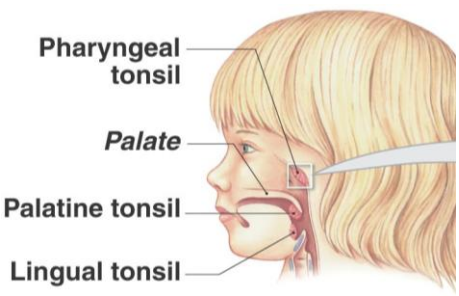
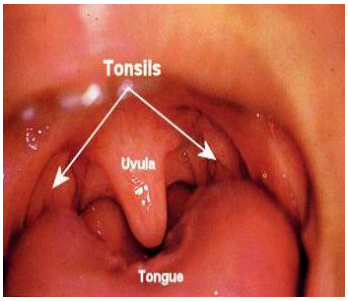
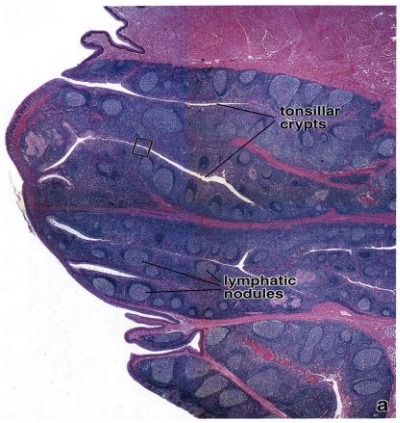
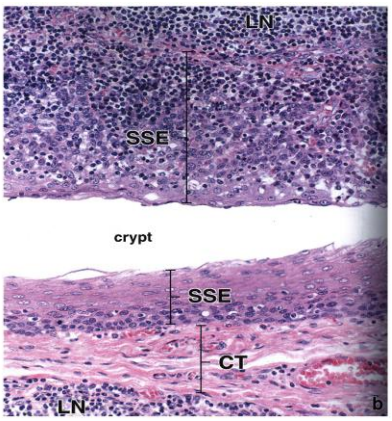
- **Anatomy and histology of tonsils:**
  - Palatine tonsils (showed in the picture) develop from the 2nd pharyngeal pouch and they are located in the tonsillar sinuses on each side of the oropharynx.
  - Tonsils are lymphoid swellings of the mucosa forming an interrupted circle (not complete) know as Waldeyer's ring.





  - **Waldeyer's ring is an interrupted circle of protective lymphoid tissue in the upper ends of the respiratory and alimentary tracts consisting of:**
    - ✓ Pharyngeal tonsils: which are located in the nasopharynx and also known as adenoids.
    - ✓ Tubal tonsils: around the openings of the auditory tube.
    - ✓ Palatine tonsils: located on either side of oropharynx → they lie in the tonsillar sinus which is formed between the palatoglossal and the palatopharyngeal arches.
    - ✓ Lingual tonsil: located under the mucosa of the posterior third of the tongue.
  - **Histology of palatine tonsils:**
    - ✓ They are a component of mucosal-associated lymphoid tissue (MALT).
    - ✓ MALT:
      - ❖ They include tonsils, appendix (GIT), peyer's patches (40 follicles, 1cm wide, in the ileum) and lymphoid nodules in the walls of the bronchi (respiratory tract).
      - ❖ So it functions in protecting the GIT and respiratory system from foreign matters.
    - ✓ Epithelium: stratified squamous non-keratinized epithelium → which dips into the underlying connective tissue to form 12-15 tonsillar crypts. The walls of the crypts contain numerous lymphoid follicles many of them with germinal centers.

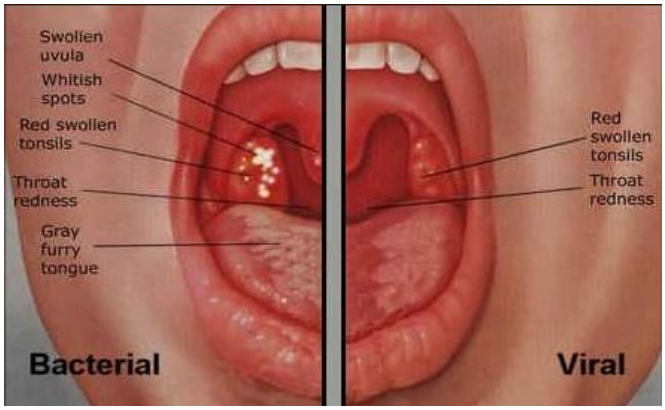




- **Tonsillitis:**
  - **Definition and etiology**: it is inflammation of the tonsils mainly due to infection by the following organisms:
    - ✓ Viral: adenovirus, influenza virus, parainfluenza virus and EBV.
    - ✓ Bacterial: S.pneumoniae, H.influenzae and GABHS.
    - ✓ Fungal: Candida albicans, Aspergillosis (especially in immunocompromised patients).

- **What are the clinical features of a patient presenting to the hospital with tonsillitis?**
  - ✓ Fever with generalized body ache and malaise.
  - ✓ Throat pain.
  - ✓ Dysphagia/odynophagia.
  - ✓ Patient is nauseated without vomiting.
  - ✓ Dehydration (which is especially seen in children and neonates).
  - ✓ Hemorrhagic tonsillitis (shown in the image below and is uncommon).

- **Physical examination:**
  - ✓ <u>KEEP IN YOUR MIND THAT YOU MUST DO FULL ENT EXAMINATION FOR A PATIENT PRESENTING WITH SUCH SYMPTOMS. DO NOT RELY ONLY ON EXAMINATION OF THE THROAT):</u>
    - ❖ *Check larynx and vocal cords*: patient might have laryngeal cancer!
    - ❖ *Examine the ears*: patient might have otitis media.
  - ✓ <u>Examination of tonsils:</u>
    - ❖ They will be inflamed/congested (the normal mucosa of oral cavity is PINK in color. When tonsils are congested, the color will change to RED).

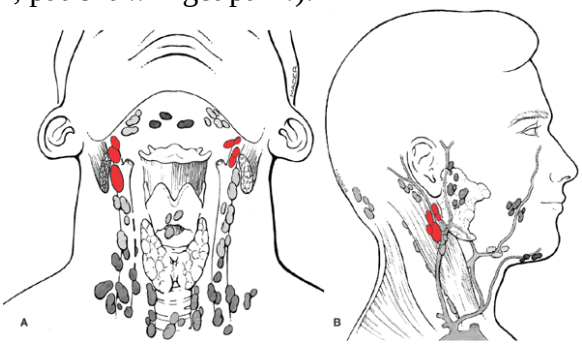


    - ❖ Sometimes, if patient is not treated within 3-4 days, you might find exudates (pus) accumulating over the crypts of tonsillar surface (this is known as follicular tonsillitis which has a strawberry-like appearance).
    - ❖ In a severe form, this condition might convert to membranous tonsillitis.

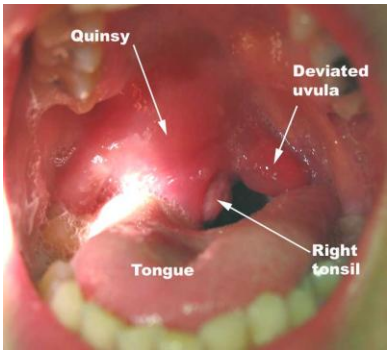

FOLLICULAR TONSILLITIS


MEMBRANOUS TONSILLITIS

- With palpation of the neck, there will be enlarged lymph nodes → jugulodigastric lymph nodes (they mainly drain the tonsils and just by pressing them, patient will get pain!).



- **What are your differential diagnoses for a patient presenting with similar clinical features?**
  - ✓ Tonsillitis.
  - ✓ Diphtheria (characterized by the presence of greenish membrane over the tonsils).
  - ✓ Infectious mononucleosis (which is caused by EBV).
  - ✓ Leukemia (notice that if you consider it as a differential diagnosis, you must do abdominal examination so you don't miss splenomegaly).
- **Management:**
  - ✓ ABC: Airway (make sure there is no obstruction), Breathing, Circulation (remember fluids are important especially in children/neonates who will have dehydration).
  - ✓ CBC (look for leukocytosis), electrolytes, FBS and random blood sugar (if patient is diabetic) and swab culture (if discharge is present over the tonsils).
  - ✓ Decision for admitting patient to the hospital: he can be managed as outpatient if his general condition is stable, has low-grade fever and able to take oral medications, otherwise you have to admit him.
- **What are the complications of acute tonsillitis?**
  - ✓ Airway obstruction.
  - ✓ Sepsis.
  - ✓ Dehydration.
  - ✓ Abscess formation:
    - In this case, patient will complain of trismus (unable to open his jaw) and with physical examination there will be unilateral bulging on the affected tonsil with shifting of uvula to the other side.
    - *Diagnosis*: intra-oral sonography, CT-scan or needle-aspiration (which is considered to be invasive).
    - *Management*:
      - Drainage: by needle aspiration or incision using a local anesthetic spray. Notice that drainage is followed by IV antibiotics.



- **When is tonsillitis considered to be chronic?**
  - ✓ 3-4 attacks/ year (for 4 years).
  - ✓ 5-6 attacks/year (for 2 years).
- **What are the indications of tonsillectomy?**
  - ✓ Airway obstruction (especially during sleep) due to enlarged tonsils.
  - ✓ Hemorrhage.
  - ✓ Frequent attacks of otitis media (especially in children).

- ✓ Malignancy (mostly adults, smokers, alcoholics complaining of ulcers over the tonsils which do not heal with usual management. Notice that diagnosis is confirmed by biopsy by removing the whole tonsil and it is recommended to do it bilateral).
- ✓ Tonsolith (presence of a stone in the tonsil): it is following the theory of inoculation. If the stone is small and ASYMPTOMATIC, management is conservative, otherwise you do tonsillectomy.
- ✓ Halitosis (but might not subside after tonsillectomy because there are many other causes leading to this condition).