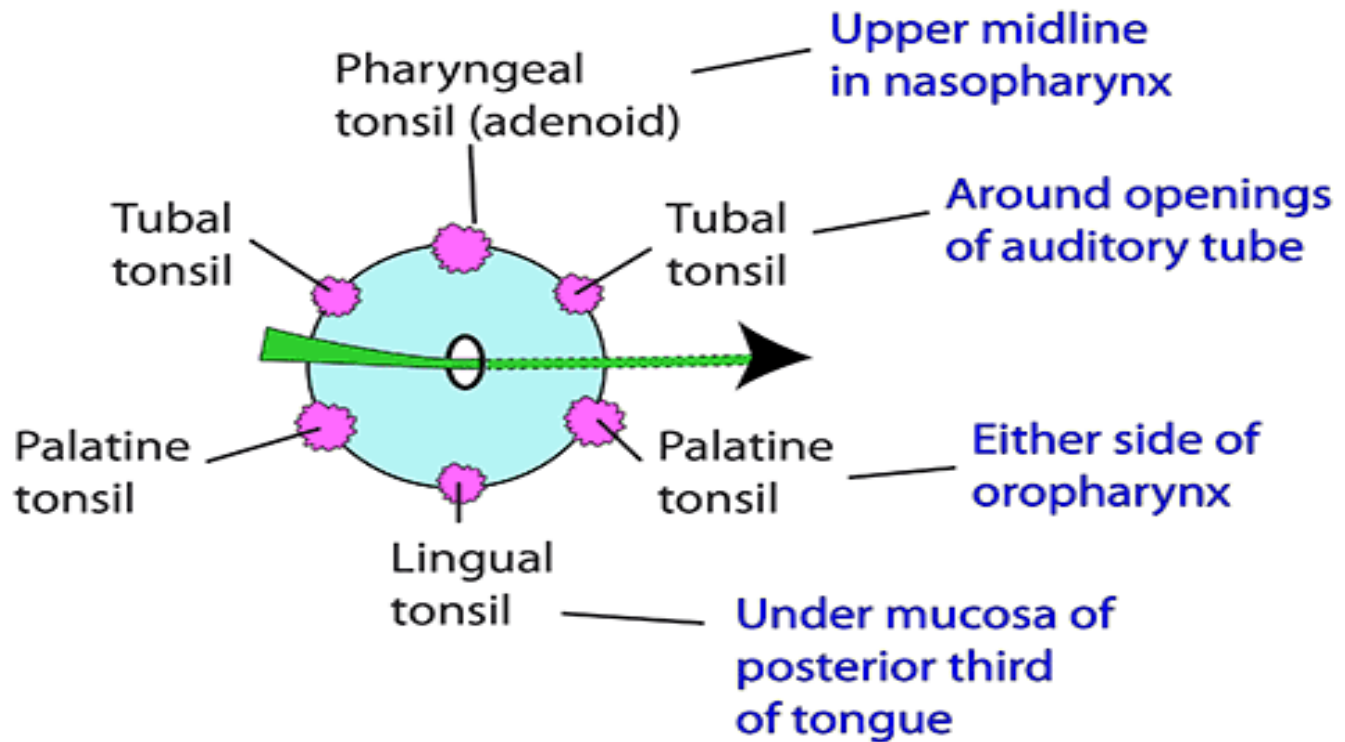


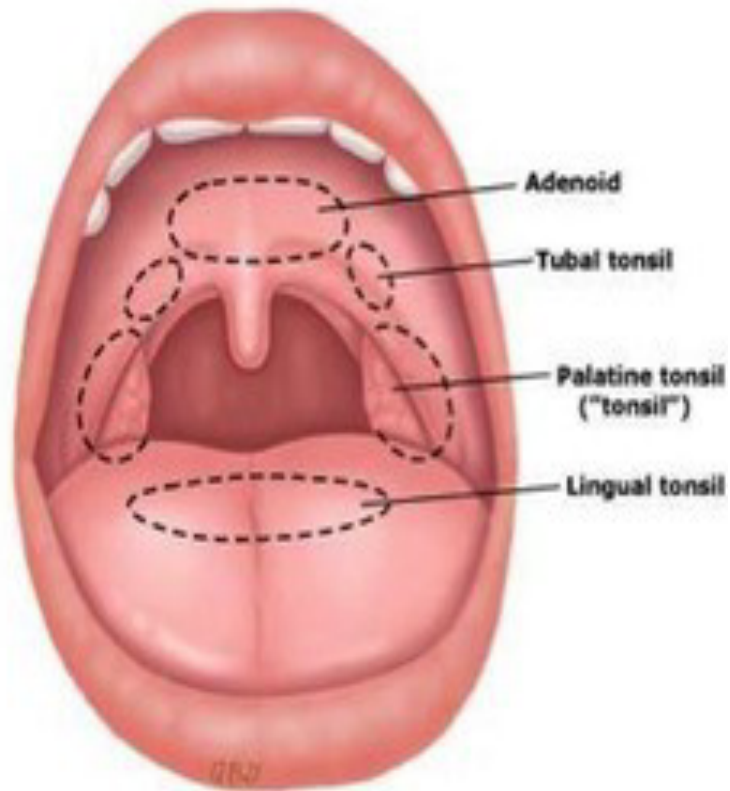
Tonsils and adenoids



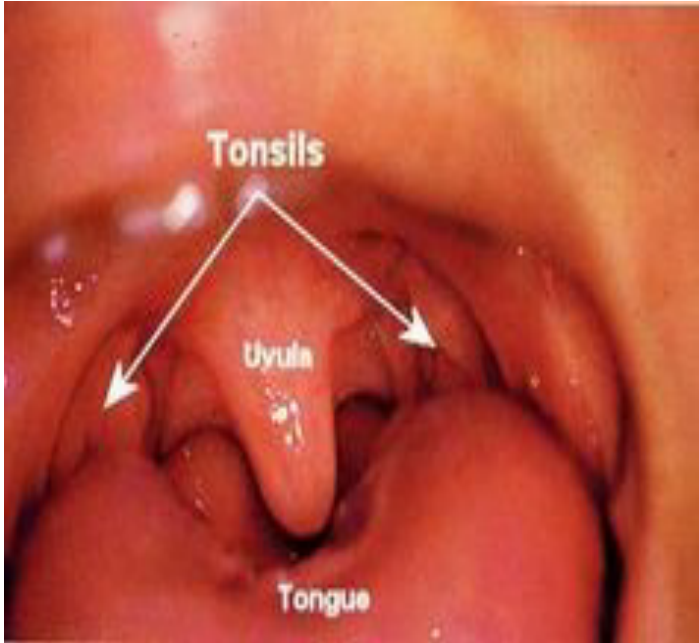
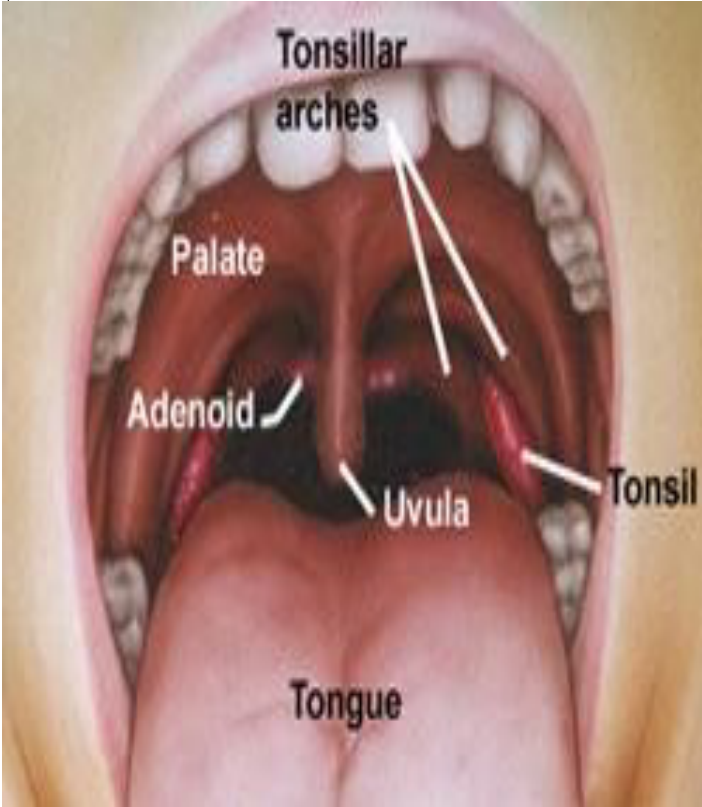
WALDEYER'S RING

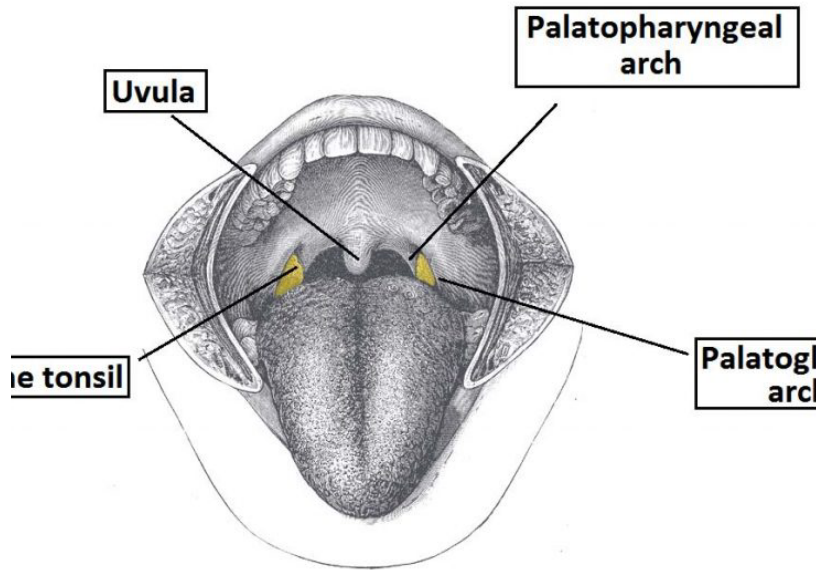
An interrupted circle of protective lymphoid tissue at the upper ends of the respiratory and alimentary tracts





Palatine tonsils





- The palatine tonsils are located between the palatoglossal arch (anterior pillar) and the palatopharyngeal arch (posterior pillar) of the soft palate.
- The palatine tonsil is one of the mucosa-associated lymphoid tissues (MALT), located at the entrance to the upper respiratory and gastrointestinal tracts to protect the body from the entry of exogenous material through mucosal sites.

Embryology

- The tonsils begin developing early in the third month of fetal life.
- They arise from the endoderm lining, the second pharyngeal pouch, and the mesoderm of the second pharyngeal membrane and adjacent regions of the first and second arches.

- **Boundaries :**

- superior constrictor (laterally)

- palatoglossal fold (ant)

- palatopharyngeal fold (post)

- fibrous capsule (medially)

- On the lateral surface, the tonsil has a thin distinct capsule, which is formed from condensation of pharyngobasilar fascia. This fascia extends into the tonsil itself, forming septa, which allow passage of nerves and vessels.

Vascular supply

- 1. Tonsillar artery
- 2. Ascending pharyngeal artery
- 3. Tonsillar branch of the facial artery
- 4. Dorsal lingual branch of the lingual artery
- 5. Ascending palatine branches of the facial artery

- ***Nerve supply***

The tonsils are innervated via tonsillar branches of the **maxillary nerve and the glossopharyngeal nerve**.

- ***Lymphatic supply***

Tonsils **do not possess afferent lymphatics**.

Efferent lymphatics drain directly to the jugulodigastric nodes and upper deep cervical lymph nodes and indirectly through the retropharyngeal lymph nodes.

Tonsillitis (peak age=3-7 ys)

- Tonsillitis is most commonly caused by a viral infection(50-80%.
- Rhino and adenoviruses mainly.
- the m.c bacteria is B-hemolytic streptococci (mainly pyogenes).
- Rarely bacteria such as *Neisseria gonorrhoeae*, *Corynebacterium diphtheriae*, or *Haemophilus influenzae* may be the cause

Tonsillitis

Individuals with acute tonsillitis present with the following:

- Sore throat.
- Dysphagia.
- Otolgia. (tympanic branch of IX nerve) • fever.
- Weakness & fatigability.
- Nausea.
- Poor appetite.
- Dehydration.
- Inflamed and swollen tonsils.
- Inability to open mouth completely.
- Hot potato sign.
- Enlarged Jugulodigastric lymph nodes.
- Drooling of saliva.
- Airway obstruction

Diagnosis

- Tonsillitis is a clinical diagnoses.
- For patients in whom acute tonsillitis is suspected to have spread to deep neck structures (ie, beyond the fascial planes of the oropharynx), radiologic imaging using plain films of the lateral neck or computed tomography (CT) scanning with contrast is warranted.

Tonsilitis

1. Follicular
2. Membranous
3. parenchymatous

Follicular tonsillitis:

- More common in **children.**
- Infection of the **surface of tonsil.**
- **White yellowish points.**
- **Pus leaking from its crypts.**



Parenchymatous tonsillitis:

- More common in **adults.**
- The whole tonsil will be **swollen.**
- Both tonsils might be meeting in the midline (**kissing tonsils**).

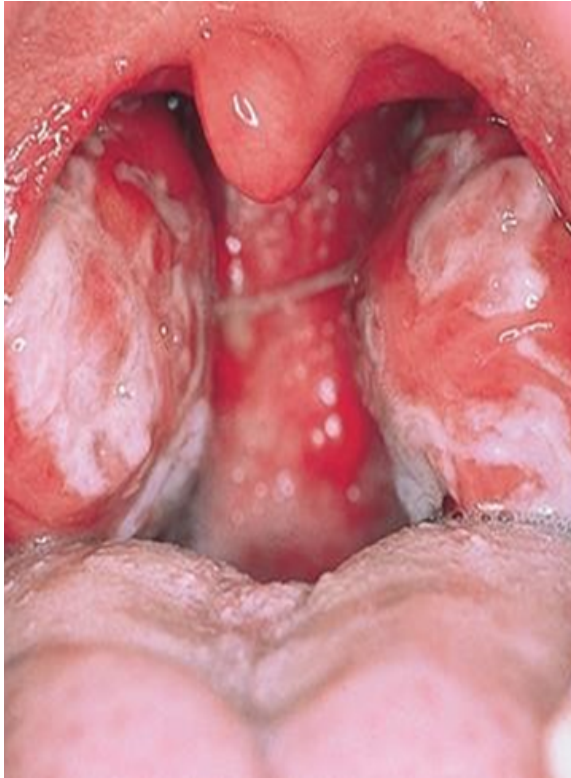


Acute membranous



acute membranous tonsillitis:

- It occurs due to **pyogenic organisms**. An exudative membrane forms over the medial surface of the tonsils, along with the features of acute tonsillitis, like red and swollen tonsils with marked hyperaemia of the pillars, uvula and soft palate.
- Ddx:
 1. **infectious mononucleosis.**
 2. **scarlet fever.**
 3. **diphtheria.**
 4. **Vincent angina**



1. Infectious mononeucleosis

- Caused by EBV.
- Sore throat not responding to abx for at least 1-2 wks.
- Pt will be obviously toxic.
- More systemic manifestations than tonsillitis.
- Hepatomegaly & jaundice in 10%.
- Splenomegaly in 50%.
- Very large jugulodigastric LN.
- Tonsils : dirty looking/ covered by a white membrane.
- Serology : heterophile abs (agglutinins to sheep and horse RBCs). (Monospot test)
- Blood film: atypical lymphocytes/ monocytes.

Treatment

- Symptomatic & supportive.
- Antibiotics : not essential but may be advised to prevent 2ry bacterial infx.
- Avoid ampicillin (skin rash in 10%). (rubelliform rash)
- Oral or systemic steroids may be given (in case of obstruction).



2. Scarlet fever

- Post streptococcal infection.
- Rash/ strawberry tongue.
- Children.

3. Diphtheria

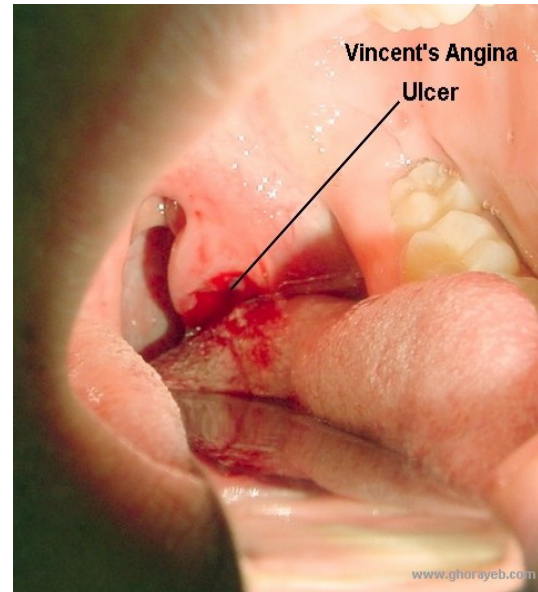
How to differentiate between diphtheria membrane and membranous tonsillitis?

- Color: grey in diphtheria/ white-yellow in tonsillitis.
 - Membrane is fixed in diphtheria.
 - Low fever in diphtheria.
 - The pt is more toxic in diphtheria.
- * treatment: antitoxins/ penicillin



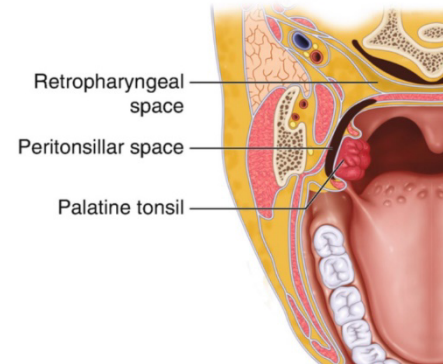
4. Vincent angina:

- Membranous pharyngitis.
- Painful ulcerations with edema and hyperemic patches.
- Spread of acute necrotizing ulcerative gingivitis to the pharynx.



Complications of tonsillitis:

1. Peritonsillar abscess (quinsy).
 2. Parapharyngeal abscess.
 3. Retropharyngeal abscess.
 4. Acute otitis media (most common). 5
- rheumatic fever.
- 6- poststreptococcal glomerulonephritis.

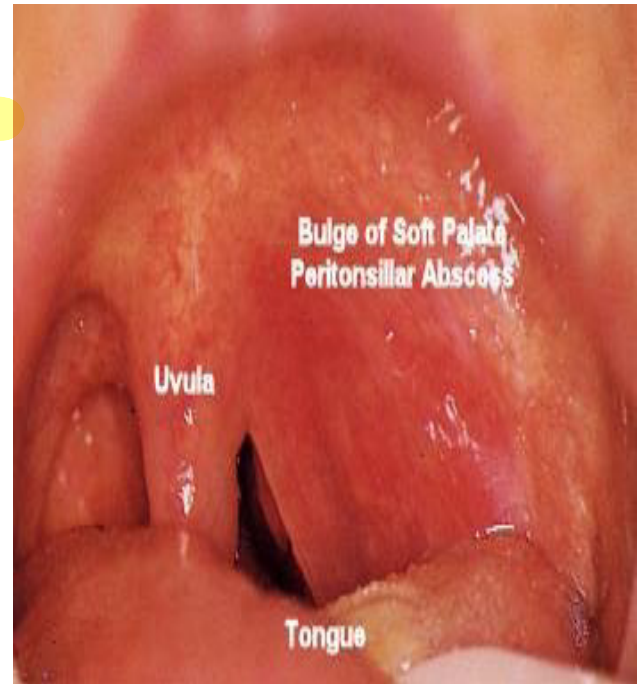


Peritonsillar abscess (quinsy)



1- peritonsillar abscess (quinsy):

- Accumulation of pus between tonsillar capsule and the lateral pharyngeal wall.
- Unilateral!
- Rare in the elderly.
- Usually preceded by an attack of tonsillitis in the last 1-2 weeks treated inappropriately.
- The affected tonsil will be pushed medially toward the midline with bulging above and lateral to it.
- Enlarged jugulodigastric LN.





Presentation:

1-Severe sore throat

2-Dysphagia

3-Very high spiking fever 4- Trismus

5- Inability to talk properly (hot potato voice)

6- Dehydration



Management:

- Admission.
- IV abx (crystalline penicillin, augmentin, benz penicillin or cephalosporins for 24-48 hrs).
- Followed by oral abx for 10 days.
- IV fluids, analgesia, antipyretics and mouth washes.
- Incision & drainage (dramatic improvement immediately).
- Tonsillectomy (after 6 wks of the 2nd attack).

* Other causes of quinsy: dental infections/ foreign bodies).

parapharyngeal abscess



2- parapharyngeal abscess:

- Boundaries of parapharyngeal space: laterally (deep lobe of parotid, the mandible, sternocleidomastoid muscle)/ medially (constrictors).
- Large swelling in the upper part of the neck.
- Pushing of the lateral pharyngeal wall and the tonsil medially.
- CT is the gold standard to differentiate from other causes of swelling.

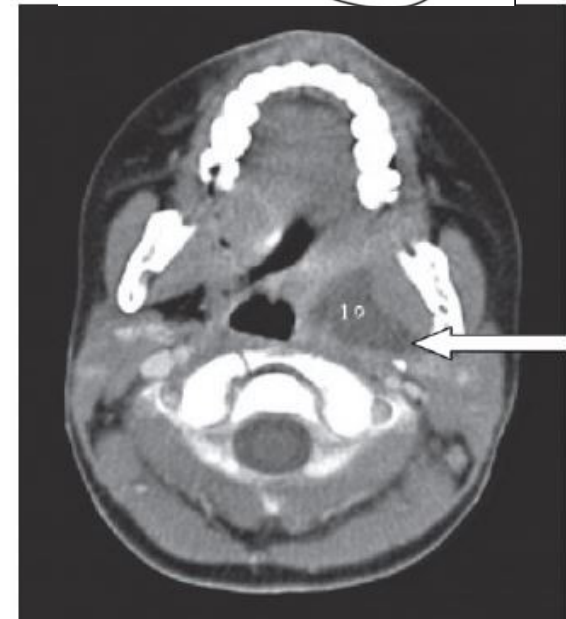
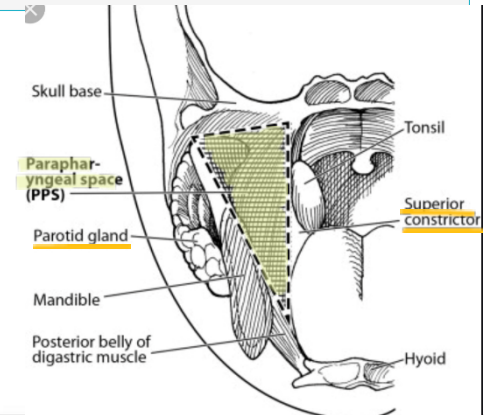


Fig.2. CECT scan showing left-sided parapharyngeal abscess (arrow) with airway compression (patient 13 in the Table).



Complications:

1-thrombosis of the internal jugular vein

2-carotid artery rupture.

3-injury to lower cranial nerves. 4-

mediastinitis.

5- septicemia.



Management:

- Admission.
- IV abx followed in 6-24 hrs by external drainage through a submandibular approach.
- Never try to put a needle intraorally.

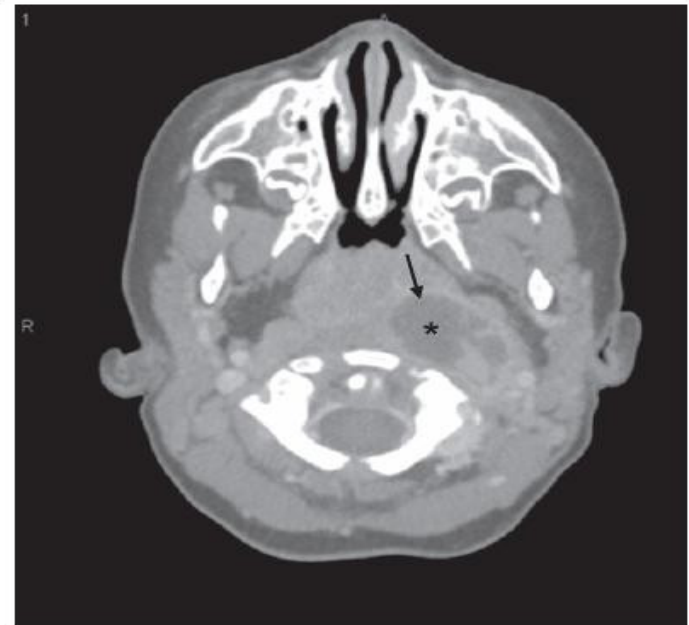
3- Retropharyngeal abscess



3- retropharyngeal abscess:

- M.C in children.
- Spinal cord involvement if left untreated.
- Management: IV abx followed by surgical drainage.
- In adults : chronic case is due to tuberculous disease of the spinal cord/ acute caused by a foreign body.

Figure 5. Contrast-Enhanced CT Scan Showing Retropharyngeal Abscess



Note the left sided abscess shown by asterisk within rim-enhancing (arrow).

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Unilateral tonsillar enlargement with gross asymmetry in adults is suspicious of neoplasia especially SCC or lymphoma. So we do excisional biopsy.



Management of acute tonsillitis:

1- Mild to Moderate cases :

- Oral Antibiotics for 10 days (Augmentin 375 mg/8 hrs or Penicillin 500 mg/6hrs)
- Analgesics
- Antipyretics
- Cephalosporins, septrin and ciproxin shouldn't be given as 1st choice.

2- Severe cases with toxic manifestations :

- Throat swab.
- Admission.
- IV Antibiotics for 24-48 hours followed by oral Antibiotics for 7-10 days.
(crystalline penicillin/ benz penicillin/ cefotaxim/ erythromycin).
- Analgesia ,Antipyretics (panadol).
- IV Fluids (2-3 L/day).
- Check Swab results and do Paul bunnel test if not improving after 48 hrs.

↓
for EBU



Tonsillectomy

Tonsillectomy

- Techniques :

1-dissection : used nowadays/ safe with minimal bleeding.

2-guillotine : outdated/ unsafe.

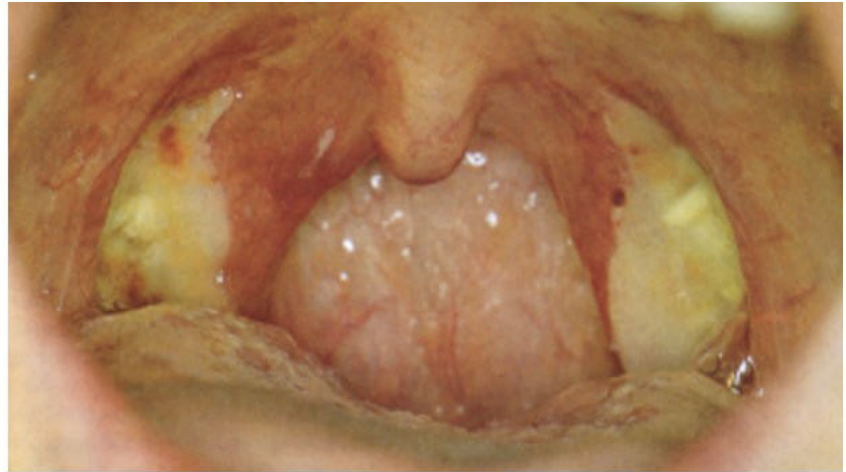
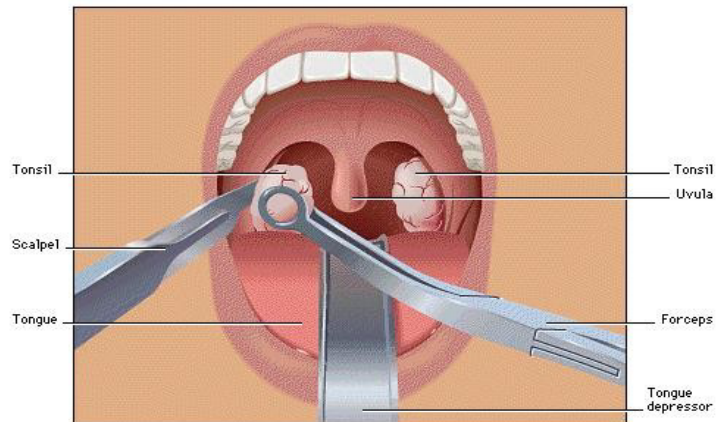


Fig. 4.62 **The tonsillar fossae following tonsillectomy.** These are covered with a white/yellow membrane for about 10 days until the fossae are epithelialized.





Absolute Indications:

1-Airway Obstruction (OSA)

2-Malignancy.

Relative indications:

1-Acute tonsillitis : >7 attacks in 1 year, >5 attacks/yr for 2 consecutive years, >3 attacks/ yr for 3 consecutive years

2 -Recurrent attacks of Acute otitis media(if tonsil is a focus).

3 -Part of Snoring and OSA surgery.

4 -Recurrent tonsillitis resulting in febrile convulsions.

5 2nd attack of quinsy.

6 Dysphagia and FTT.



Contraindications :

- 1 -Bleeding disorders
- 2 -Acute infection within the last 2-3 weeks (risk of septicemia and encephalitis)
- 3- cleft palate (as space inside oral cavity is wide and removing tonsils causes wider area and thus more difficulty in phonation / regurgitation.
- 4 -Oral contraceptives
- 5 -Younger than 3 years old (relative).



Pre-op management:

- You should make sure that patient doesn't have acute URTI or bleeding disorder.
- Correction of any anemia.

The operation:

- Under GA.
- Careful dissection & hemostasis is obtained by ligating the vessels.
- If the adenoids are to be removed, they are dealt with first.



Complications:

1-1ry bleeding (reactionary).

2 2ry bleeding.

3- injury to the uvula, soft palate, post pharyngeal wall.

4- dental damage.

5- tonsillar remnants.

6- infection (tonsillar bed infection, otitis media or pneumonia).

7- temporo-mandibular joint dislocation.



1ry bleeding (reactionary):

- 1st 24 hrs.
- Contributing factors :
Rising BP after recovery/ slipping of the loose ligatures/ bleeding disorder/ inexperienced surgeon.
- Management:
hemodynamic assessment/ good hydration/ blood transfusion if needed/ correct bleeding disorder



2ry bleeding:

- After 1 week.
- Underlying cause: infection.
- Management: admission/ IV abx.
- Usually Stops spontaneously.
- Intraop mgt of bleeding if conservative management failed

*bleeding problems more in adults because tonsillectomy is more difficult due to fibrosis btw the tonsil and the lateral pharyngeal wall due to past infections.

Pharyngitis



Acute

1- simple : caused by cold air, fumes.
(sx: irritation with odynophagia)

2- infective : caused by **viral or streptococcal infx.**
(sx: more severe odynophagia with lymphadenopathy)

chronic

1- endogenous: caused by **post nasal drip and GERD.**
2- exogenous: caused by **smoking and chronic dental sepsis.**

atrophic / hypertrophic

Sx: **sore throat/ red & congested pharynx.**





Management:

- 1 acute : mainly symptom relief with the use of abx.
- 2 chronic: to treat the cause (GERD, dental sepsis...).

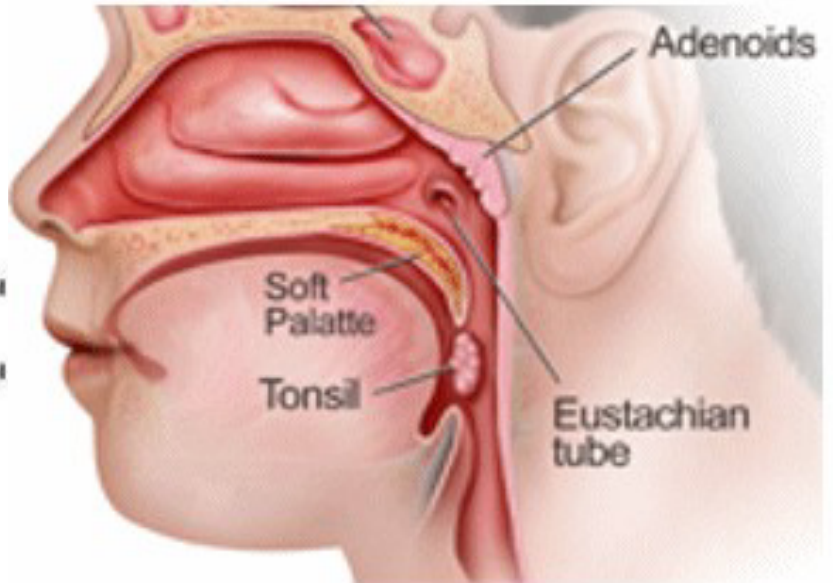
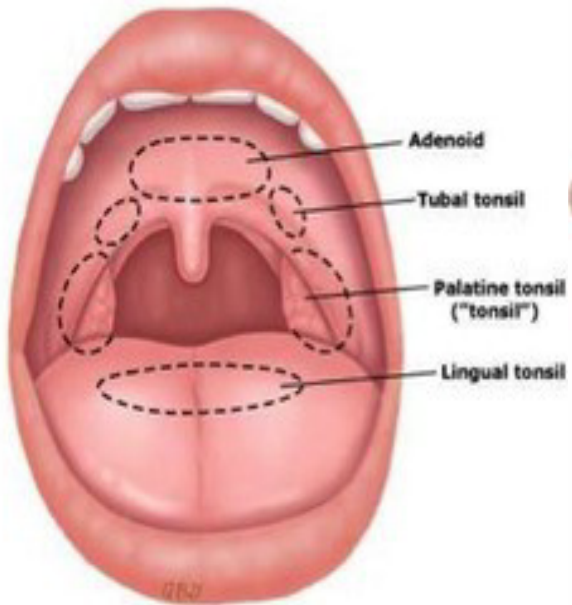
Chronic pharyngitis	Chronic tonsillitis	
Continuous sore throat.	Repeated attacks of acute tonsillitis.	history
Hypertrophy in the lateral part of the pharyngeal wall.	<ul style="list-style-type: none">- Distorted tonsils with multiple scars.- The anterior pillar is red and congested.	Physical exam




Acute tonsillitis	Acute pharyngitis	
70%	>90%	Viral cause
localized	diffused	inflammation
	Most common & important symptom.	Dysphagia

Adenoiditis





- 
- Pharyngeal tonsils.
 - B-lymphocytes.
 - Part of Waldeyer's ring.
 - At the junction of the roof and the posterior wall of nasopharynx.
 - Maximum size at 3-7 years.
 - Starts regression after the age of 9-11 years.

Clinical picture

mainly due to 2 factors:

1- Large sized adenoids relative to nasopharynx :

-Nasal obstruction : mouth breathing , snoring , sleep apnea , hyponasal speech , nasal discharge/ difficulty in feeding infants.

-Eustachian tube obstruction : decreased hearing , recurrent AOM.

2- Focus of inf. That can spread to nose , throat & ear.

Adenoid faces (frog face):

- Open mouth.
- Protruded frontal teeth.
- Hard palate.





Adenoidectomy:

Indications:

- 1-Nasal Obstruction
- 2-Otitis media with effusion
- 3- Recurrent acute OM
- 4 Chronic Rhinosinusitis
- 5 Sleep Apnea

Contraindications: As for

tonsillectomy



Complications of adenoidectomy:

1-Bleeding.

2-Soft Palate damage.

3-Dislocation of the cervical spine (Grisel syndrome)).

4- Eustachian tube stenosis (late).

5-Hypernasal speech (nasopharyngeal incompetence).

6-Recurrence (usually due to incomplete removal in the 1st operation).

Thank you



