

# ENT SAQ

By: 430 ENT team

Larynx 1&2 + Airway obstruction1&2

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❖ Note: please refer to the original lecture given by the doctor

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Ear, Nose  
& Throat

*Station 1:*

- This is the picture for the a child throat who underwent tonsillectomy 2 days ago, who complains of sore throat but afebrile

**A- What do you think this finding represents**

- **tonsillar fossa slough**

**B- What is the best treatment?**

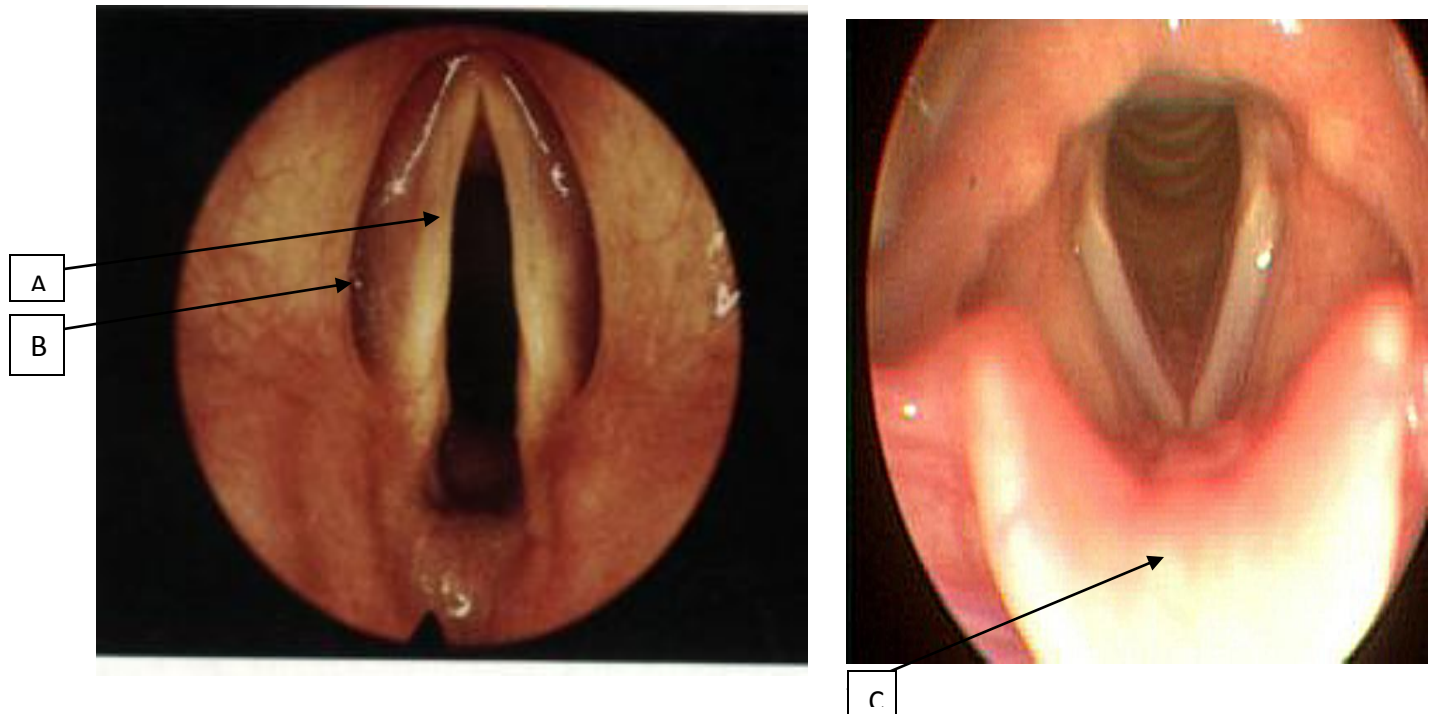
- **Pain medication(regular analgesia), possible antibiotics**
- **Instruct the caregiver about the food that increase the healing process**

*Station 2:*



1. What is your Dx?  
-Scarlet Fever (strawberry tongue)
2. What is the causative organism?  
-Group (A) Streptococcus
3. What is the treatment?  
-Penicillin

## Station 3:



**A-What is the name of the structures marked by the letters (A B C):**

**A- True vocal cord**

**B- vestibular fold (ventricular fold, superior or false vocal cord)**

**C- epiglottis**

**B- What is the name of the structure in between the two structures indicated by the letters A & B?**

- The ventricle of the larynx (also called the laryngeal sinus, laryngeal ventricle or Morgagni's sinus)

**C- Name the nerve innervating intrinsic m, of larynx??**

- Recurrent laryngeal nerve(except for the cricothyroid ms)

## Station 4:



Right  
interior  
vocal cord  
carcinom

- This is the larynx of 50 years old man who presented with hoarseness of voice for 1 year; he is heavy smoker for the last 30 years.

**A- What is the most likely diagnosis?**

- **Vocal cord cancer.**

**B- Give two possible therapeutic options for this abnormality**

1. **Traditional surgery – This seeks to completely remove the cancerous growth and also remove a margin of normal tissue from around the tumor.**
2. **Radiation therapy**
3. **Photoangiolytic surgery – This emerging treatment uses the KTP laser to remove the tumor layer by layer**

**C-What is the most common type?**

- **Squamous Cell Carcinoma**

**D- Mention 2 risk factors.**

- **Smoking- Alcohol- Radiation**



## Station 5:



**A- What is the name of this tube?**

- **Tracheostomy tube**

**B- Give four possible complications for it?**

- **Immediate:**

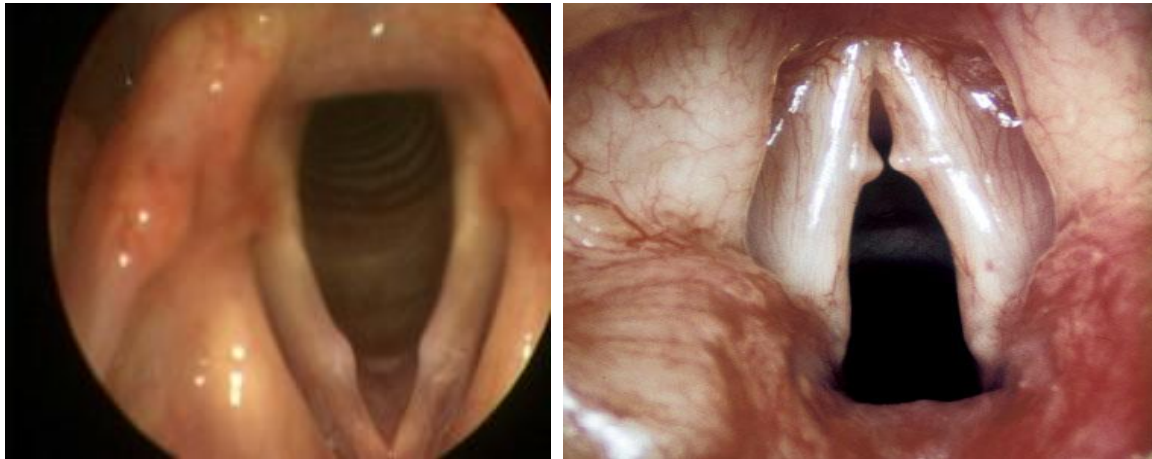
Hemorrhage, Hypoxia, Trauma to recurrent laryngeal nerve, Damage to esophagus, Pneumothorax, Infection, Subcutaneous emphysema

- **Early:**

Tube obstruction or displacement, Aspiration, Bleeding from tracheostomy site, Infection.

- **Late:**

Airway obstruction with aspiration, Tracheomalacia, Aspiration and pneumonia, Fistula formation

**Station 6:**

**This is the larynx of 6 years old child who presented with voice change for the last 4 months, or pt who he used to be a voice over user or (teacher,singer).**

**A- What is the diagnosis?**

- **Vocal cord nodules**

**B- What is the recommended treatment?**

- **Voice rest, speech therapy and surgical excision (if large nonresponsive)**

### Station 7:



- This is the tongue of 60 year old male who is known to be alcoholic and smoker

#### A- Give four possible diagnoses for the lesion

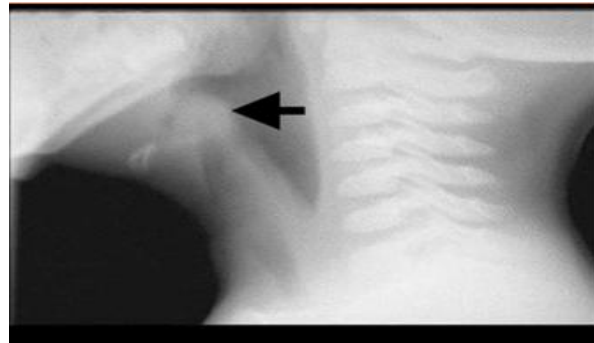
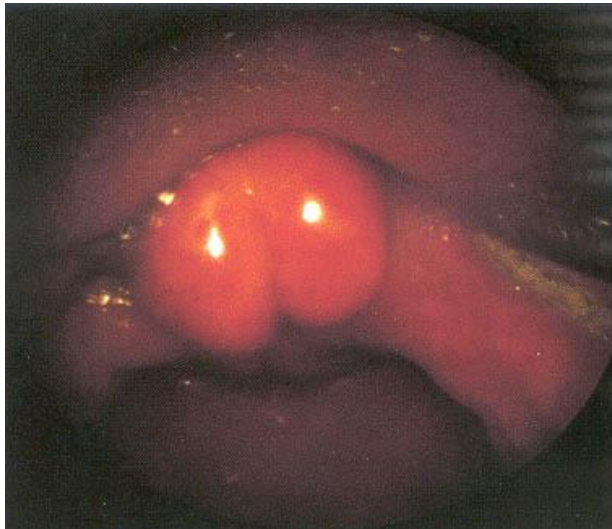
- Cancer of the tongue, traumatic ulcer, aphthous, leukoplakia, mouth pemphigus.

#### B- What is the most important diagnostic tool?

- Biopsy for histopathology.



## Station 8:



- This is the larynx of 4 year old child who presented with acute fever, drooling of saliva, stridor, and difficulty in breathing.

A- What is the diagnosis? What is the organism?

- Acute epiglottitis , *Haemophilus influenza*

B- What is the most important initial step?

- Do not examine the child in ER (May Lead to death) **Intubation** in OR then IV abx

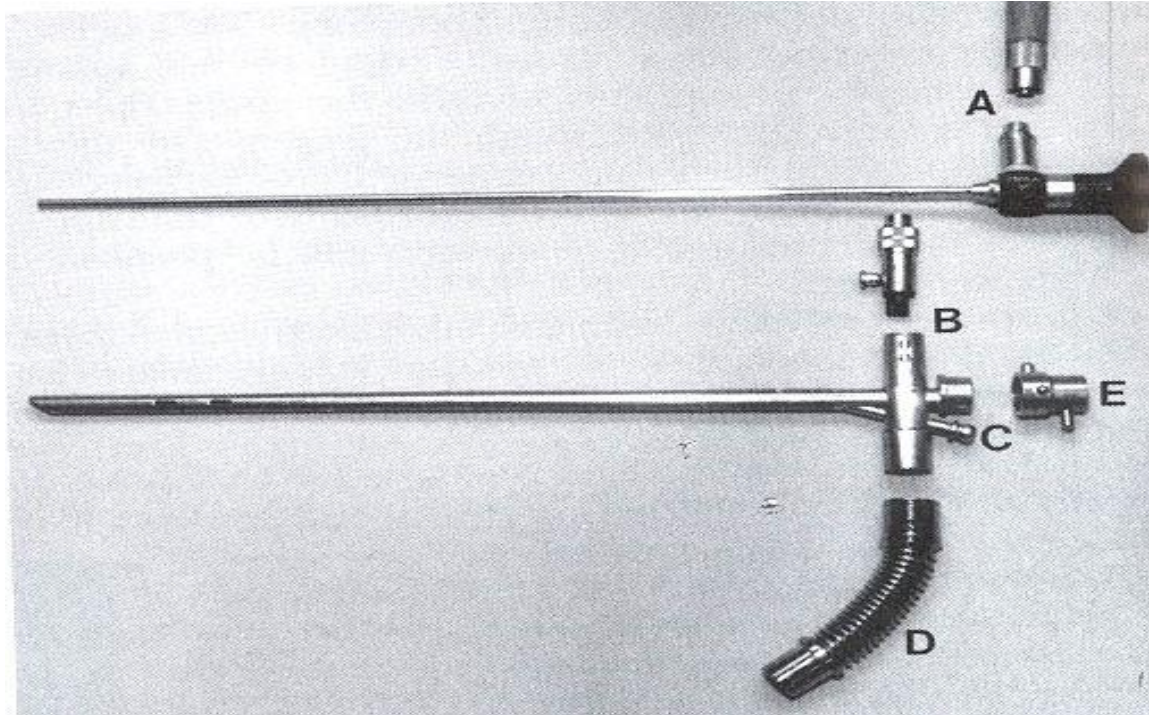
C-the structure in the arrow:

- Epiglottis

D-what is the x ray sign?

- Thumb print sign

### Station 9:



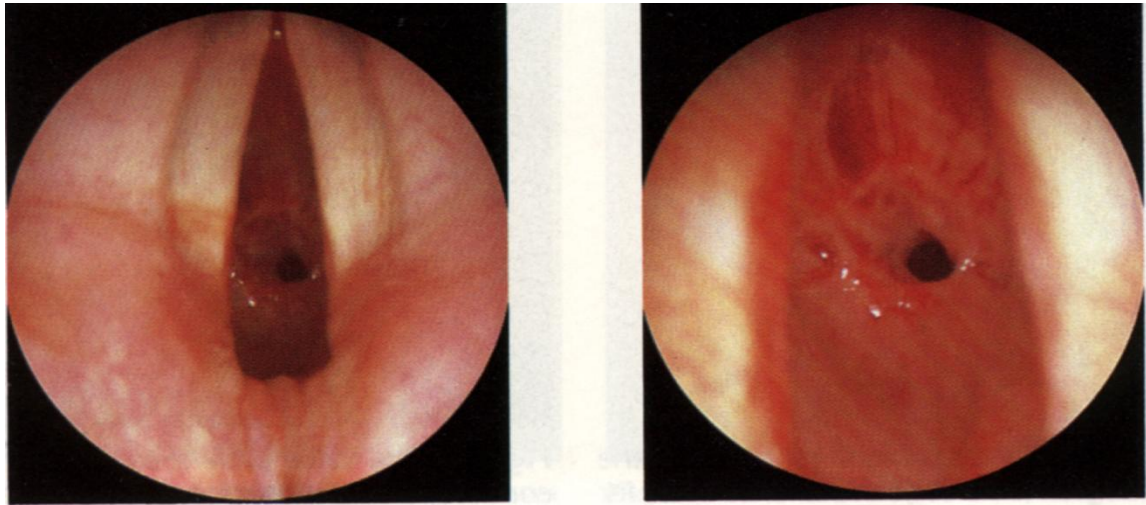
**A-what is the name of the instrument marked by the arrow?**

**Bronchoscope**

**B – Give two indications for the use of this instrument**

**diagnostic, therapeutic e.g. (foreign body extraction)**

## Station 10:



➤ These two pictures are showing the larynx.

**A- What is your diagnosis?**

- Subglottic stenosis

**B- What is the commonest cause for this abnormality?**

- Endotracheal intubation

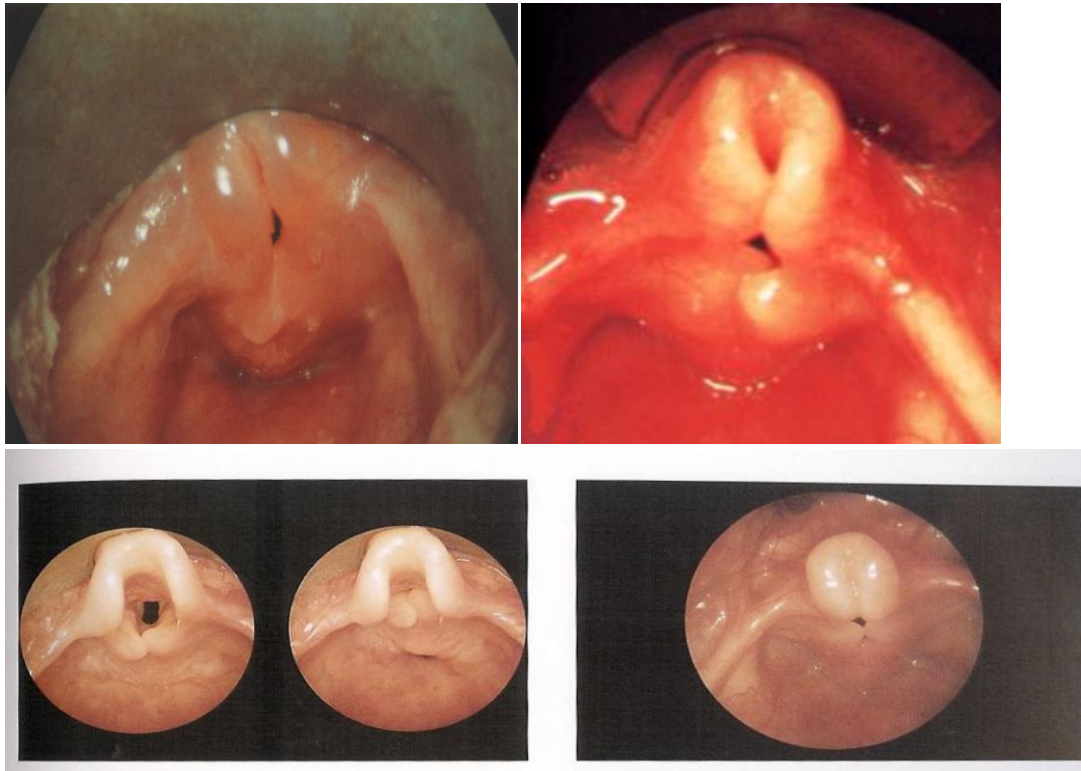
**C- What is the treatment?**

- Grade 1, 2: endoscopic procedure (co2 or laser)
- Grade 3, 4: open: (interior corticoid split or laryngeotrachealreconstruction {LTR}).

**D-what is the nerve supply the area?**

- Recurrent laryngeal nerve

## Station 11:



## Inspiratory stridor without cyanosis

## A- Diagnosis?

- **Laryngomalacia** the **MOST** common cause of stridor in children

## B- Treatment?

1. Observation (mostly)
2. Epiglottoplasty: **when sever** Causing growth retardation
3. Tracheostomy: **just to relief** Cyanosis

### Station 12:

- 60 years old smoker, presented with cough, haemoptysis and hoarseness. He was diagnosed with left recurrent laryngeal nerve palsy

**What is the most probable cause?**

**Laryngeal neoplasm**

**Name a cause of bilateral nerve paralysis?**

**Surgical trauma (iatrogenic)**



### Station 13:



#### A. Identify:

- **Flexible fibroptic endoscope**

#### B. Mention four cavities you can visualize:

- **Nose**
- **Nasopharynx**
- **Oropharynx,**
- **Hypopharynx,**

### Station 14:



➤ 1 year old child:

**A-what is the diagnosis?**

- Laryngeal papillomatosis

**B- Treatment?**

- Laser excision, microdebrider (Shaver)

**C- Most common cause?**

- HPV type 6 & 11

### Station 15:



#### A-What is the most bacterial pathogen?

- Group AB-hemolytic streptococcus.

#### B-Mention two absolute indications for tonsillectomy?

1. If recurrent: 6-7 attacks per year, 4 attacks per year for 2 years, or if 3 attacks per year for 3 years.
2. snoring, mouth breathing, causing obstruction (hypertrophied tonsils)
3. asymmetrical tonsillar enlargement suspecting malignancy (Smoker or not)

### Station 16:



#### A-What is the abnormality?

- **Unilateral tonsillar enlargement.**

#### B-mention one investigation to confirm diagnosis?

- **Excisional biopsy (excise and take to histopathology)**

### Station 17:



**This patient developed hoarseness (stridor) after thyroid surgery:**

**A-what is the nerve involved?**

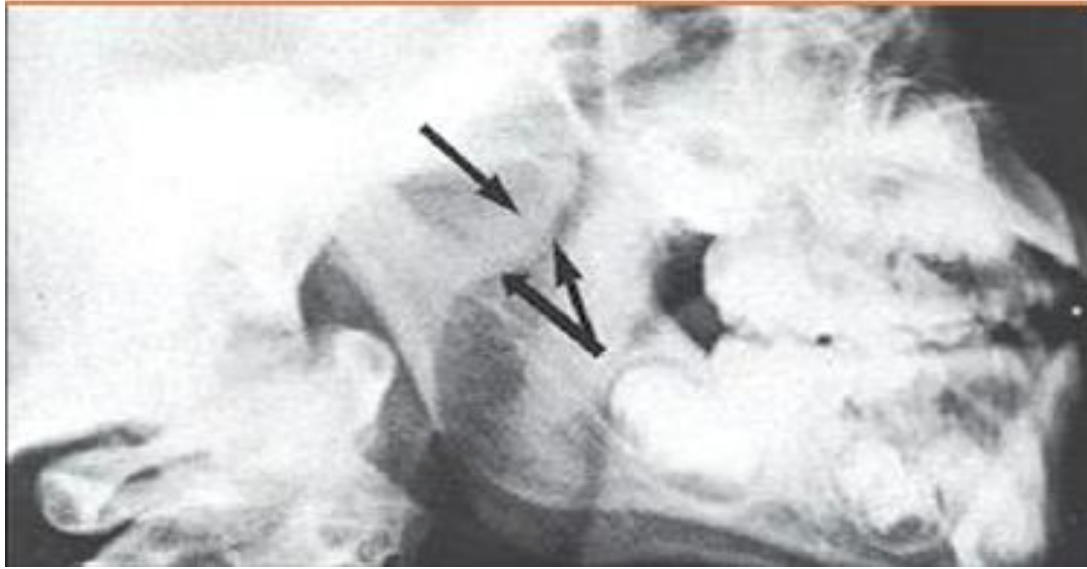
- **Recurrent laryngeal nerve(usually it is the left because of the long course)**

**B-what is the diagnosis?**

- **Recurrent laryngeal nerve injury lead to vocal cord paralysis**
- **(we can't say it is unilateral or bilateral from this picture)**



### Station 18:



**A-What is the radiological study and the view?**

- **Lateral X-ray**

**B-what is the abnormality?**

- **Soft Tissue swelling in the nasopharynx (adenoid hypertrophy)**

Pictures without scenario:

(1)

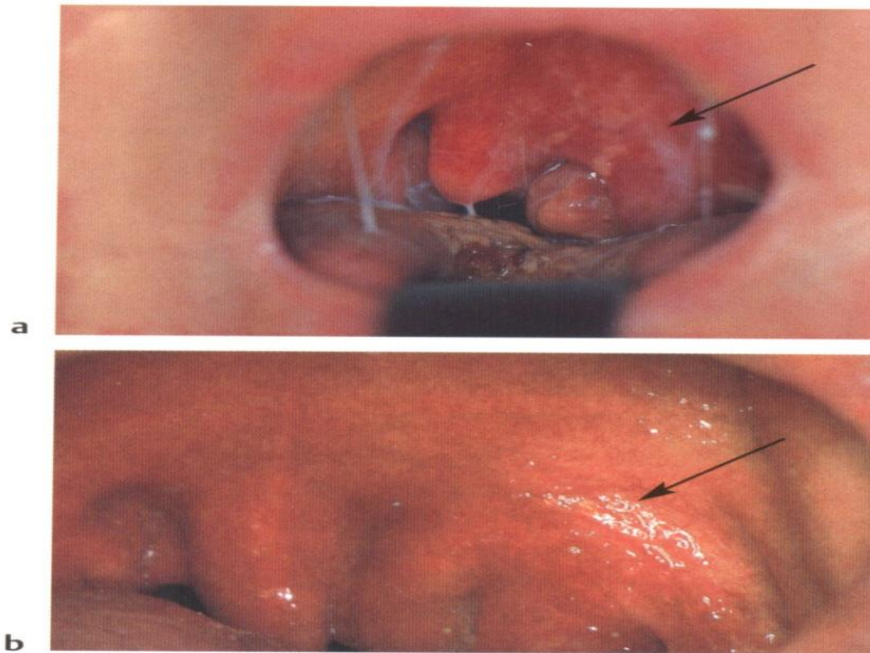


Fig. 4.53a, b Quinsy.

(2)

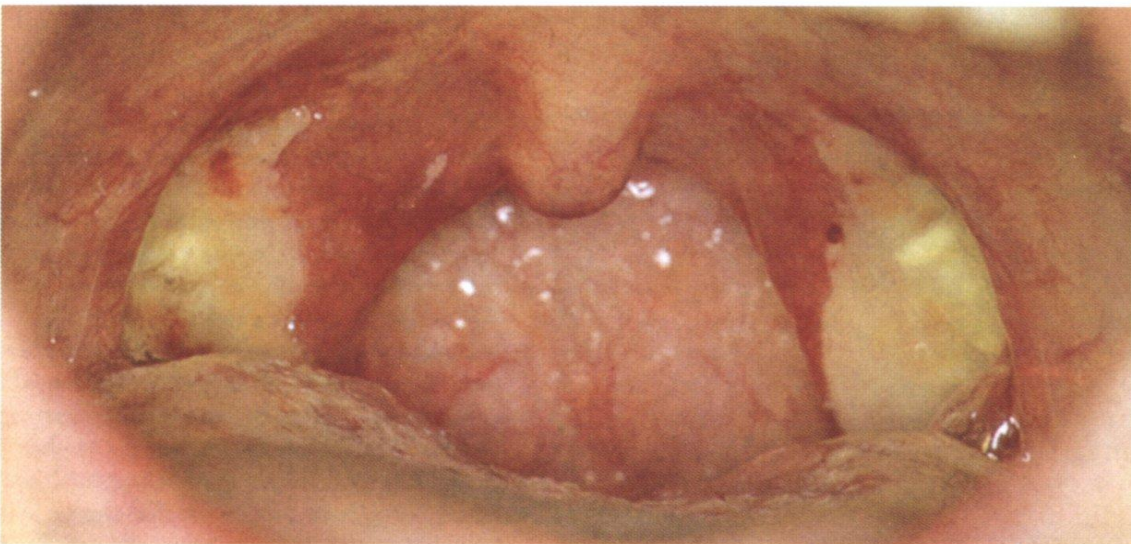


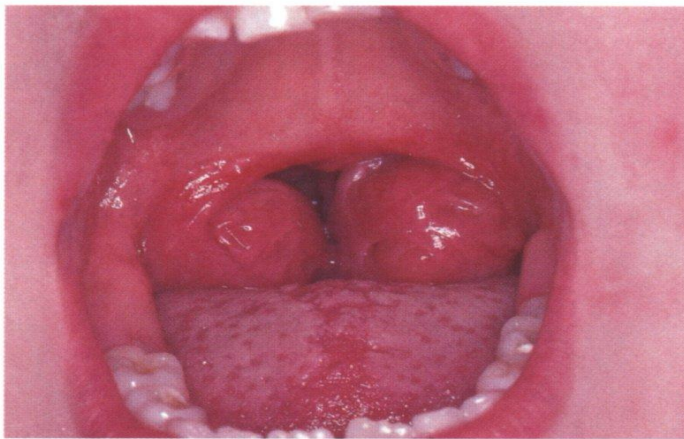
Fig. 4.62 The tonsillar fossae following tonsillectomy. These are covered with a white/yellow membrane for about 10 days until the fossae are epithelialized.

(3)

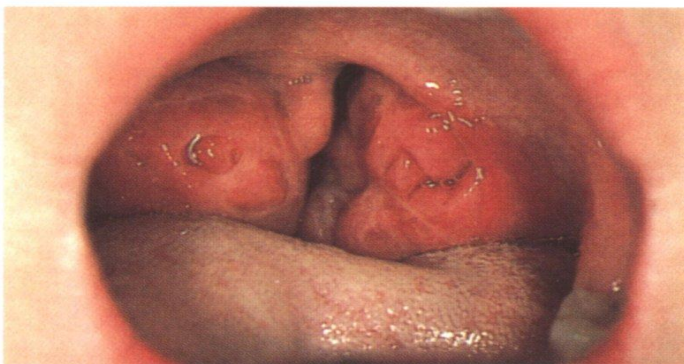


**Fig. 4.63 Tonsils after removal to demonstrate the lingual pole (arrow).** The pole must be included at tonsillectomy. A tonsil remnant may be left inadvertently at this site, giving rise to further infection, but tonsils do not “regrow.” Adenoid tissue is, however, not possible to enucleate and remove in toto; it may recur, particularly when removed before age 4.

(4)



a



b

**Fig. 4.42a, b Tonsils meeting in the mid-line.** It is unusual for tonsils to meet in the mid-line or to overlap. Lymphoid tissue of this bulk, particularly during an acute tonsillitis, may cause respiratory obstruction and severe dysphagia. There is an increased awareness of the severity of upper respiratory tract obstruction from the bulk of tonsillar and adenoid lymphoid tissue.

In children, particularly at times of superimposed tonsillitis, the interference with breathing becomes alarming, and obstructive sleep apnea syndrome is now well-recognized as an important indication for surgery to remove the tonsils and adenoids. Cor pulmonale is seen in children with marked upper respiratory tract obstruction.



(5)

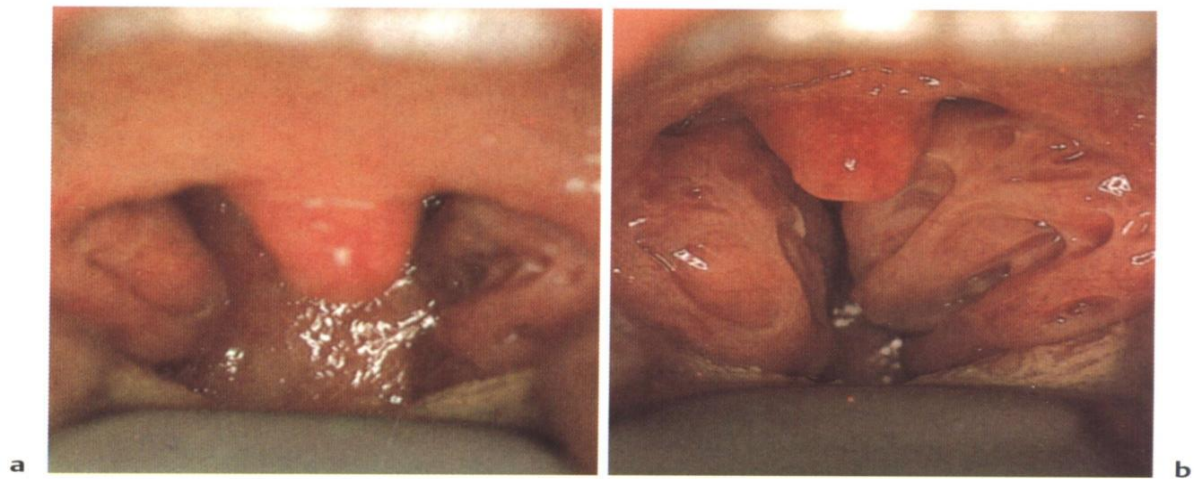


Fig. 4.41a, b **Tonsil size affected by tongue depressor.** The tongue depressor also alters the apparent size of the tonsils. If the tongue is firmly depressed, the patient gags and the tonsils meet in the mid-line (b).

(6)

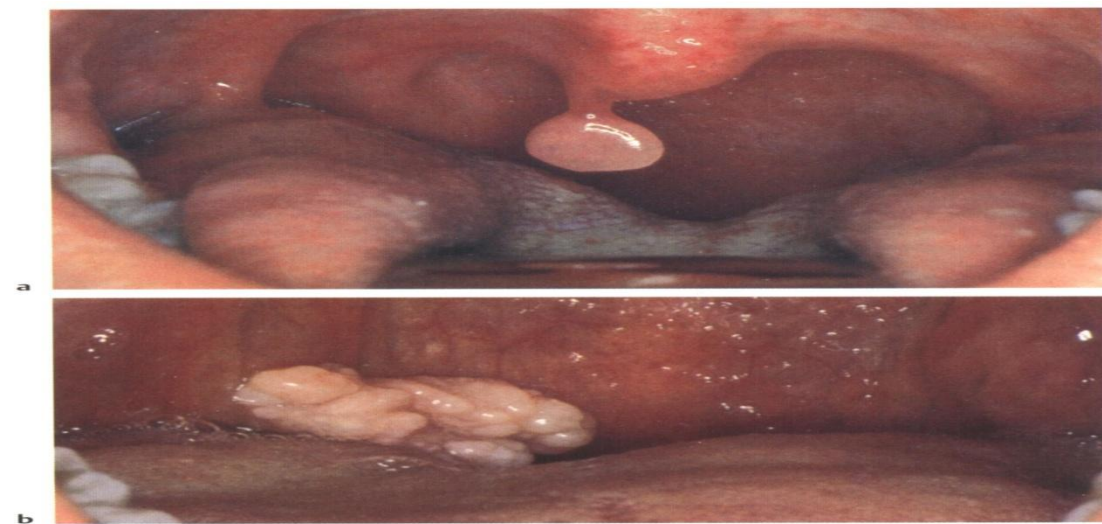


Fig. 4.39 **Papillomas.** These may occur on the uvula (a), fauces, and tonsil. The patient often notices these papillomas when looking at the throat, or they are found at medical examination. Symptoms are uncommon. They are usually pedunculated and are easily and painlessly removable in outpatients. They should be sent for histology to exclude a squamous carcinoma. If ignored, a papilloma may cause symptoms on account of size. This large papilloma (b) arises from the base of the right tonsil.

(7)

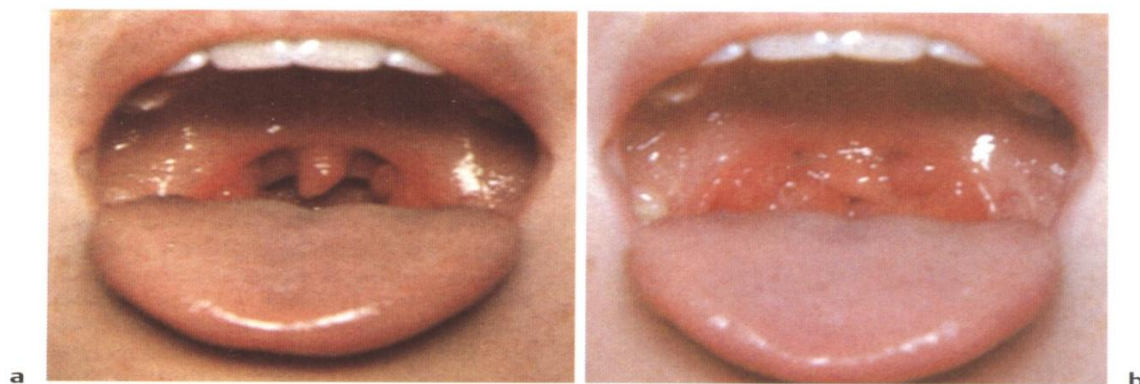


Fig. 4.40 **Tonsil size.** There is no recognized “normal” size for a tonsil. It is, therefore, arguable as to whether tonsils can be described as “enlarged.” The apparent size of the tonsil can be altered considerably when the tongue is protruded forcibly. This child, whose oropharynx looks normal when the tongue is slightly protruded (a), can make the tonsils meet in the mid-line with maximum protrusion of the tongue (b).

(8)

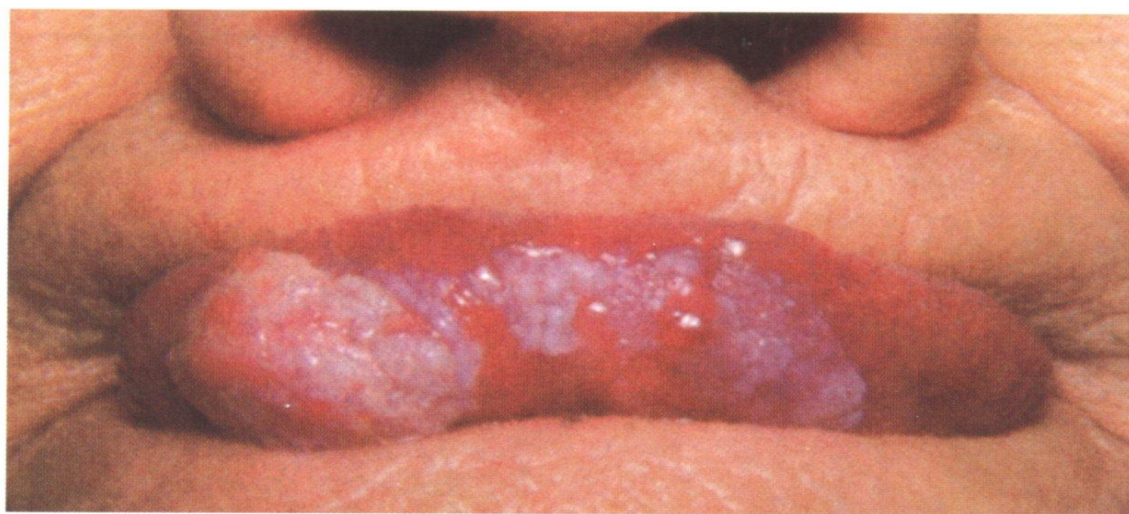


Fig. 4.34 **Leukoplakia.** This is precarcinomatous on the tongue. It may be secondary to dental or dietary irritation. Leukoplakia is also characteristic of tertiary syphilis, and the tongue is a site where the spirochaete predisposes to carcinoma. Leukoplakia, particularly with no apparent underlying traumatic cause, should be biopsied to exclude carcinoma.



(9)

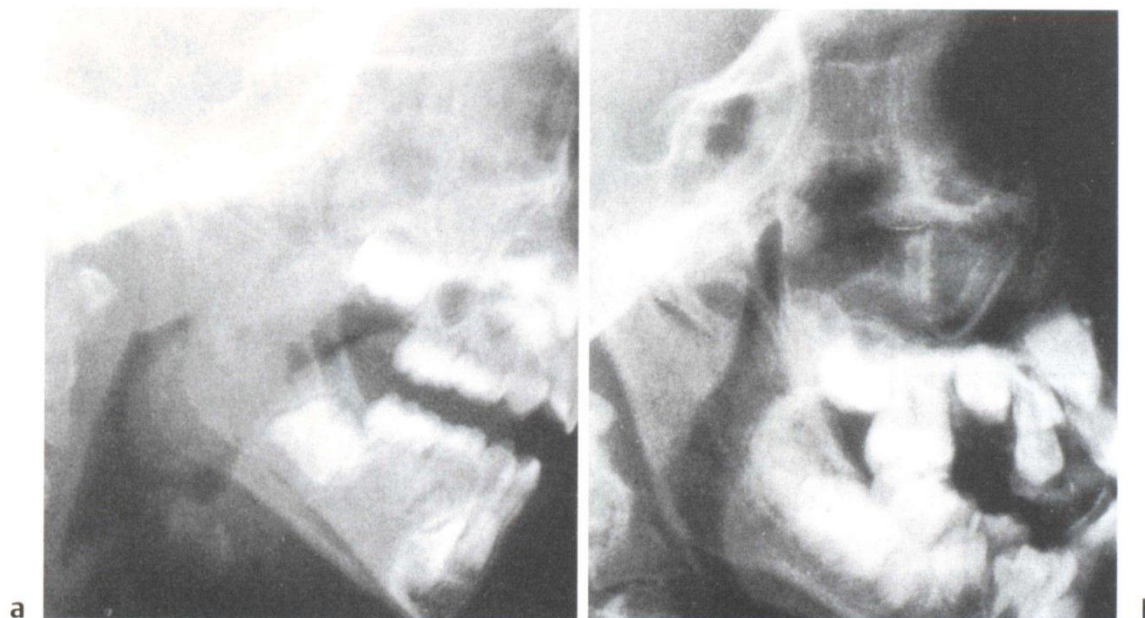


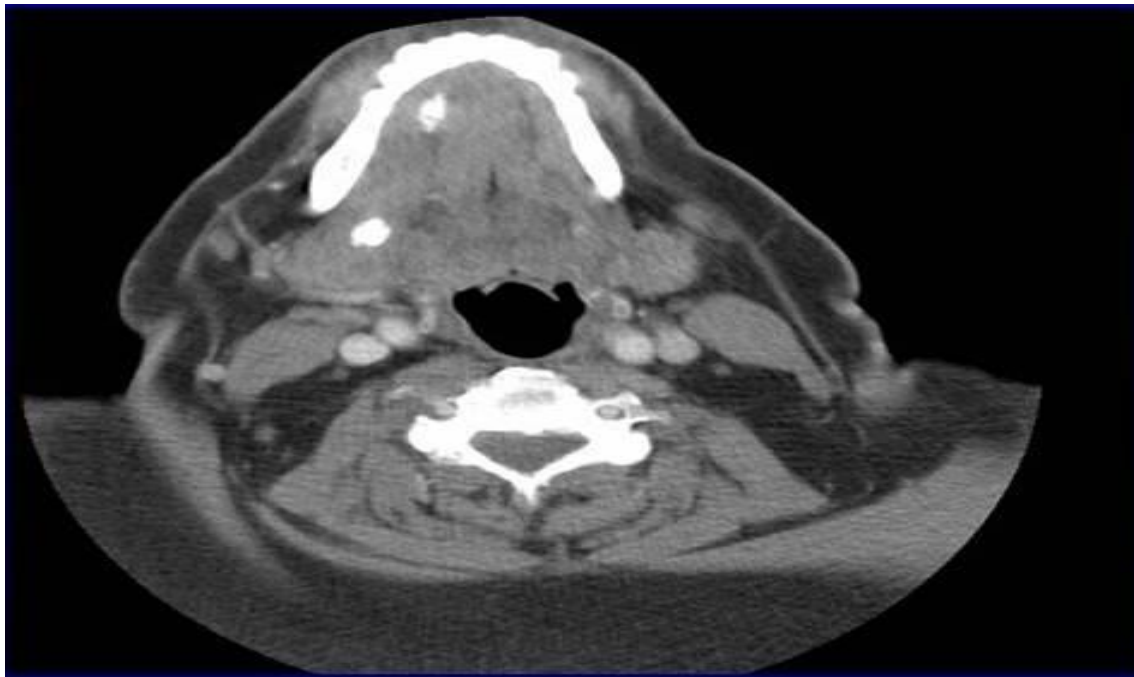
Fig. 3.16 **Accurate lateral radiographs are necessary.** A wrongly angled radiograph (a) is not infrequently erroneously reported as showing “large adenoids.” It is not easy to maintain a child in the correct position; patience and skill are required by the radiographer. When checking the lateral radiograph for adenoids, therefore, it is essential to be sure that the lateral picture is true (b) before assessing the bulk of the adenoid lymphoid tissue.

(10)



- Quinsy, nerve cause refer earache glossopharyngeal

(11)



### Station 19:

**L**



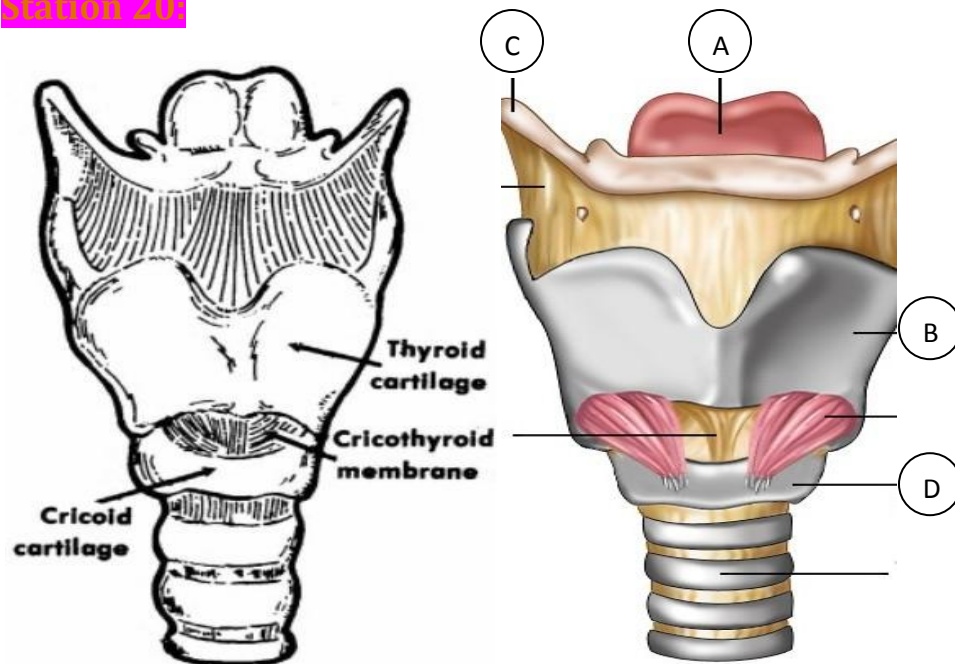
#### A-What is the instrument?

- **Stroboscopy**

#### B-What does it show?

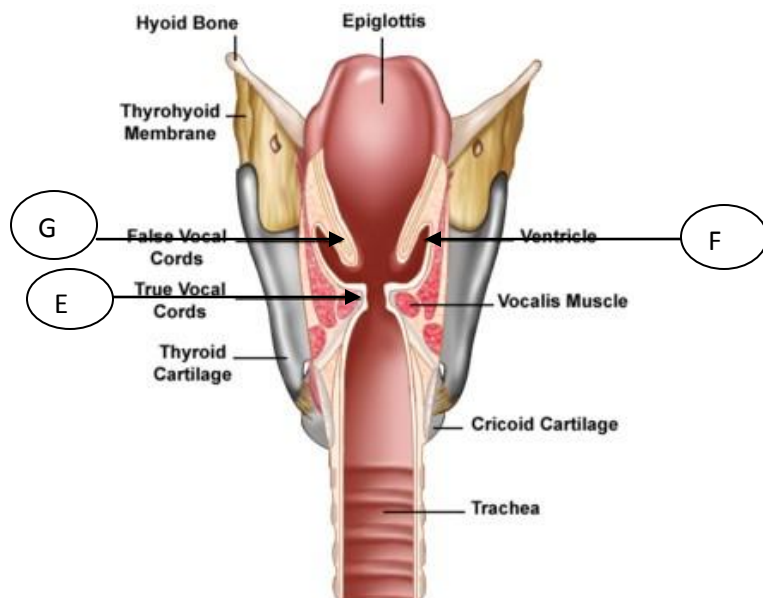
- **Vocal cord**

## Station 20:

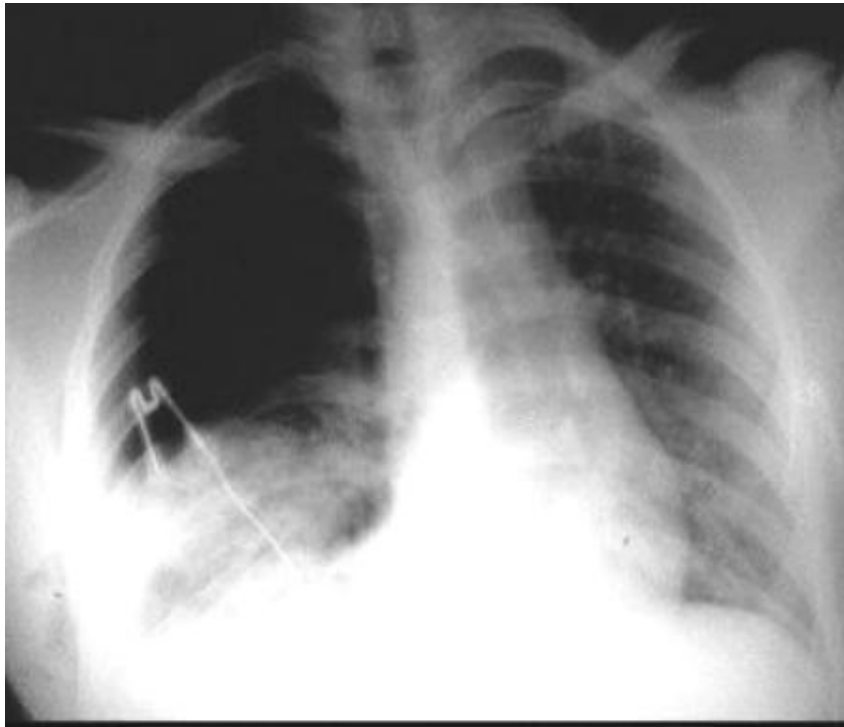


## Identify:

- A. Epiglottis
- B. Thyroid cartilage
- C. Hyoid bone
- D. Cricoids cartilage
- E. True Vocal cord
- F. Ventricle
- G. False vocal cord



**Station 21:**



**This is an x-ray obtained 1 hour after tracheostomy, despite the well inserted tube he's still unable to breathe.**

**A. What is the most likely complication?**

- **Pneumothorax.**

**B. What would be the late complication if it was at a higher level?**

- **Subglottic stenosis**



## Station 22:



## ➤ What are the indications of this procedure?

1. Obstruction of the upper airway, e.g. foreign body, trauma, infection, laryngeal tumor, facial fractures
2. Impaired respiratory function, e.g. head trauma leading to unconsciousness, bulbar poliomyelitis
3. To assist weaning from ventilatory support in patients on intensive care
4. To help clear secretions in the upper airway in recurrent infections for a good lavage

## ➤ What are the possible complications?

## • Immediate:

Hemorrhage, Hypoxia, Trauma to recurrent laryngeal nerve, Damage to esophagus, Pneumothorax, Infection, Subcutaneous emphysema

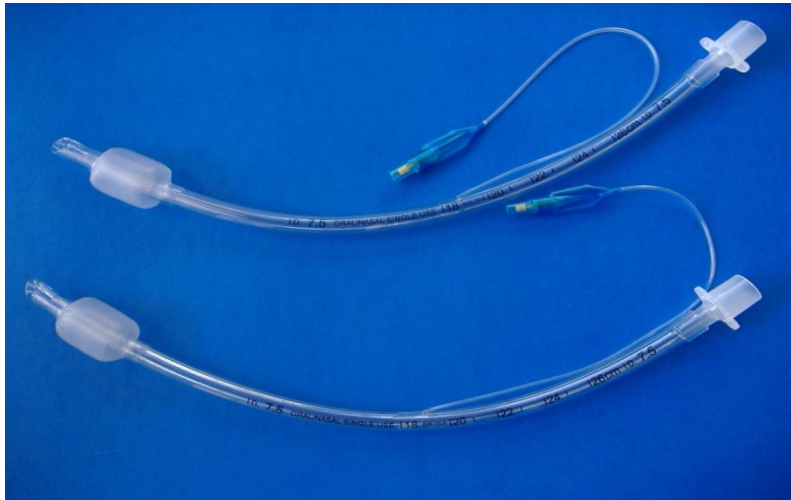
## • Early:

Tube obstruction or displacement, Aspiration, Bleeding from tracheostomy site, Infection.

## • Late:

Airway obstruction with aspiration, Tracheomalacia, Aspiration and pneumonia, Fistula formation

### Station 23:



#### A. Identify?

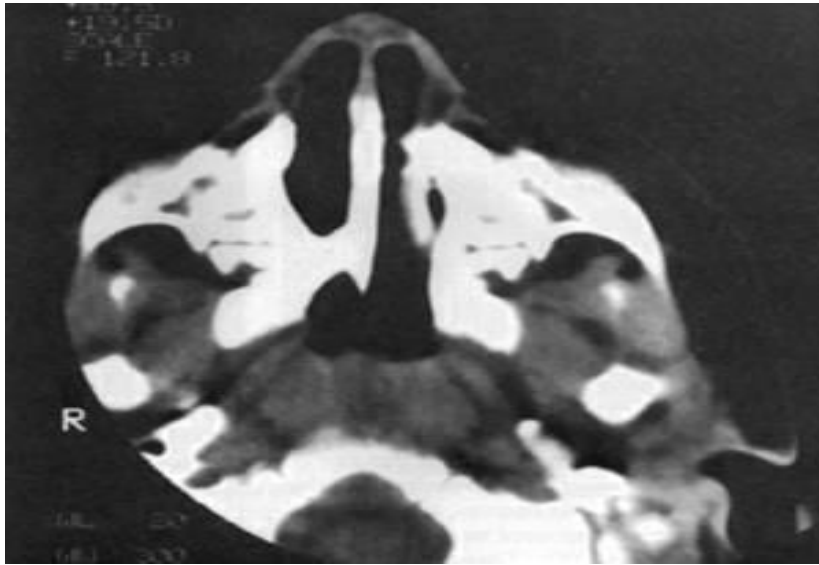
- Endotracheal intubation

#### B. Complication?

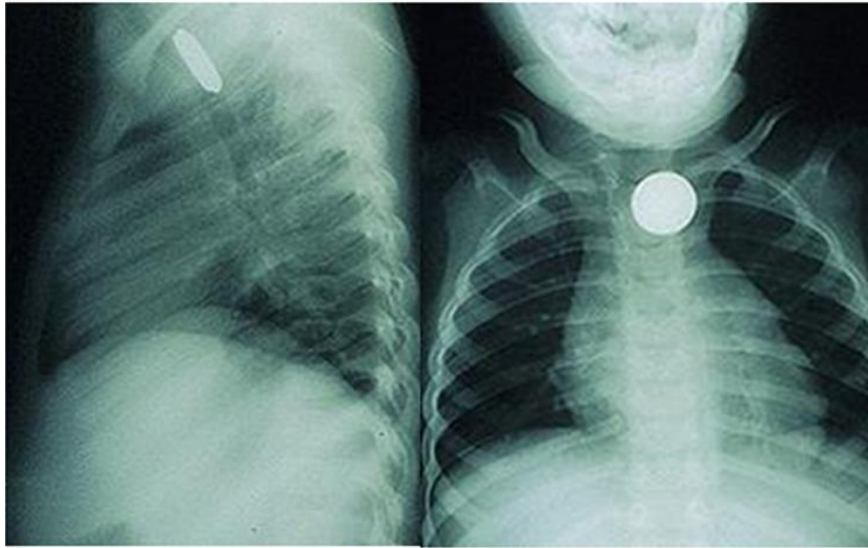
- Intubation granuloma

**\*During endotracheal tube placement, damage can also occur to the teeth, the soft tissues in the back of the throat, as well as the vocal cords.**

### Station 24:



- A 12 year-old boy came with a history of unilateral nasal obstruction since birth
1. What is the diagnosis?
    - Right unilateral choanal atresia
  2. What is the type and view of the image?
    - Axial CT

**Station 25:**

➤ **Child came after few hours of voice change**

**A-Why we do anterior and lateral film?**

- **To know the exact site of the foreign body**

**B-What is the complication of the surgical procedure?**

**1-** mildly irritates the lining of the airways, resulting in some swelling and inflammation, as well as hoarseness caused from abrading the vocal cords. If this abrasion is more serious, it can lead to respiratory difficulty or bleeding of the lining of the airways.

**2-** Small risk of disordered heart rhythm (arrhythmia), heart attacks, low blood oxygen (hypoxemia), and pneumothorax

**3-** There is also a risk of chipped teeth.

**4-** Infection



Pictures without cases:

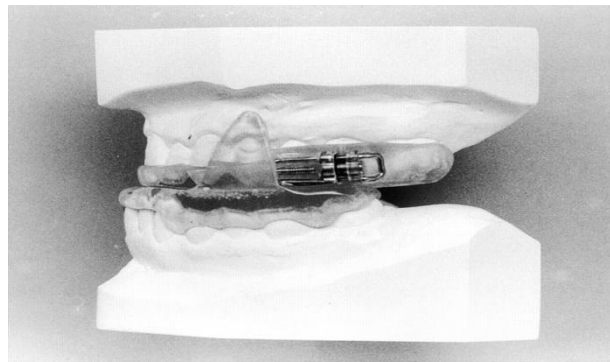
(1)



**LUDWIG'S ANGINA**

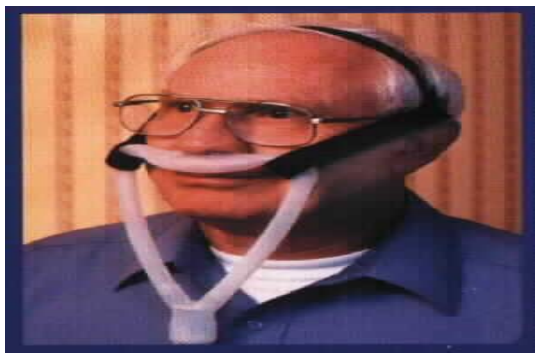
(2)

**Oral appliance for obstructive sleep apnea**

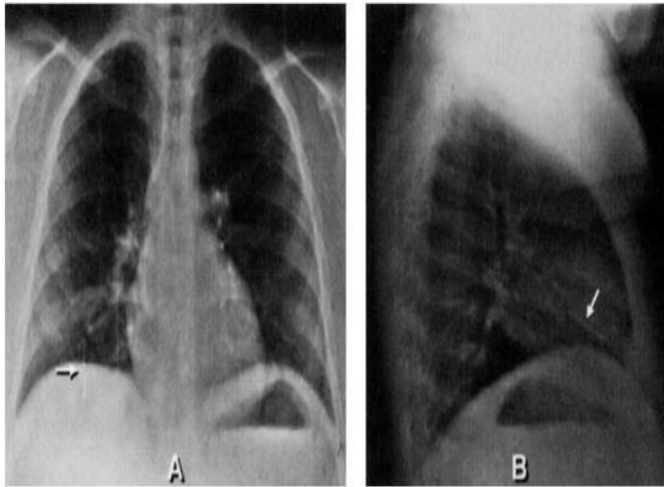


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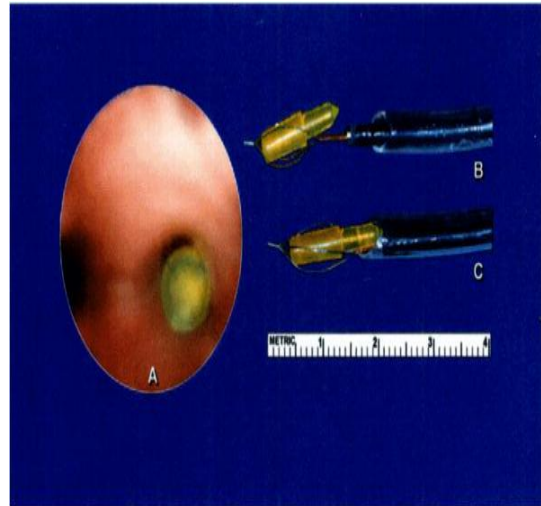
**Continuous positive airway pressure (CPAP)**



(4)



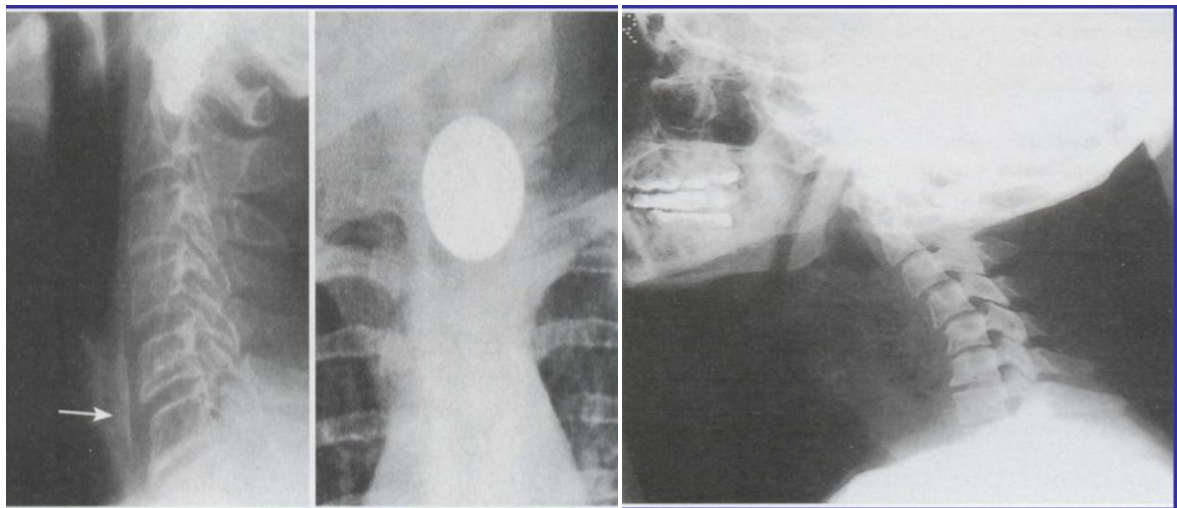
A foreign body (straight pin, arrows), aspirated into the right middle lobe of a 6-year-old girl, is seen on posteroanterior (*left, A*) and right lateral (*right, B*) radiographs.



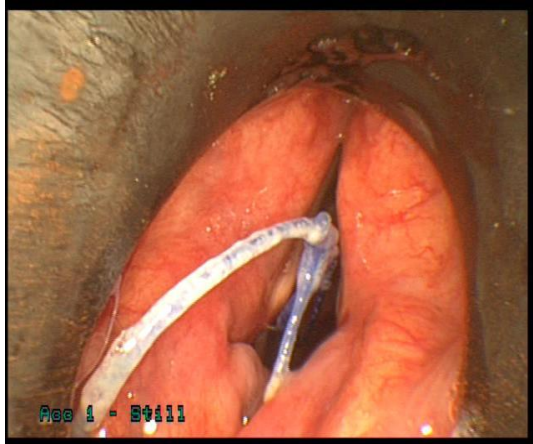
Flexible bronchoscopic view of a large foreign body (a Lite-Brite peg) lodged in the right main bronchus of a 7-year-old boy (*left, A*).

(5)

### Foreign body in the esophagus



(6)

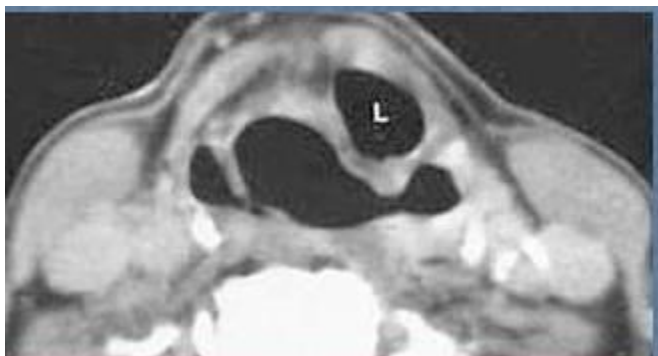


Suspension Microlaryngoscopy Picture of Foreign Body in the Larynx

**(7) Foreign body aspiration in the right main bronchus (note the air trapping)**



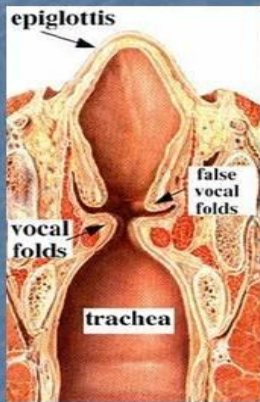
(8)





(9)

## Laryngocele

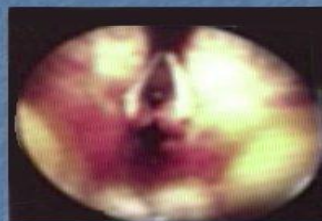


(10)

## ACUTE-LARYNGO-TRACHEO-BRONCHITIS "CROUP"



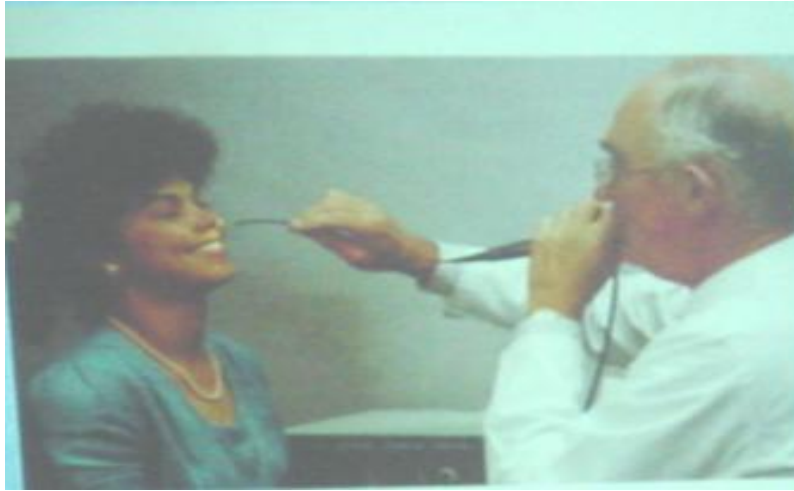
Normal PA plain  
X ray neck



Steeple sign



### Station 26:

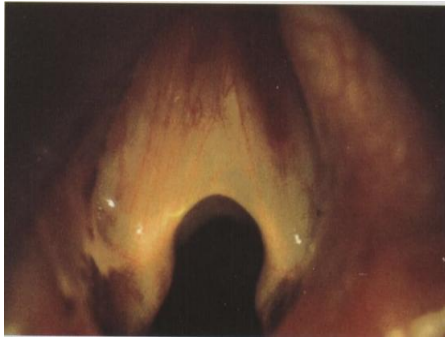


#### A-What is the procedure?

- Fixable fibroptic endoscope

#### B-Mention 2 places it can reach?

- 1- Nasal cavity
- 2- nasopharynx
- 3- oropharynx
- 4- hypopharynx
- 5- larynx

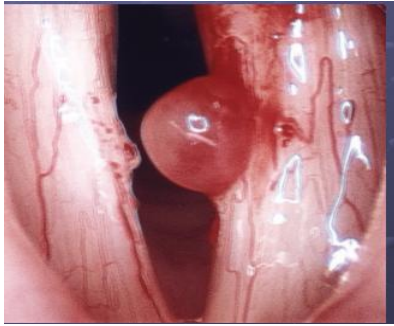
**Station 27:****➤ Patient presents with hoarseness****A. What is the diagnosis?**

- Laryngeal web

**B. What is the treatment?**

- Observation (if it's not affecting the breathing)
- Laser excision (by endoscopy)
- Open procedure+ tracheostomy (if its huge/recurrent then external approach)

### Station 28:



➤ Boy present with hoarseness after shouting to his friend:

**A-what is the abnormality?**

- **Vocal cord polyp with hematoma**

**B-what is the treatment?**

- **Surgical excision**

## Other pictures:

(1)

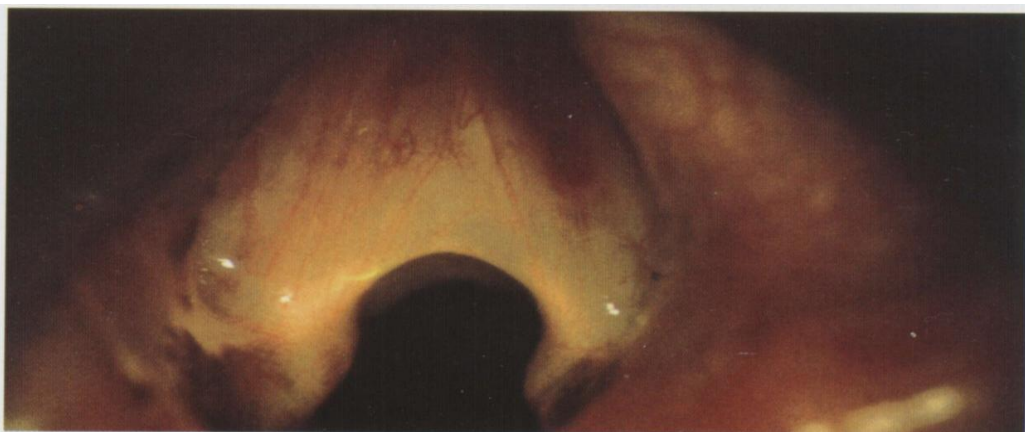


Fig. 4.71 **A laryngeal web.** Congenital abnormalities of the larynx are uncommon. Webbing of varying degrees of severity is one of the commoner developmental abnormalities, and presents as hoarseness. Similar webbing may follow inadvertent trauma at endoscopic surgery to both vocal cords near the anterior commissure. A mucosal web is treated with surgical division. Most webs, however, are deep and fibrous and need an indwelling “keel” after division to avoid recurrence.

(2)

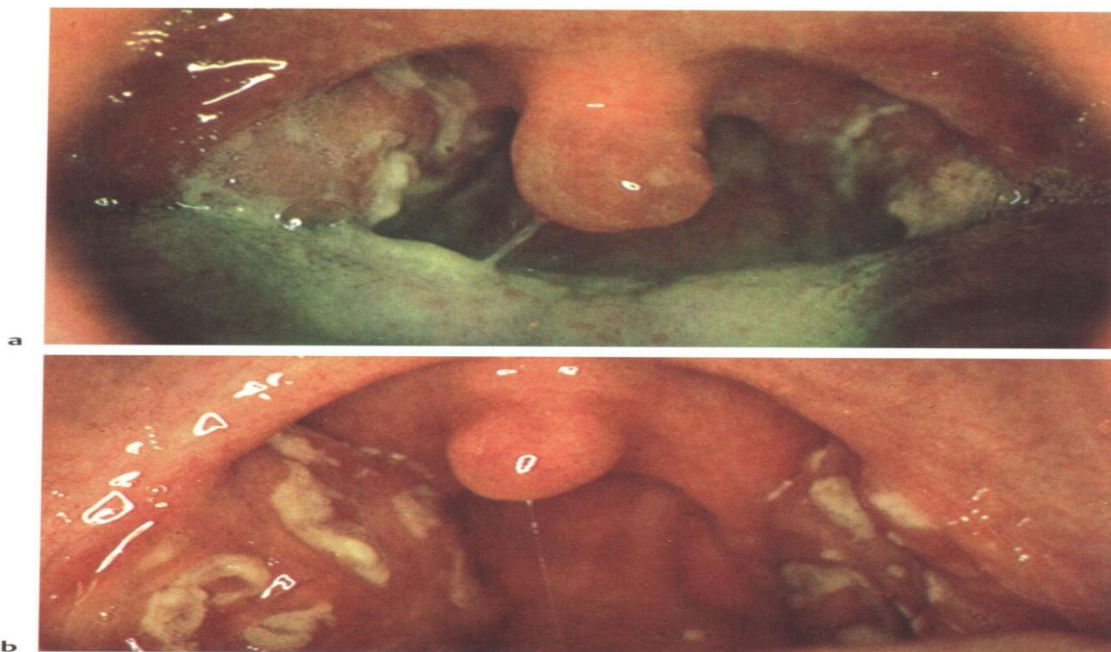


Fig. 4.52 **Acute tonsillitis.** The appearance of the tonsils in acute tonsillitis is either diffuse (a) or punctate (b).



(3)

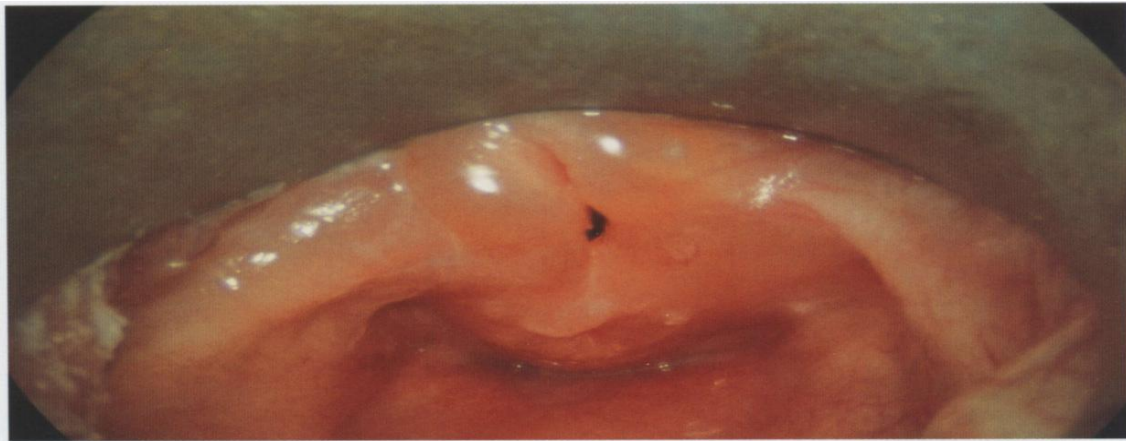


Fig. 4.76 **Laryngomalacia.** This is the commonest cause of stridor in infants. The epiglottis is curled ("omega-shaped") and tightly tethered to the aryepiglottic folds, which are tall and floppy, resulting in supraglottic collapse on inspiration.

Diagnosis can usually be established from the history and confirmed by awake flexible fiberoptic laryngoscopy.

Most cases are mild, no treatment is necessary, and the stridor gradually fades, resolving completely by about age 2. However, 10% of cases are severe with failure to thrive (and often associated gastroesophageal reflux). In these patients an endoscopic aryepiglottoplasty may be required to release the epiglottis and reduce the aryepiglottic folds.

(4)

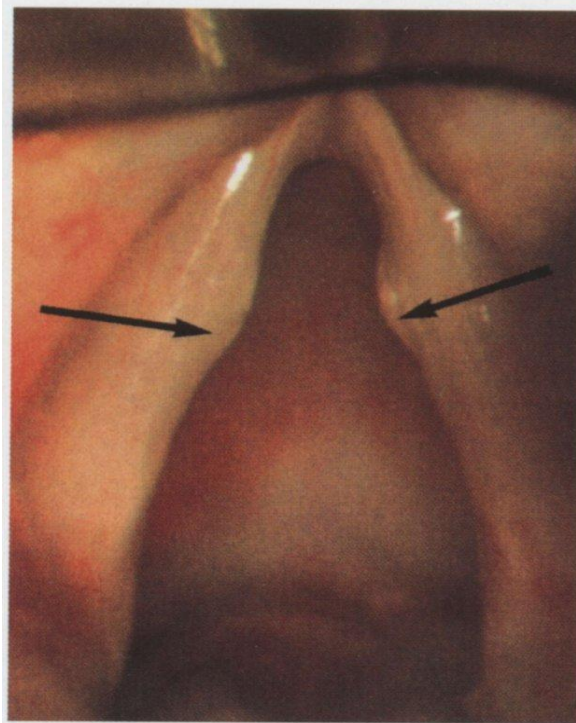
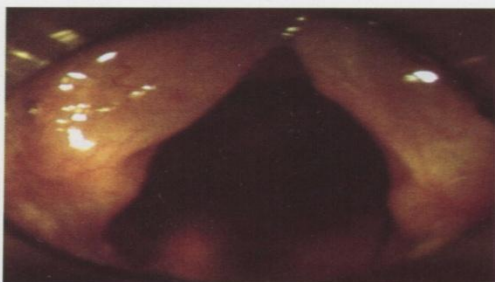


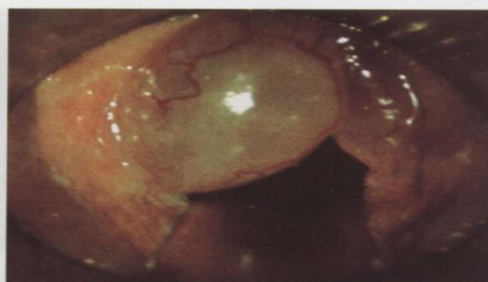
Fig. 4.72 **Laryngeal nodules** (arrows). A specific and localized type of chronic laryngitis, often seen in professional voice users, is laryngeal nodules (**singer's nodules**). Initially an edema is seen on the vocal cord between the anterior one-third and posterior two-thirds of the cord. Removal of the nodules may be necessary, but attention to the underlying voice production by a speech therapist is the most important aspect of treatment. These nodules are not an uncommon cause of hoarseness in children, particularly of large families involved in competitive shouting (**"screamers" nodules**). Vocal cord nodules are also seen in those who overuse or misuse their voices.



(5)

218 *The Pharynx and Larynx*

a



b

Fig. 4.83a, b **Chronic laryngitis.** With this condition, hyperemia of the mucous membrane may be associated with other changes in the larynx. Edema of the margin of the vocal cords is common (Reinke's edema), so that the free margin is polypoid and a large sessile polyp may form. The edema, although affecting both cords, may be more marked on one side (b).

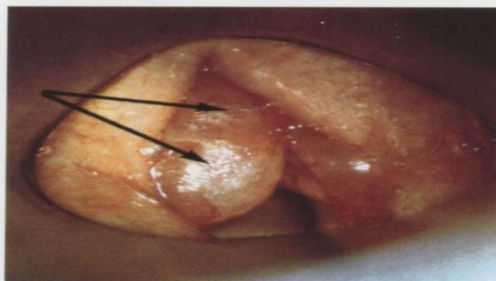


Fig. 4.84 **Hypertrophy of the ventricular bands.** Hypertrophy of the ventricular bands is another finding in chronic laryngitis and they may meet in the mid-line on phonation, producing a characteristic hoarseness. Reinke's edema is also present. Microlaryngoscopy and surgical excision of the edematous margins is effective with dissection or the laser beam. Excision to the anterior commissure is made on one cord only to avoid webbing.

(6)

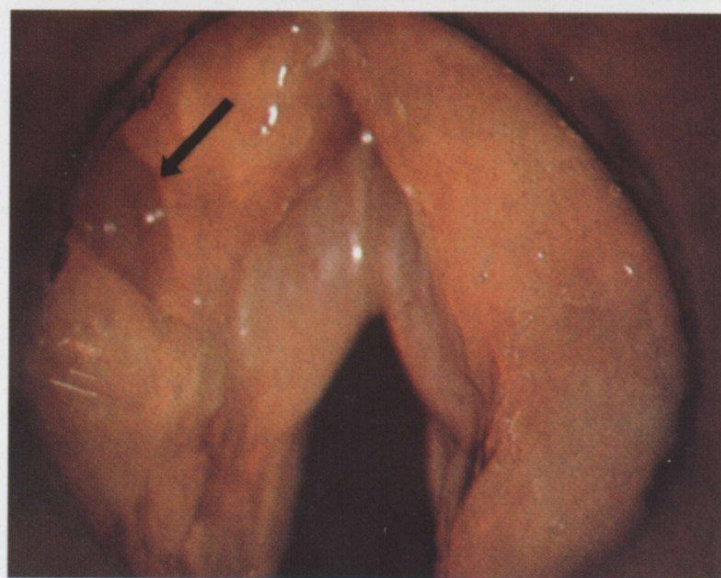


Fig. 4.88 **Supraglottic squamous cell carcinoma.** Carcinoma of the larynx commonly involves the vocal cord (glottic carcinoma), but lesions may develop below the cord (subglottic) or above the cord (supraglottic). The ulcerated area of granulation tissue above the edematous vocal cord in this case is a squamous cell carcinoma.

(7)

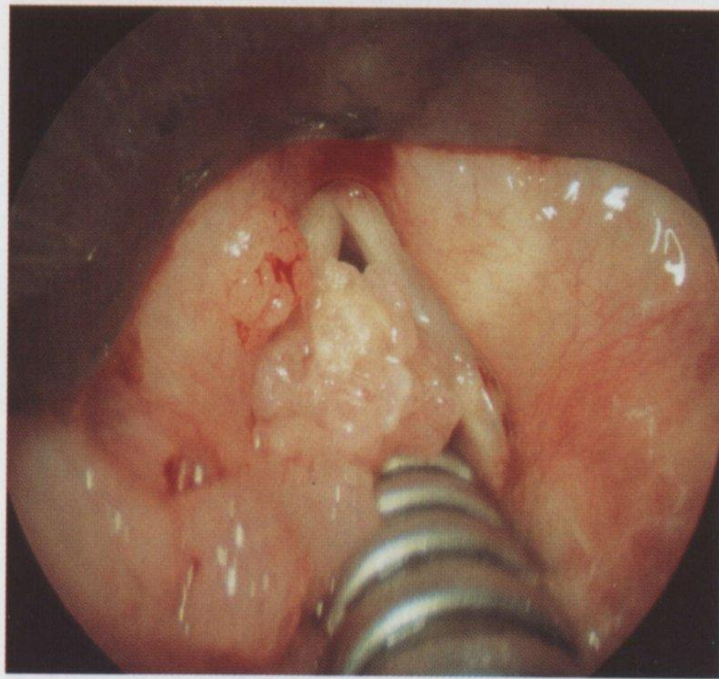
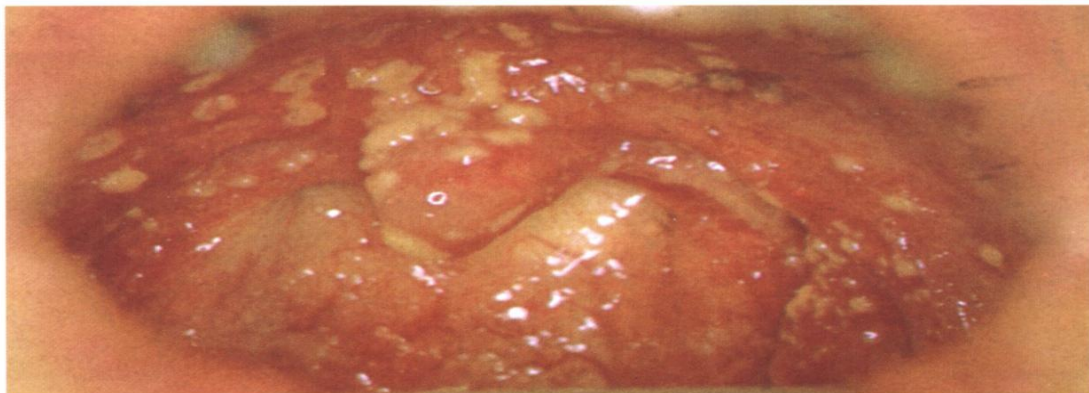


Fig. 4.75 Juvenile laryngeal papilloma.

(8)



a

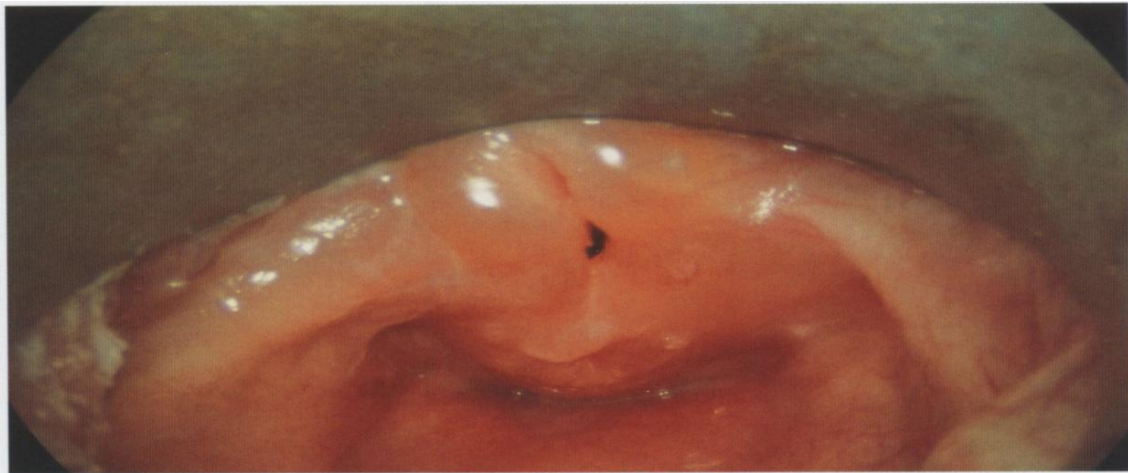


b

Fig. 4.56 Oral candidiasis. a Extensive continuous white areas covering the oropharynx. b Extensive punctate white areas covering the oropharynx.



(9)

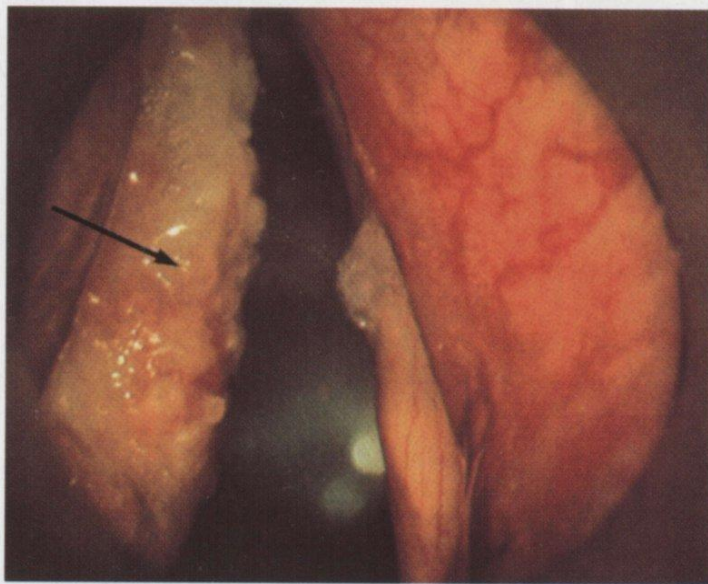


**Fig. 4.76 Laryngomalacia.** This is the commonest cause of stridor in infants. The epiglottis is curled (“omega-shaped”) and tightly tethered to the aryepiglottic folds, which are tall and floppy, resulting in supraglottic collapse on inspiration.

Diagnosis can usually be established from the history and confirmed by awake flexible fiberoptic laryngoscopy.

Most cases are mild, no treatment is necessary, and the stridor gradually fades, resolving completely by about age 2. However, 10% of cases are severe with failure to thrive (and often associated gastroesophageal reflux). In these patients an endoscopic aryepiglottoplasty may be required to release the epiglottis and reduce the aryepiglottic folds.

(10)



**Fig. 4.87 Carcinoma of the vocal cord.** This usually occurs in smokers. The indurated leukoplakia on this vocal cord (arrow) is a well-differentiated squamous cell carcinoma that has arisen as a result of chronic laryngitis with hyperkeratosis.

The prognosis for vocal cord carcinoma with radiotherapy is excellent, with a cure rate of over 90% for early lesions. The voice returns to normal, as does the appearance of the vocal cord.

(11)

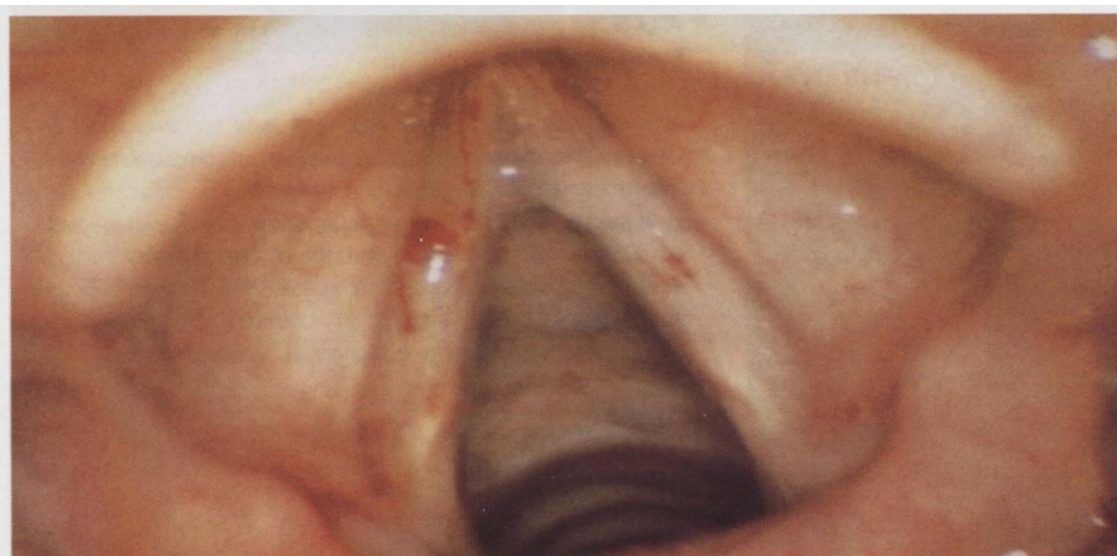


Fig. 4.82 **Acute laryngitis** showing slight hyperemia and edema of both vocal cords seen with the fiberoptic endoscope.

(12)

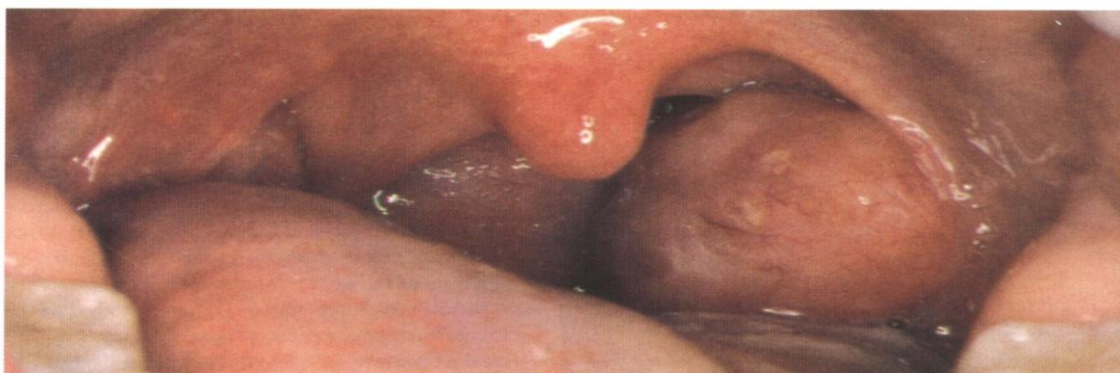


Fig. 4.44 **Unilateral tonsil enlargement.** A tonsil can be described as “large” when compared with the other tonsil. A conspicuously large tonsil in the absence of acute inflammation is an important finding suggesting either a **chronic quinsy** or a **lymphosarcoma**. A persistent and conspicuously large tonsil, therefore, should be removed for histology.

(13)

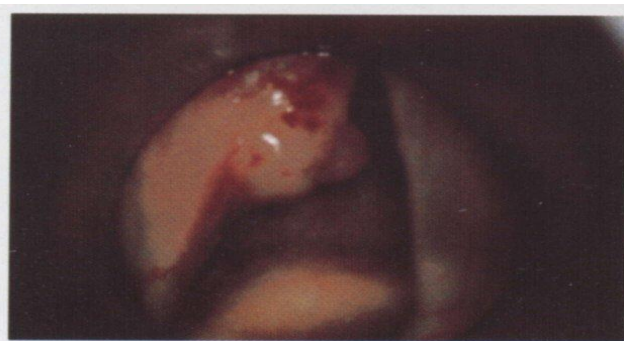


Fig. 4.89 **Subglottic squamous cell carcinoma.** The prognosis for supra-glottic and subglottic carcinoma is worse than for glottic carcinoma, for hoarseness is delayed until the cord is involved and the greater vascularity and lymphatic drainage above and below the cord predisposes to earlier metastasis.

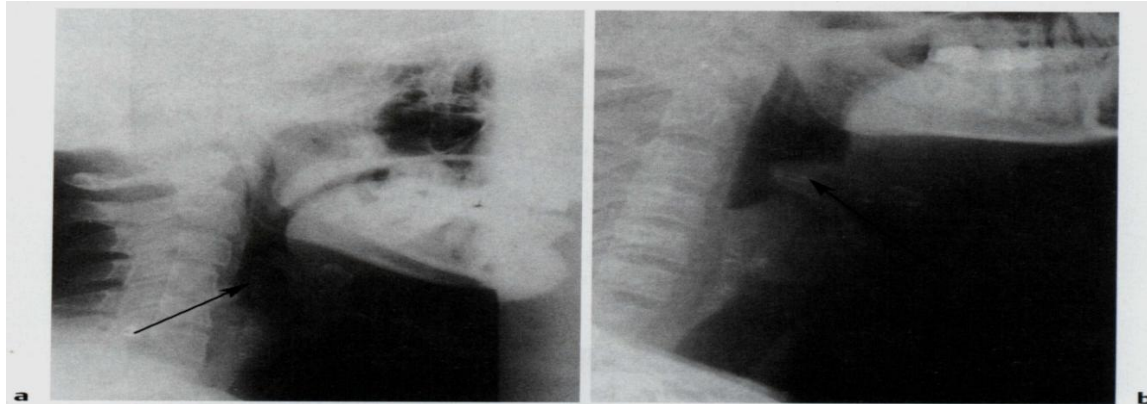


(14)



Foreign body in the esophagus treat it with esophagoscopy or balloon extraction

(15)



**Fig. 4.68 Epiglottitis.** This is a serious, life-threatening condition and a diagnosis that may be missed. The complaint of a sore throat in an ill patient with a history of dysphagia and fever, often strongly suggestive of a quinsy, **is associated with little amiss on oral examination**. Such a situation strongly suggests epiglottitis, and a lateral soft-tissue radiograph is frequently diagnostic. This is a diagnosis not to be missed, and awareness that it also occurs in children is important.

The normal narrow contour of the epiglottis is seen to be replaced by a round swelling (**b**: arrow). This condition, if ignored, may lead to stridor, respiratory obstruction, and death if the airway is occluded.

Early diagnosis, hospital admission, and intravenous antibiotic therapy (e.g., cefuroxime) is curative. Close nursing observation of the airway is necessary.

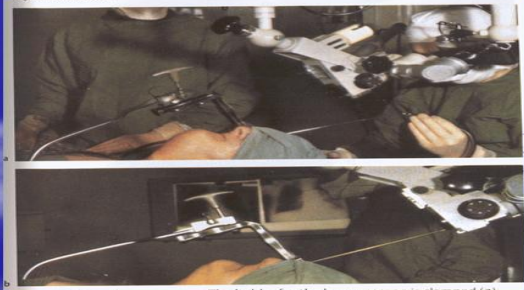


(16)

## Question 2

A. Identify? **MICROLARYNGOSCOPE**

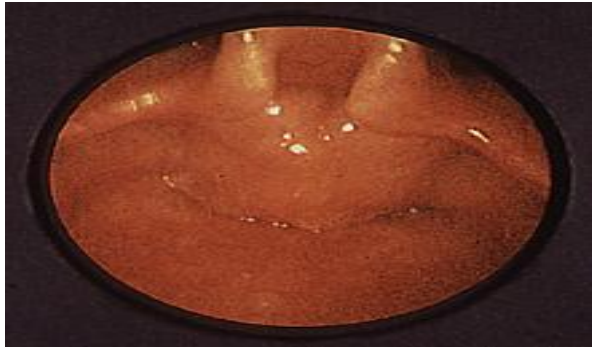
B. What is the nerve supply of cricothyroid? **SUPERIOR LARYNGEAL NERVE**



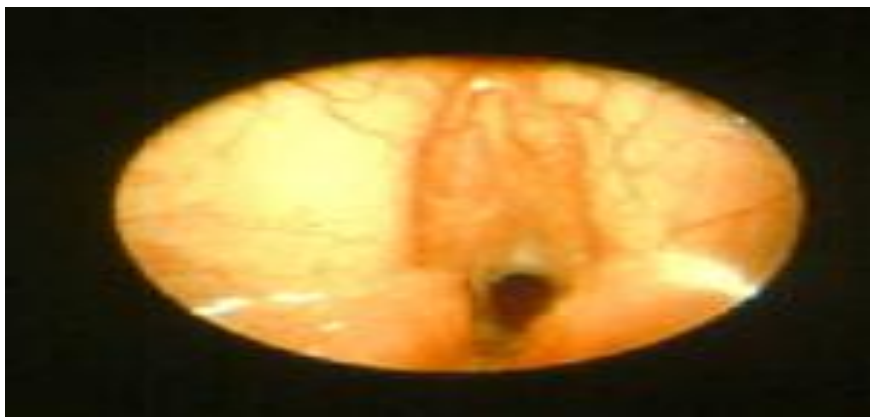
- T.R.BULL\ P227 (4<sup>th</sup>)
- T.R.BULL\ P224,225 (2<sup>nd</sup>)

22 December 2013 DR. Y.M.N.

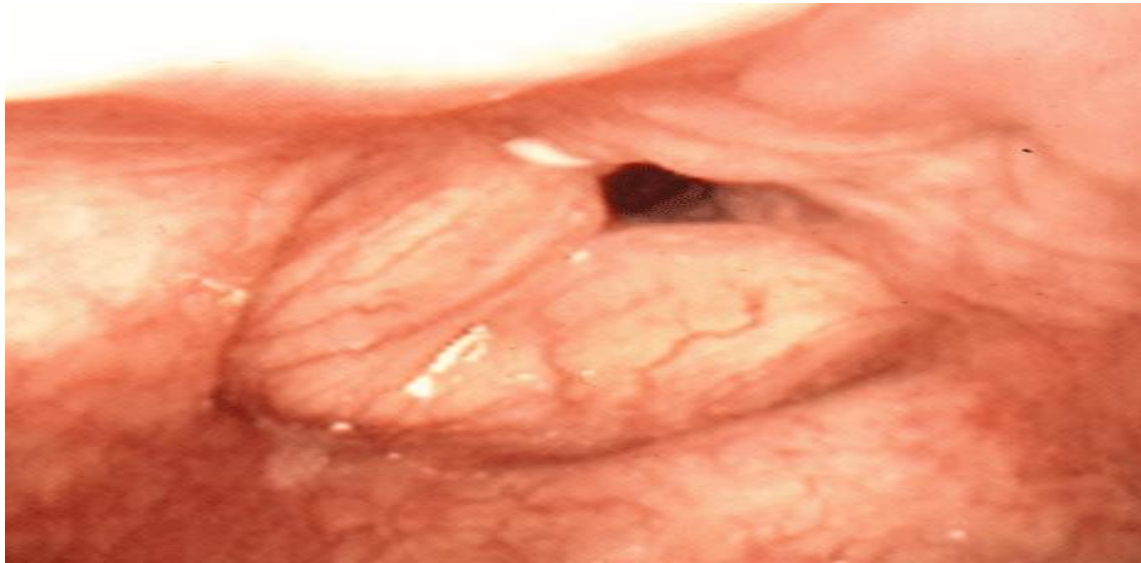
(17) Laryngomalacia



(18) Laryngeal web

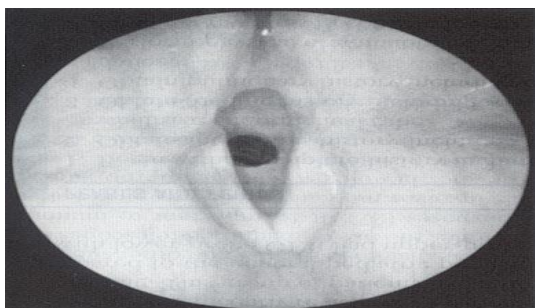
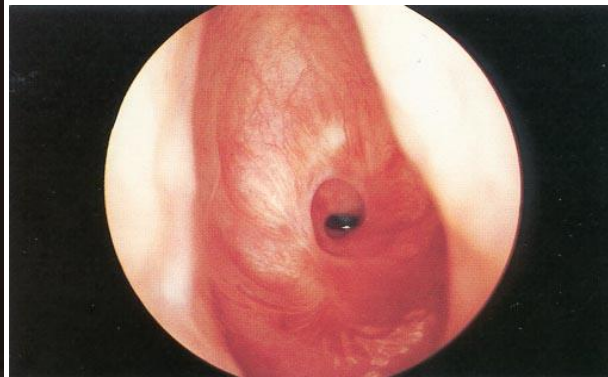
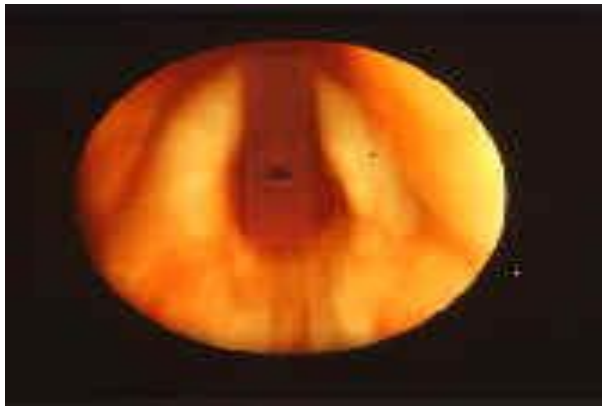


(19)



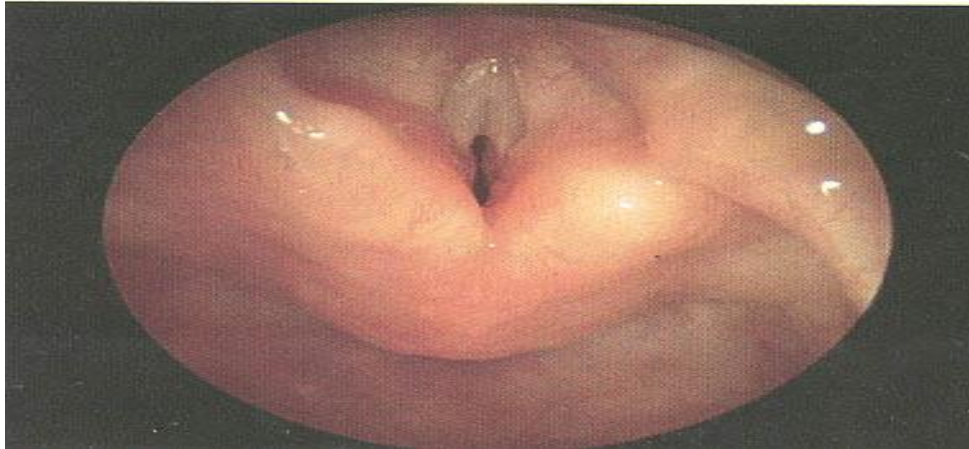
**Reinke's edema**

(20)



**Subglottic stenosis**

(21)



**Laryngomalacia (not sure some said it is bilateral vocal cord paralysis)**

(22)



**Right vocal fold cyst**

(23)



**Vocal cord granuloma**

(24)



**Vocal cord nodules**

(25)



**Right Vocal fold polyp with a reaction**



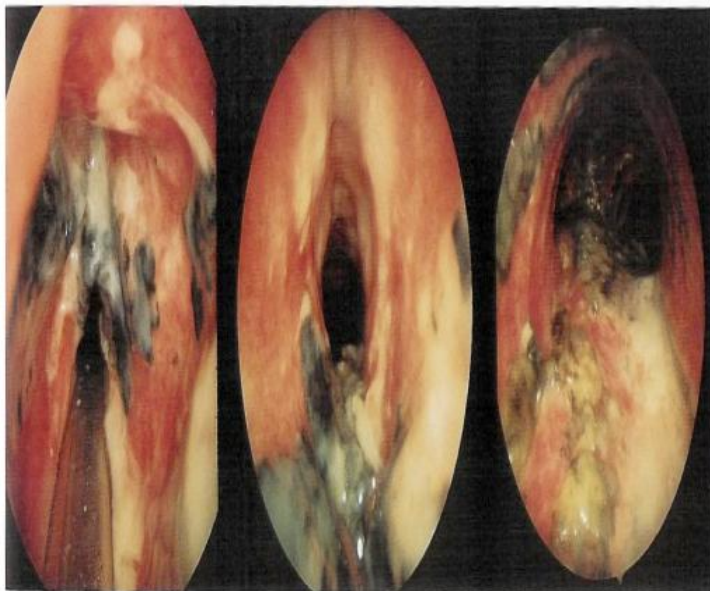
**Cystic hygroma**



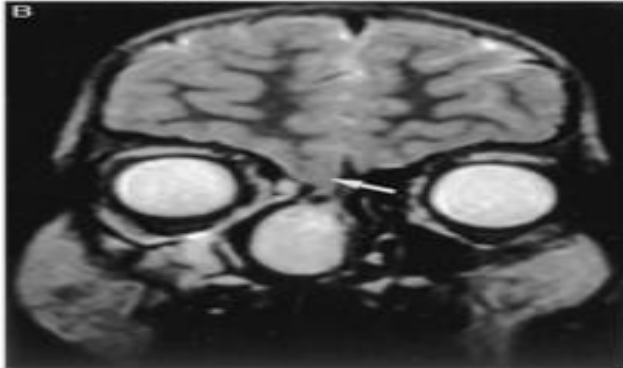
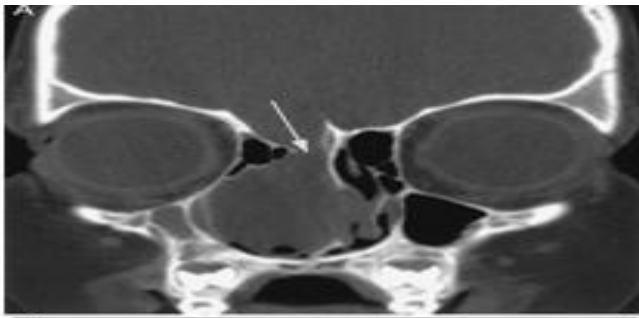
**CROUP**



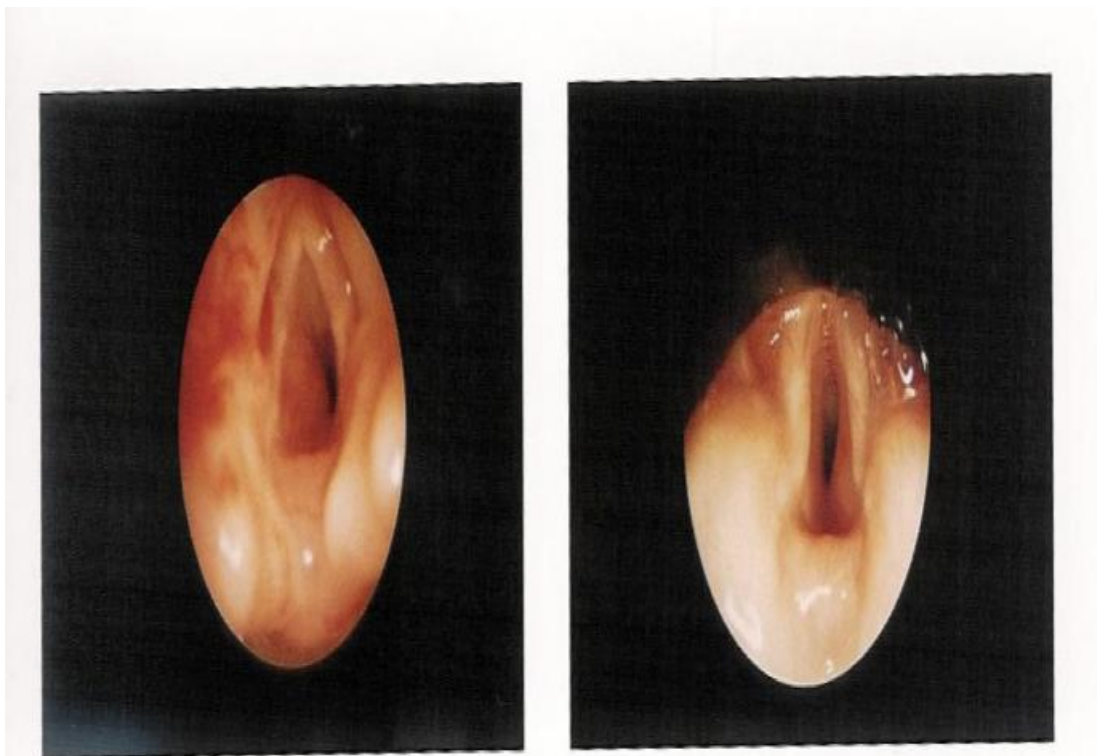
**Thermal injury**







**Differential diagnosis**  
**Dermoid, meningoencephalocele**



**Subglottic hemangioma**