

Trauma and foreign body I and II

➤ Nose:

➤ *Nasal Trauma:*

❖ *Manifestations of nasal trauma:*

- Fracture nasal bone and swelling over the nasal bridge
- Septal injury
 - Displacement
 - Hematoma
 - Perforation
- Nasal blockage (difficulty in breathing)
- Synechia (adhesion)
- CSF rhinorrhea → the roof of the nose is forming the base of the skull, so if there is fracture there will be CSF rhinorrhea
- Epistaxis (bleeding), it is the main complaint from the patient.

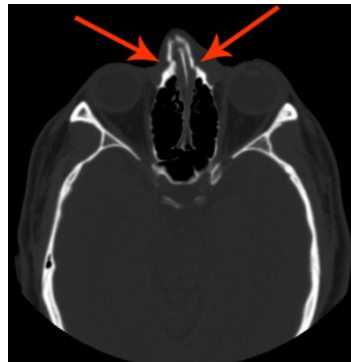
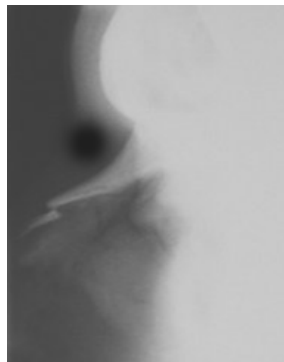
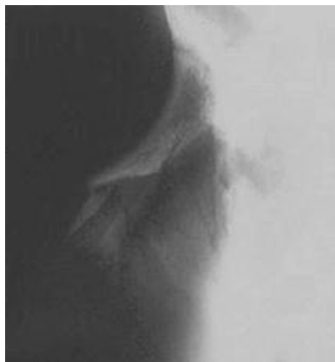
❖ *Physical Examination*

- Redness of the face
- If you see the patient starts with ATLS → A, b, c, d.
- To detect nasal deviation you have to exam the patient from above of his head and from lateral side looking to the nose.



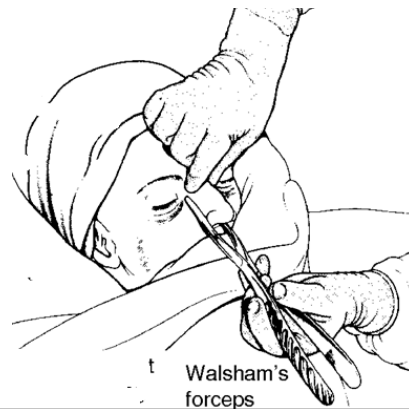
❖ *Radiology:*

- Usually is not necessary because treatment depends on the clinical findings
- Only in medico-legal point of view we do x-ray to documented



❖ **Treatment:**

- Proper assessment of the “shape” of the nose (you may wait “few” days for the edema to subside)
- No deformity → No treatment
- Deformity:
 - Reduction if presented early
 - Rhinoplasty if presented late → correct “old” fractures
- If there is deviation → immediate correction
- If there is swelling → you have to wait until the edema sub-size, then check if there is deformity or not
- For reduction:
 - Palpate the maxilla, frame of the orbit and zygoma
 - It maybe not a single fracture
 - Then push the deviation to the against side



It use to dis-impact the impacted part after it we blaster the nose

➤ **Nasal Septum Injury:**

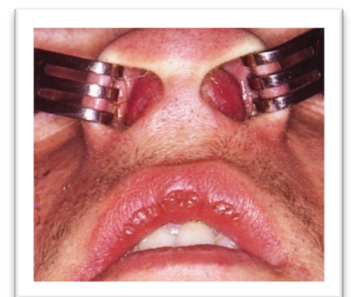
❖ **Displacement of nasal septum:**

- No symptoms: no treatment
- Symptomatic
 - Early presentation: Reposition
 - Late presentation: Septoplasty
- Not all deformity we treat it unless it cause problem to the patient and functionally it not cause any problems.



❖ **Septal hematoma:**

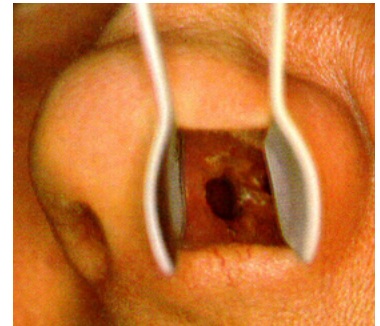
- It located between perichondrium and cartilage (subperichondrial collection of bleeding)
- Usually the patient complained of breathing problems
- In palpation it cystic , if it is hard it will be deviation



- ***Complications of Septal hematoma:***
 - Necrosis of the cartilage
 - ♦ Deformity
 - Infection
 - ♦ Septal abscess
 - ♦ Spread to the intracranium
 - The nutrition of the cartilage is coming from perichondrium, so if there is hematoma the cartilage will lack its nutrition ending with necrosis then deformity of nose “saddle nose”
- ***Treatment of septal hematoma:***
 - **Immediate** incision & drainage

❖ ***Traumatic septal perforation:***

- Mostly due to surgical trauma (Septoplasty or submucosal dissection)
- May be due to self-inflicted trauma

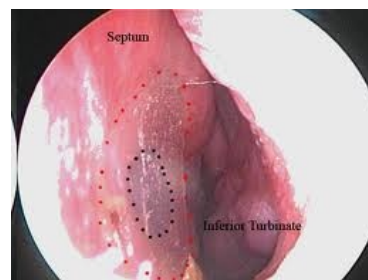
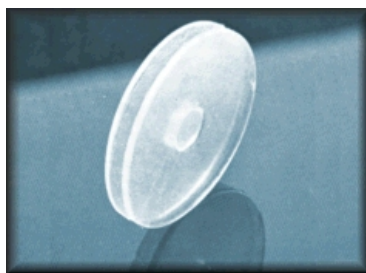


▪ ***Symptoms:***

- Usually No symptoms
- Whistling sound during breathing
- Crusting and epistaxis

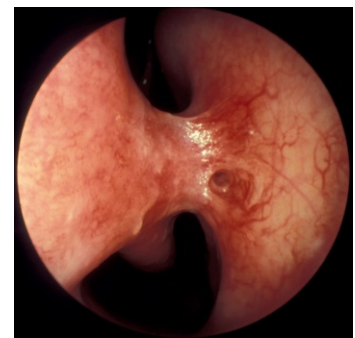
▪ ***Treatment:***

- No pain no treatment
- Nasal wash in case of Crust.
- Surgical repair by:
 - ♦ Insertion of silicon “button”
 - ♦ Or performing a flap from lateral nasal wall to the septum



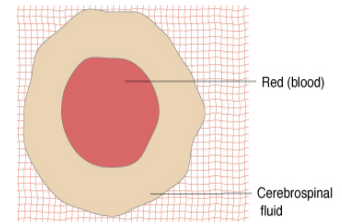
❖ ***Synechia:***

- Usually follow surgery
- If symptomatic, treatment is by division and insertion of silastic sheets (for 10 days)
- It means adhesion between the septum and lateral nasal wall, it may be due to trauma or after surgery



➤ **CSF Rhinorrhea:**

- ❖ Due to injury of the roof of the nose and the dura
- ❖ Unilateral watery rhinorrhea increases by bending forward, exertion and coughing
- ❖ Halo sign
- ❖ Diagnosis is confirmed by biochemical analysis (Beta-2-transferrin) and by radiology
- ❖ Most cases resolve with conservative treatment
- ❖ Surgical repair may be needed in minority of cases



❖ **Complications of CSF Rhinorrhea:**

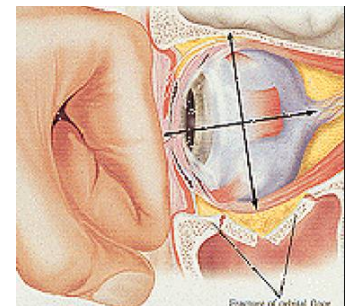
- Meningitis
- Tension pneumocephalus
 - Because of the air going from his nose



➤ **Sinus Trauma**

❖ **Blow-out fracture**

- Injury to the orbital floor (maxillary sinus roof) due to blunt trauma to the orbit
- The pressure always goes to the weaker point which is the floor
- Periorbital fat is the first thing pass through the fracture to the maxillary sinus



❖ **Physical examination:**

- Enophthalmos
- Subconjunctival hge
- Diplopia and restriction of upward gaze
- In palpation you can pick up the fracture
- Enophthalmos: the affected eye became smaller than the other eye and it get inside
- Subconjunctival hemorrhage
- Diplopia and restriction of upward gaze: because the restriction of the inferior rectus muscle, the patient cannot look upward



❖ **Radiology**

- some of the orbital content get inside the maxillary sinus "Tear-drop sign"



❖ **Treatment:**

- Repair the fracture : support the floor, external incision on the lower margin of the orbit, elevate the content of the orbit then support it with dural tissue until there is complete of healing of the roof of the sinus

➤ ***Foreign Bodies:***

- ❖ May be asymptomatic
- ❖ Unilateral nasal obstruction
- ❖ Bad odor blood stained unilateral nasal discharge
- ❖ The nose is a common place to have foreign body especially in children
- ❖ Unlikely the foreign body be bilateral
- ❖ It may cause irritation, sneezing, infection, unilateral bad smell

❖ ***Examination:***

- If it resents = laceration

❖ ***Radiology***

- Not in all conditions we do x-ray, If the symptoms are clear but we cannot see the foreign body then we do x-ray



❖ ***Treatment:***

- Removal (general anesthesia may be needed)
- Disc batteries removal is an emergency because of severe necrosis due to release of NaOH, KOH, & mercury
- If it's deep in the children, you do general anesthesia

➤ ***Ear:***

➤ ***Trauma to the Auricle:***

- ❖ It has two conditions:
 - Laceration
 - Hematoma auris → between the cartilage and perichondrium



❖ ***Complication:***

- Cauliflower ear

❖ ***Treatment:***

- Make incision, drainage then apply pressure to prevent accumulation of hematoma



➤ ***FBs external canal:***

❖ ***To remove it :***

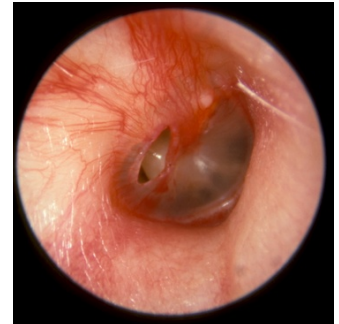
- Full cooperation from the patient; otherwise go to general anesthesia
- Disc batteries are emergency
- Live insects to be killed or float out
- Removal by : syringing and/or by instrumentation

➤ ***Traumatic TM Perforation:***

- ❖ The patients complain of pain and hearing loss

❖ ***Treatment:***

- Observation
 - Most cases heal spontaneously
 - No suction, no drops & no water
- Elective myringoplasty

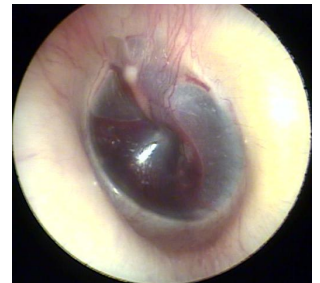


➤ ***Middle ear trauma:***

- ❖ The trauma in the middle ear called ***hemotympanum*** which is bleeding in the middle ear cavity

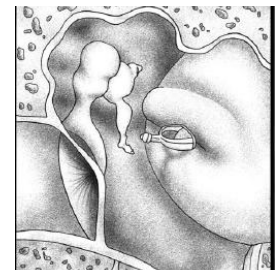
❖ ***Treatment:***

- Observation
 - Most cases resolve spontaneously



➤ ***Traumatic Ossicular disruption:***

- ❖ Causes conductive hearing loss
- ❖ Incus-stapes is the commonest location of trauma
- ❖ Treatment is by surgical repair



➤ ***Otitic barotrauma:***

- ❖ An injury produced in the middle ear caused by negative pressure in the middle ear due to Eustachian tube dysfunction during increase in the atmospheric pressure
- ❖ It occurs during flying when the aircraft is descending or during diving.
- ❖ The symptoms are pain, deafness.

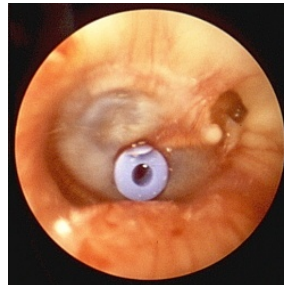
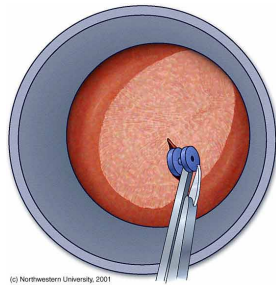
❖ ***Examination:***

- Detachment of tympanic membrane
- Air bubbles due to accumulation of transudate

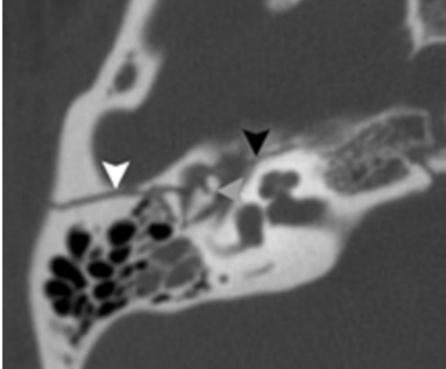
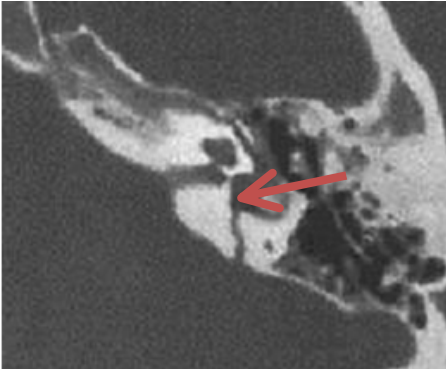


❖ ***Treatment:***

- Prophylactic
- Decongestant, analgesic and auto inflation (Valsalva maneuver)
- Myringotomy and VT insertion



➤ ***Temporal Bone Fracture:***

<i>Longitudinal fracture</i>	<i>Transverse fracture</i>
70% of temporal bone fracture	20% of temporal bone fracture
Conductive hearing loss (rupture drum, hemotympanum or ossicular disruption)	SNHL & vertigo (Labyrinthine injury)
Facial nerve paresis is not common	Facial nerve paralysis is common
	

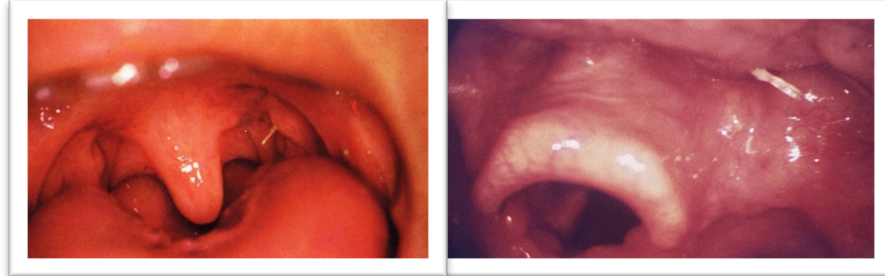
❖ ***Manifestation:***

- Battle sign (redness behind the auricle)
- TM perforation
- Hemotympanum
- CSF otorrhea or rhinorrhea
- Ossicular disruption
- SNHL
- Vertigo
- Facial nerve paralysis



➤ **FB pharynx:**

- ❖ Usually sharp FB
- ❖ Fish bone is the most common FB
- ❖ Common sites: tonsils, base of tongue and vallecula (the area between base of tongue and epiglottis)
- ❖ Diagnosis is by physical examination



➤ **FB esophagus:**

- ❖ Coins – 75%
- ❖ Meat, dentures, disc batteries etc.
- ❖ Esophageal anomalies found in patients with recurrent impactions
- ❖ **Common locations "IMP":**
 - Cricopharyngeus (most common)
 - Aorta/left mainstem bronchus
 - Gastroesophageal junction
- ❖ **Diagnosis**
 - **Symptoms**
 - Dysphagia, odynophagia, choking & cough
 - **Physical exam**
 - Drooling, refuses oral intake
 - **Radiology**
 - Always AP and lateral
 - **Esophagoscopy**
- ❖ **Treatment:**
 - Removal via esophagoscopy
 - Disc batteries and sharp objects removal is an emergency because of the risk of perforation

➤ **Larynx:**

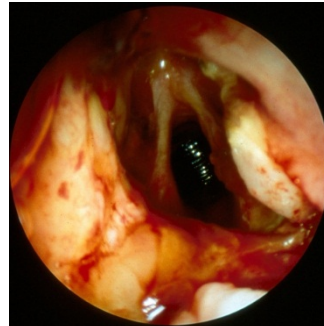
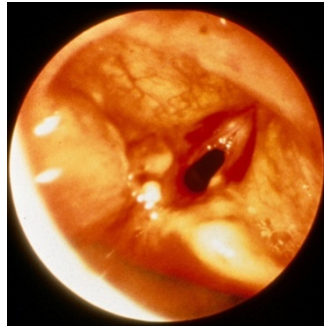
➤ **Laryngeal Trauma:**

- ❖ **Physical exam:**
 - Stridor
 - Hoarseness
 - Subcutaneous emphysema
 - Hemoptysis
 - Laryngeal tenderness, ecchymosis, edema



❖ **Laryngoscopic Exam:**

- Patient with mild trauma → small bilateral hematomas.
- Patient with more significant trauma → blood in the airway and exposed cartilage.



❖ **Treatment:**

- Tracheostomy if there is respiratory distress or bleeding
- Explore and repair

➤ **Foreign bodies of the larynx:**

❖ **Symptoms:**

- Dyspnea
- Cough
- Hoarseness or aphonia

❖ **Treatment:**

- Heimlich Maneuver (adult):

Heimlich Maneuver



1. Lean the person forward slightly and stand behind him or her.



2. Make a fist with one hand.



3. Put your arms around the person and grasp your fist with your other hand near the top of the stomach, just below the center of the rib cage.



4. Make a quick, hard movement, inward and upward.

- Slapping the back with the patient's head down (pediatrics)

Place the infant stomach-down across your forearm and give five quick, forceful blows on the infant's back with heel of your hand



- Manual removal
- Removal by laryngoscopy
- Tracheostomy or laryngostomy (cricothyrotomy)

➤ ***FBs in the tracheobronchial tree:***

- ❖ Usually in infants and children
- ❖ Most FB's are organic material (mostly food derivatives)
- ❖ Location: Mostly in the right side (60%)
- ❖ ***Clinical Presentation:***
 - Choking, cough, gagging & cyanosis
 - Caused by laryngeal reflexes
 - Asymptomatic phase
 - Due to fatigue of cough reflex
 - Wheeze, intractable cough, persistent or recurrent chest infection.
 - Due to emphysema, atelectasis or infection
- ❖ ***Treatment:***
 - To be initiated on clinical suspicion
 - Bronchoscopy: in most cases
 - Bronchotomy
 - Pulmonary resection

