

Benign lesions of the larynx

Dr. Ali lafta salman
Board certified in Otolaryngology
F.I.B.M.S- C.A.B.M.S

1) Benign tumors of the larynx Papilloma:

the causative agent is human papillomavirus (subtypes 6&11). Papillomas are 2 type : juvenile & adult.

The pathology is as follows:

1. Papillary epithelial tumor usually involving the true cords but may affect any site in the upper aerodigestive tract.
2. Papilloma in juveniles is more often multiple and recurs more frequently than in adults, seems to be related to hormonal changes so Papillomas usually regress during puberty .

Malignant transformation is very rare. it may be transmitted at time of delivery from a mother infected with genital warts. Clinically appear as glistening white irregular growths, pedunculated or sessile, friable and bleeding easily.

3. Papillomas in adults are usually single, less recurrence rate, not regress, but may undergo malignant change specifically with HPV subtype 16. It is common in males in age group of 30-50 years • Usually arises from anterior half of the vocal cord or anterior commissure

The lesions have predilection for points of airway constriction, where there is increased air flow ,drying,crusting and irritation.

Symptoms are as follows:

1. Aphonia or weak cry is usually the first sign in infants.
2. Dyspnea and stridor are seen.
3. Hoarseness is the most common symptom in adults.



Figure 91.1 Recurrent respiratory papillomatosis in the larynx.

Diagnosis.

Endoscopy is required to establish the diagnosis ,obtain tissue for histopathology and to assess the extent of the disease.



Treatment.

The aim of R is to remove the papilloma ,to maintain a safe patent airway and laryngeal function.

1.Medical treatment.

A. Alpha interferon .

B, Cidofovir, a new antiviral agent approved for ocular cytomegalovirus infections, has shown promise as a local injection in adjuvant therapy.

Irradiation is contraindicated because of its carcinogenic effect

2.Surgical treatment.

1. Suspension microlaryngoscopy with CO2 laser excision is the most commonly employed treatment modality. Multiple excisions are usually required. The laser is favored because of its hemostatic properties & its precision allows for vaporization of the lesion without harming the underlying vocal fold.

2. Cryosurgery.

3,Tracheostomy should be avoided if possible as the papillomas can become implanted into the trachea and bronchi.

2 - Cystic lesions of larynx •

There are 3 types of cysts in larynx

□ Ductal cyst: they are retention cysts due to blockage of ducts of the seromucinous glands of laryngeal mucosa. They are seen in vallecula, aryepiglottic folds, false cords, ventricles and pyriform fossa. They remain asymptomatic if small, or cause hoarseness, cough, throat pain and dyspnoea if large.

Sometimes a intracordal cyst may occur on true cords. It is similar to epidermoid inclusion cyst

□ Saccular cyst: obstruction to the orifice of the saccule causes retention of secretions and distention of the saccule which presents as cyst in the laryngeal ventricle.

Anterior saccular cysts present in the anterior part of the ventricle and obscure part of the vocal cord.

Lateral saccular cysts which are larger extend into the false cord, AE folds and may even appear in the neck

2) Cystic lesion of the larynx :

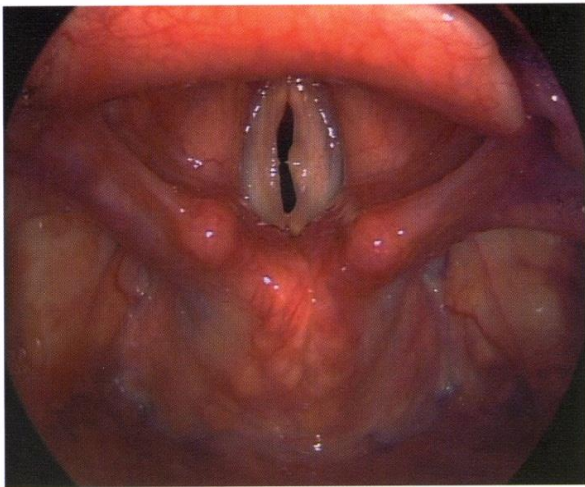


Figure 167.5 Mucus retention cyst.

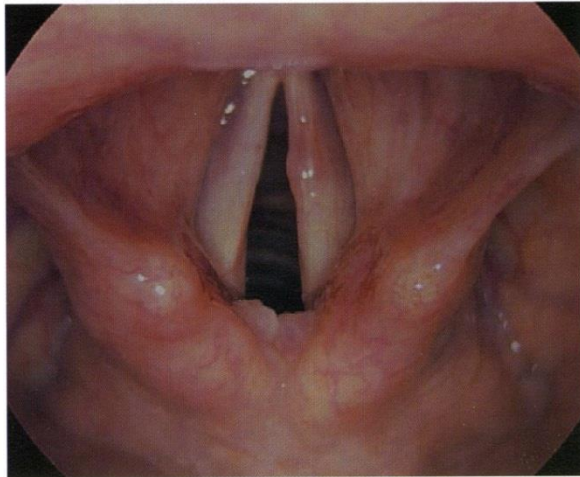


Figure 167.6 Epidermoid cyst.

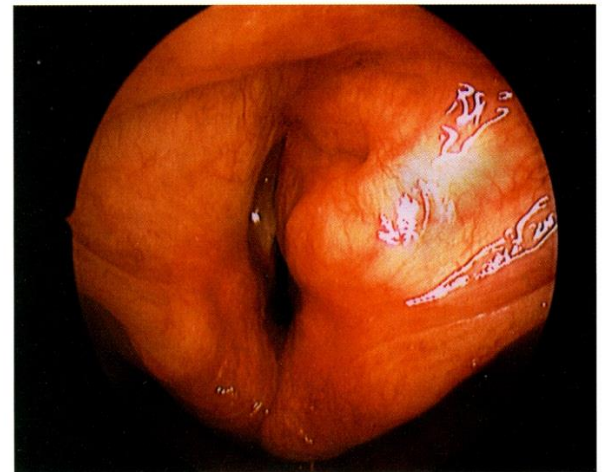


Figure 88.2 Right saccular cyst.

3) Laryngocele:

It is an air-filled dilation of the ventricle. There are three types

1-External laryngocele, it is the more common form, the sac protrudes above the thyroid cartilage & the thyrohyoid membrane & presents as a mass in the neck.

2-Internal laryngocele, less common, in which the sac remains within the thyroid cartilage.

3-A combined type may also be present.

Laryngocoele is supposed to arise from raised transglottic air pressure as in trumpet players, glass blowers and weight lifters

Symptoms may include the following:

1 – External laryngocoele presents as reducible swelling in neck, which increases in size on coughing and on performing valsalva

2-Internal laryngocele presents with hoarseness & dyspnea.

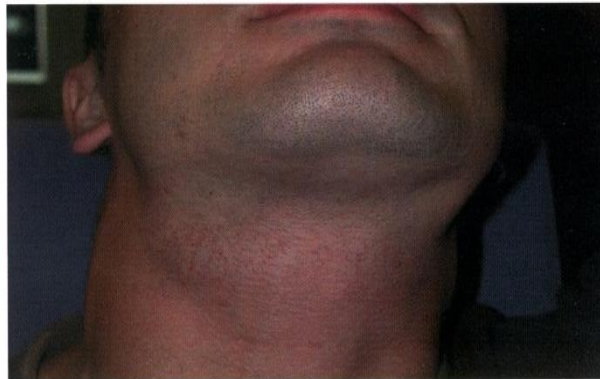


Figure 171.4 A combined right-sided laryngocele after inflation following a Valsalva manoeuvre.

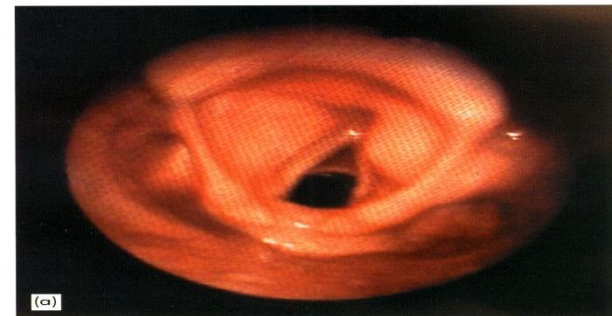


Figure 171.5 (a) Appearance of a right-sided laryngocele as seen with a flexible laryngoscope. (b) Endoscopic appearance of right-sided laryngocele at the time of surgery.

Diagnosis is as follows:

1-Characteristic clinical history.

2-Typical appearance of a bulging laryngeal mass, visualized during indirect laryngoscopy, fiberoptic laryngoscopy, or direct laryngoscopy.

3-CT or MRI will help.

Treatment includes

1-laryngoscopic decompression for small lesions

2- lateral external approach for larger lesions

3- laser endoscopy.



4)Laryngeal polyps:

Laryngeal polyps are the most common benign lesions of adult larynx.

Vocal abuse, smoking, laryngopharyngeal reflux, allergy are recognized causes of polypoid degeneration.

Mostly affects men in age group of 30-50

- Typically its unilateral and arising from same position as vocal nodule
 - Its soft smooth and often pedunculated • It may flop up and down during phonation or respiration
 - Its caused by sudden shouting resulting in haemorrhage in the vocal cord and subsequent submucosal oedema
- clinical features
- Hoarseness is a common symptom
 - Large polyp may cause dyspnoea, stridor or intermittent choking
 - Some patients may complain of diplophonia due to different vibratory frequencies of two vocal cords

Surgical removal of vocal cord polyps by microlaryngoscopic techniques is considered standard treatment & should be recommended in most cases.

5) Reinke's oedema

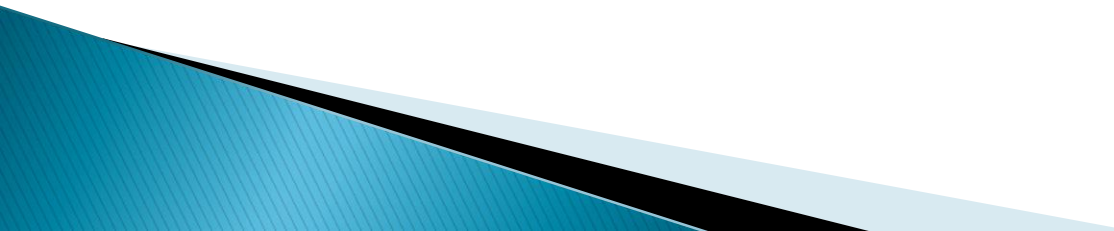
- This is due to collection of the oedema fluid in the subepithelial space of reinke (Reinke's space is immediately inferior to the mucosal squamous layer of the vocal cords and this is a space that allows the vocal folds to have the vibratory movement of the squamous layer).

It is seen in middle aged patients.

- Usual cause is vocal abuse and smoking (up to 98 percent)
- Both vocal cords show diffuse symmetrical swellings
- It is usually bilateral and chronic.

The treatment is to stop smoking, decrease voice abuse and other environmental exposures.

Surgery may be indicated if the edema becomes progressive by vocal cord stripping preserving enough mucosa for epithelisation

- Only one cord is operated at a time
 - Cessation of smoking is important to prevent recurrence
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Reinke's oedema



Laryngeal polyps

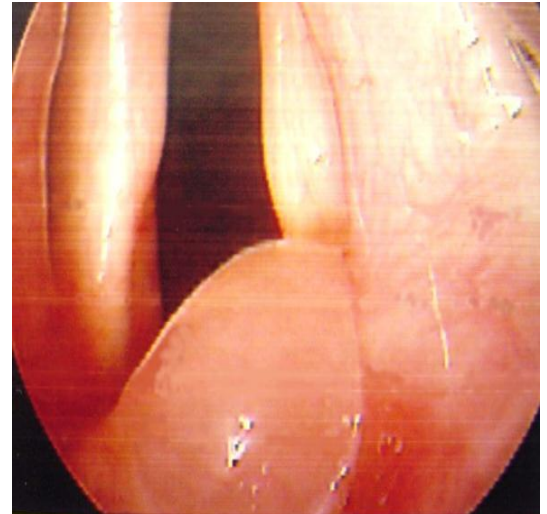
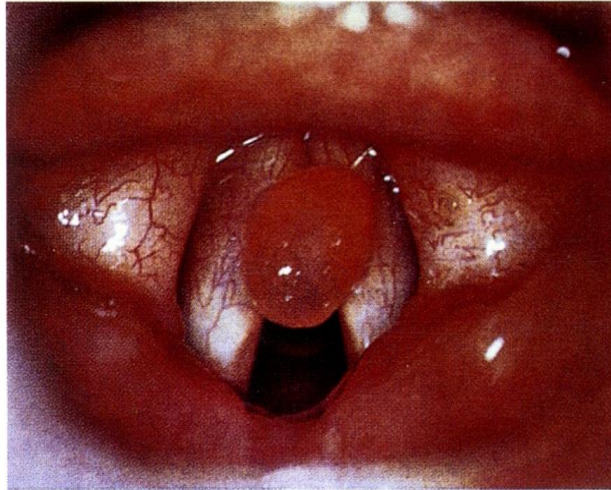


Figure 90.4 Vocal cord polyp following prolonged endotracheal intubation.

6)–Vocal nodules (singer’s nodules/screamers nodules) -

Appear symmetrically In the free edge of the vocal cord at the junction of anterior 1/3rd and posterior 2/3rd, as this is the area of maximum vibration and thus subjected to maximum trauma □ usually bilateral and more common in women.

Usually they measure less than 3mm □ They are results of vocal overuse like screaming in children or harsh talking in adults or faulty techniques in singers.

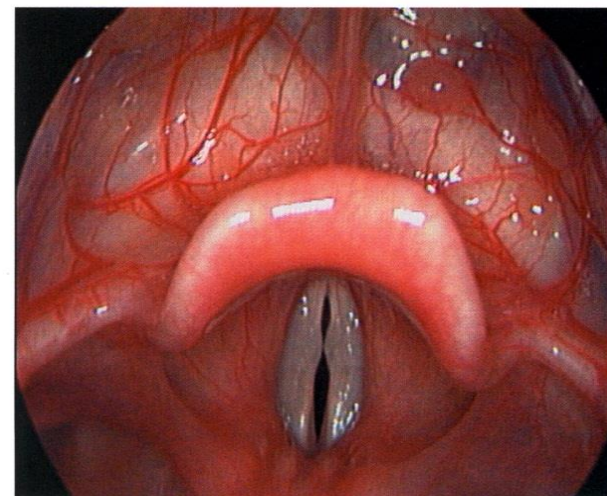
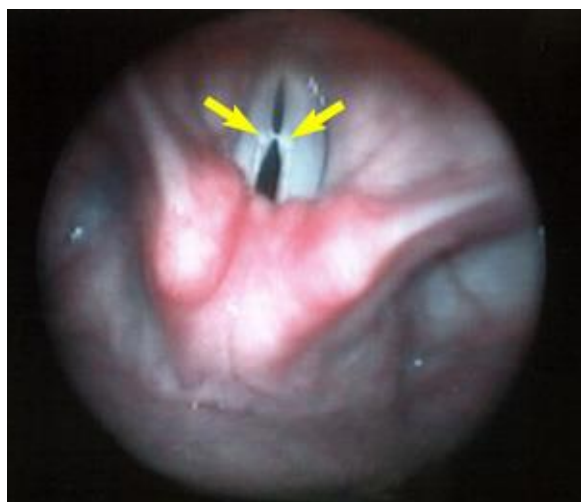


Figure 167.3 Vocal fold nodules.

pathology

- Trauma to the vocal cords in the form of vocal abuse or misuse causes oedema and hemorrhage in the Submucosal space • This undergoes hyalinization and fibrosis • Underlying epithelium also undergoes hyperplasia forming a nodule

clinical features

- Patient complains of hoarseness, vocal fatigue and pain in neck on prolonged phonation
- On examination the nodule appears soft, reddish and oedematous swelling, later becomes grayish or whitish in colour

Treatment

- Voice rest
- Surgery for larger nodules and long standing nodules in adults
(Microlaryngeal excision or laser vaporization)
- Speech therapy and re-education in voice production is necessary to prevent recurrence

7) Laryngomalacia:

Laryngomalacia is the most common laryngeal abnormality of the newborn and is due to unusual flaccidity of the laryngeal tissues especially the epiglottis.

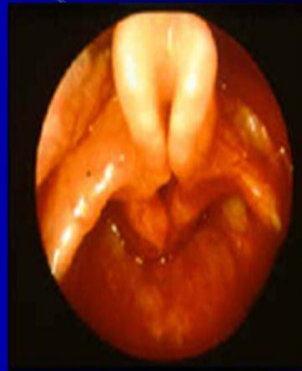
Symptoms are inspiratory stridor and noisy respiration noted soon after birth. Vocal cords are normal in appearance & mobility, histopathology of larynx is normal & there is normal cry. Infants are worse when put on their backs (supine) than when on their stomachs (prone). Hypoactive neuromuscular control has been the most current theory for laryngomalacia.

The epiglottis is usually elongated, thin & folded on itself (omega shape),

The commonest condition causing inspiratory stridor at or shortly after birth is laryngomalacia.

Treatment of Laryngomalacia is by observation & may need tracheostomy in severe cases.

Laryngomalacia



- Normal Vs Abnormal

- www.meei.harvard.edu/.../images/laryngomal.jpg



Figure 88.1 Laryngomalacia. Reused with permission from Bull TR. *Color Atlas of ENT Diagnosis*, 4th edn. New York: Thieme Publishers. 2003: 213; and from Bailey CM. Congenital disorders of the larynx, trachea and bronchi. In: Graham JM, Scadding GK and Bull PD (eds). *Pediatric ENT*, (in press), with kind permission of Springer Science and Business Media.

8) stenosis of the larynx

A) Acquired stenosis of the larynx; Injury to the larynx (blunt trauma, intubation, laryngeal endoscopy & surgical intervention) leading to acquired stenosis can involve the supraglottis, glottis, subglottis or any combination of these structures. GERD is also a major cause of laryngeal stenosis.

Clinical features & evaluation include the following;

1. Careful history taking.
2. Thorough physical examination of the head & neck.
3. Radiological examination includes x-ray films of the chest & lateral neck. CT scan has been found to be of great value in the evaluation of laryngeal trauma.
4. Endoscopy.

Prevention

Use of an appropriate (in size & shape) endotracheal tube, proper humidification, control of infection, as well as the duration & repetition of intubation are significant factors in the prevention of subglottic stenosis.

Treatment

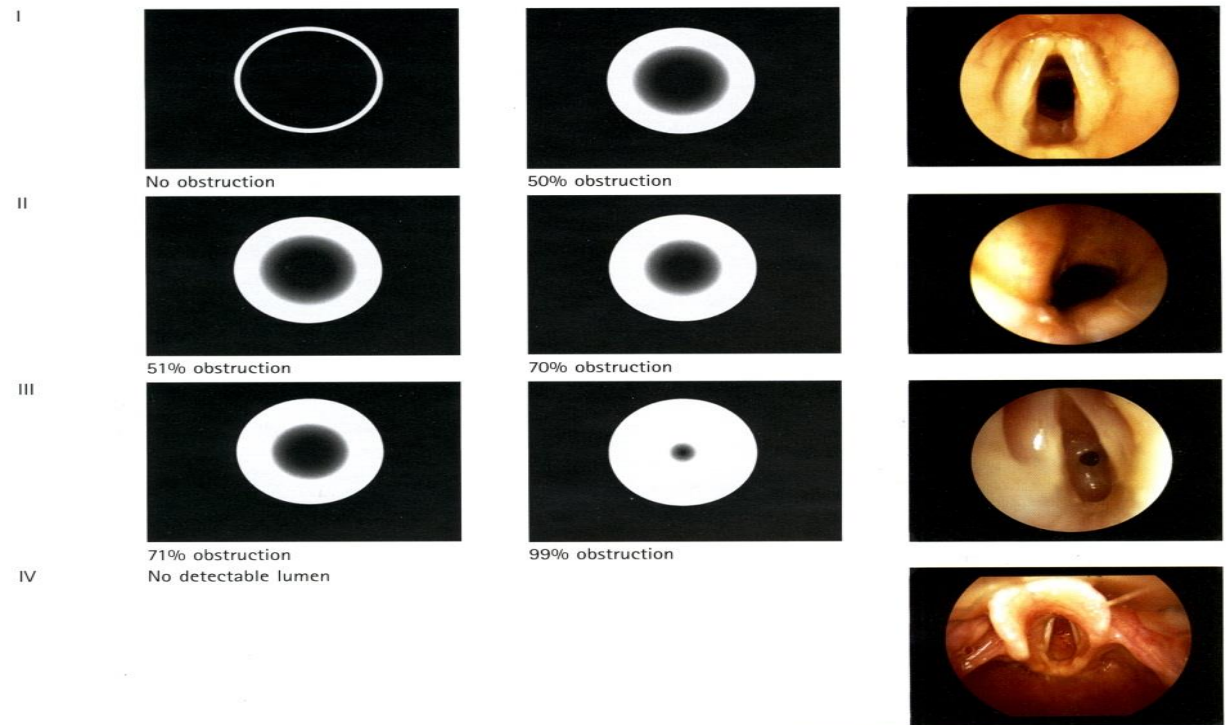
There are many procedures for this problem including dilation, steroid injection, endolaryngeal laser microsurgery & laryngotracheoplasty.

B) Congenital stenosis of the larynx:

Less than Acquired stenosis, 50% of cases need tracheostomy but most of them will be decannulated within 2-5year without required any surgical intervention.

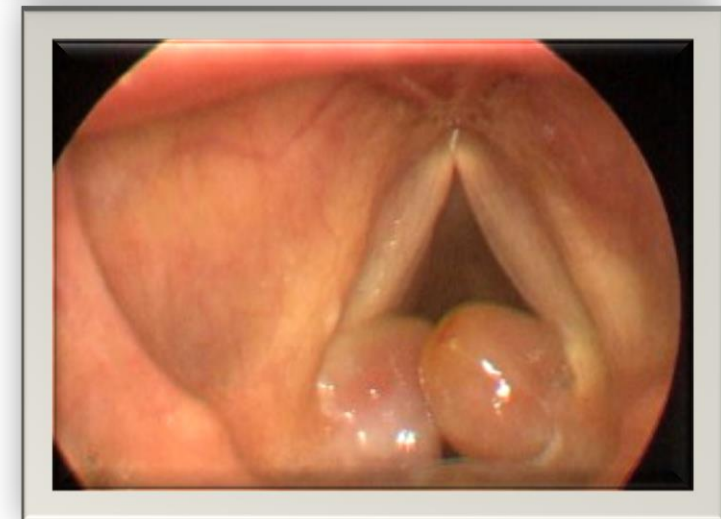
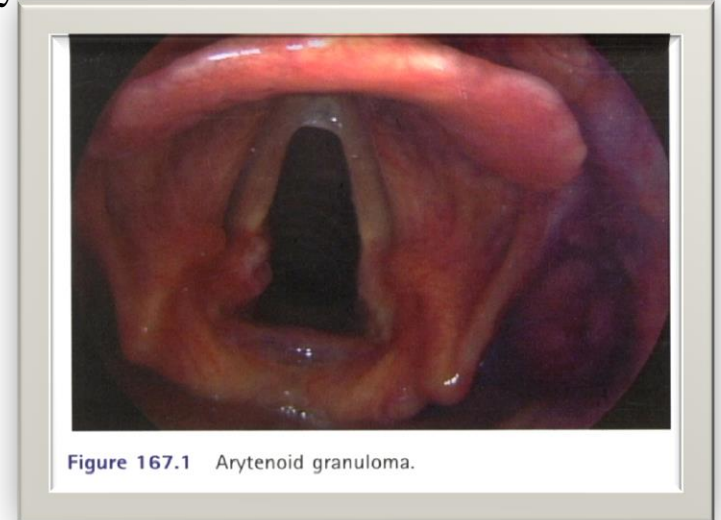
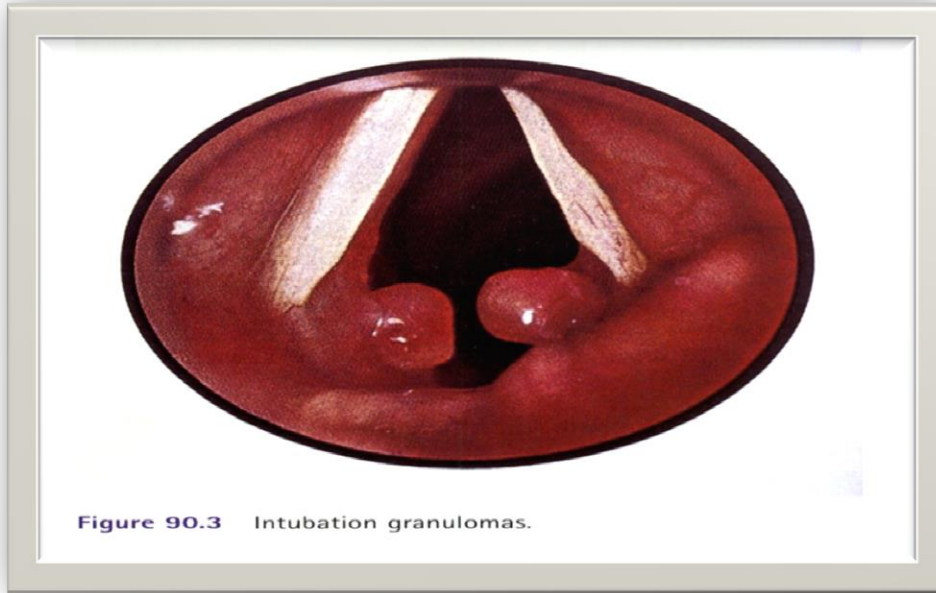
Pathology: either soft type(soft tissue thickening like mucosa or submucosa) or hard type (cartilage thickening mostly cricoid cartilage)

Clinical features & evaluation& Treatment: same as Acquired stenosis but most of infant & young children not required any surgical intervention & will improve with larynx growth.



9) Intubation granuloma:

The cause of intubation granuloma is endotracheal intubation (predisposing factors include: size, shape, material, duration, procedure, fixation of the endotracheal tube). Mucosal ulceration followed by granuloma formation over the exposed cartilage. The most common site for intubation granuloma is vocal process of the arytenoid, about 50% bilateral, women are more in 4:1. Treatment is by CO₂ laser or excision. Medical treatment with antibiotics, antacids & steroids may be effective in reducing the intubation granuloma.



10) **Leukoplakia (keratosis) larynx**

- This is localized form of epithelial hyperplasia involving upper surface of one or both vocal cords
- It appears as white plaque or warty growth on cord without affecting its mobility
- Its regarded as pre cancerous condition because carcinoma in situ frequently supervenes
- Hoarseness is common presenting symptom
- Treatment is stripping of the vocal cords and histopathological examination to rule out malignancy



THANK YOU

