Ask the patient not to swallow during the procedure unless directed to help clear the scope

## Reinke's Edema Diagnosis

- Flexible Endoscopy of the larynx: bilateral polypoidal sausage shaped swellings occupying the whole length of the vocal cords denoting Reinke's oedema

## Smoking as a Risk Factor for Both Reinke's Edema and Voice Box Cancer

**Not Present Together:** Reinke's Edema and Cancer of the Vocal Fold  
Individuals with voice-related problems visit a physician mainly because they are concerned about whether they have laryngeal cancer, since laryngeal cancer is life threatening, although rare. Fortunately, despite smoking as a major risk factor to both conditions, Reinke's edema and laryngeal cancer are rarely seen at the same time in individuals. The reason for this is not presently known.

**Present Together:** Reinke's Edema and Pre-cancer of the Vocal Fold – Vocal Fold Atypia

Although laryngeal cancer and Reinke's edema are not usually seen together, pre-cancerous lesions on the vocal fold (vocal fold atypia) are more frequently observed with Reinke's edema. Since these growths can turn into cancer over time, careful voice box examination needs to be done. (For more information, see Vocal Fold Atypia and Early Cancer.)



### Some helpful videos for laryngoscopy procedure:

- [https://youtu.be/D8ZYXB6x\\_XU](https://youtu.be/D8ZYXB6x_XU)
- <https://youtu.be/4DGiRAnc3dg>

### Resources

- <https://www.bmj.com/content/337/bmj.a1726>
- <https://www.racgp.org.au/afp/2016/june/hoarseness-an-approach-for-the-general-practitioner>
- <https://www.msmanuals.com/professional/ear,-nose,-and-throat-disorders/how-to-do-throat-procedures/how-to-do-flexible-laryngoscopy>
- <https://voicefoundation.org/health-science/voice-disorders/voice-disorders/reinkes-edema/diagnosis-reinkes-edema/>
-