

TRAUMA AND F.B. I

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- Auricular Hematoma
- Auricular Lacerations
- auricle Avulsions
- Keloid scars
- frostbite

Trauma of the External Ear



Auricular Hematoma

- Following Blunt trauma to the side of the head
 - Contact sports, child abuse may be suspected
 - Shear injury at anterior auricular skin
- Skin of the pinna is tightly bound to the perichondrium of the underlying elastic cartilage.
- Cartilage nutrition depends on the perichondrium
- Hematoma





○ Hematoma

- collection of blood Between cartilage/ perichondrium
- The cartilage is then deprived of its blood supply
- The ear will be soft and boggy anteriorly with a loss of conchal contour
- Fluctuant anterior ear swelling

Hematoma

Auricular Hematoma

Right Auricular Hematoma

○ Treatment

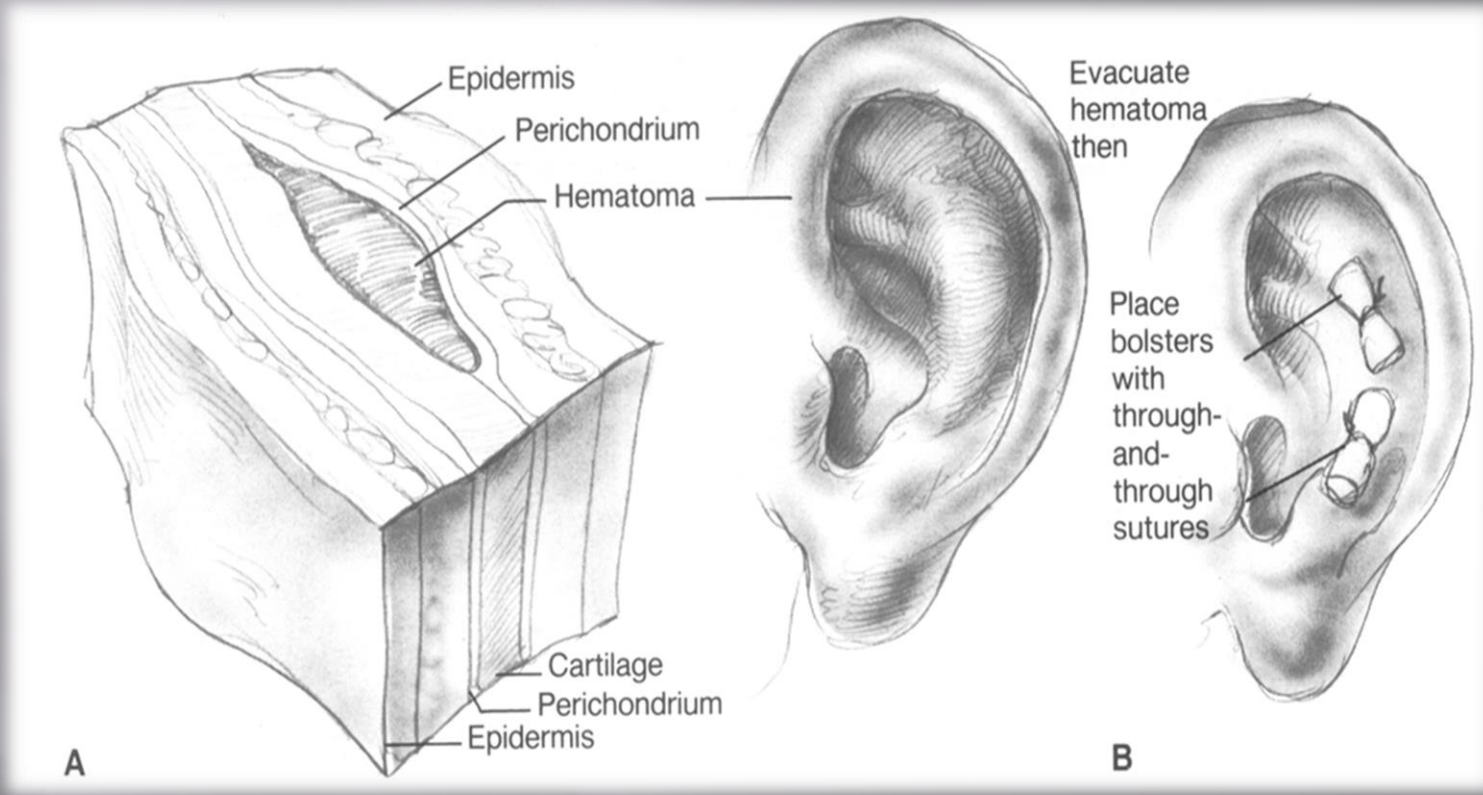
- Needle aspiration inadequate
- Incision & drainage recommended
- Compressive dressing
- Antistaphylococcal antibiotics

○ Complications

- Infection/ abscess
- “Cauliflower”

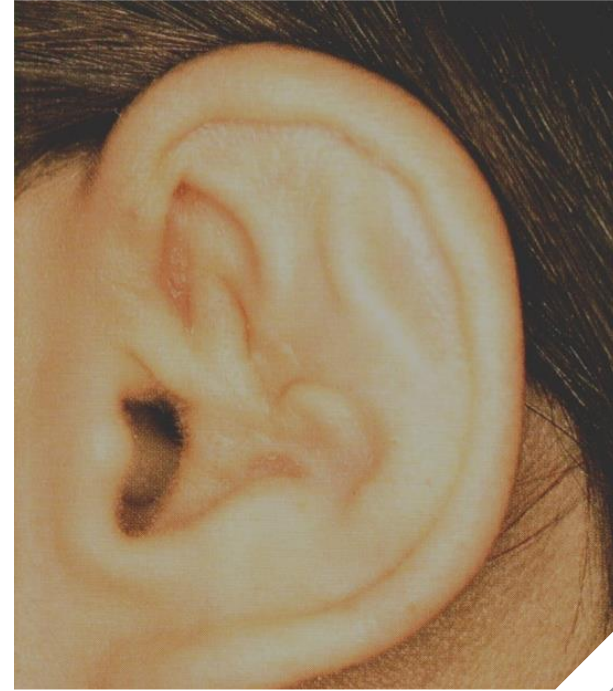
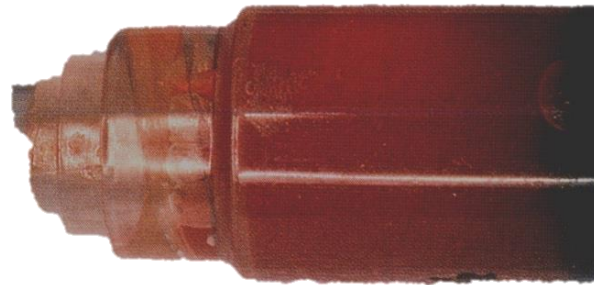


Auricular Hematoma Treatment



Incision & Drainage with Bolsters

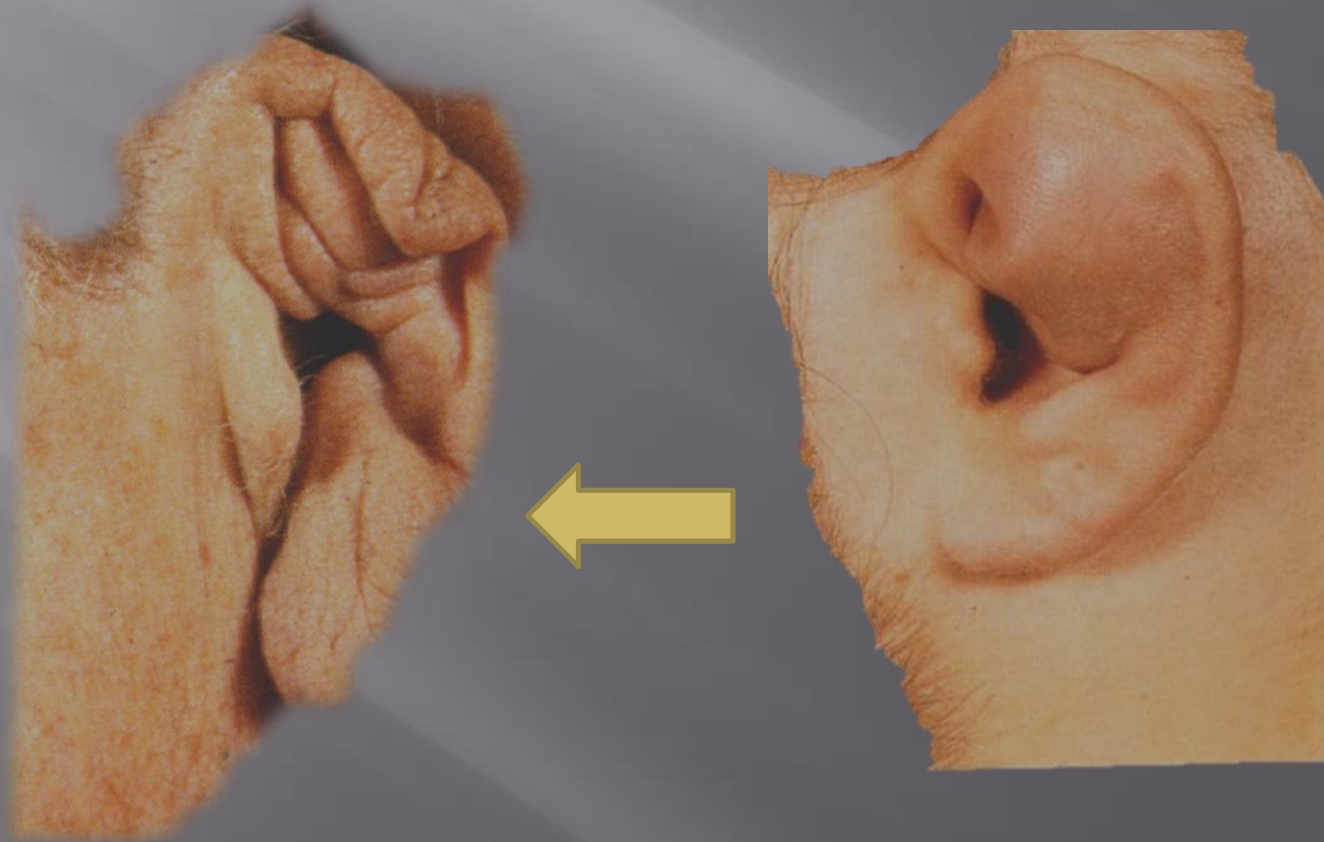
“Cauliflower” Ear



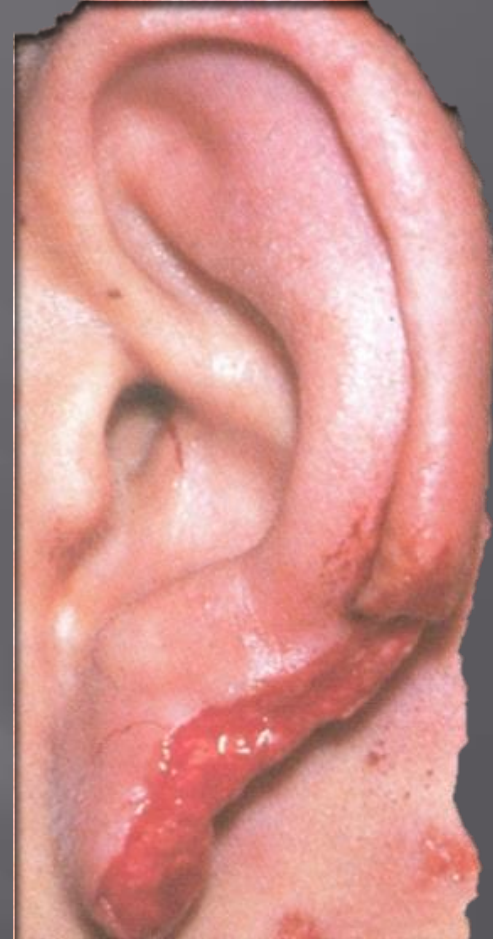
Needle aspiration is usually inadequate because recollection is common

***Repeated Aspiration* -->
seroma or super infection , leading to perichondritis**

- "cauliflower ear" resulting from abnormal cartilage formation and scarring after auricular hematoma.



- ▣ The pinna has an Excellent blood supply
- ▣ Suturing severe laceration & any avulsed tissue
- ▣ Exposed Cartilage should be trimmed & back before closing the skin.
- ▣ Human Bites: Perichondritis may be prevented by dressing the wound & delaying primary closure for 2-3days



LACERATIONS



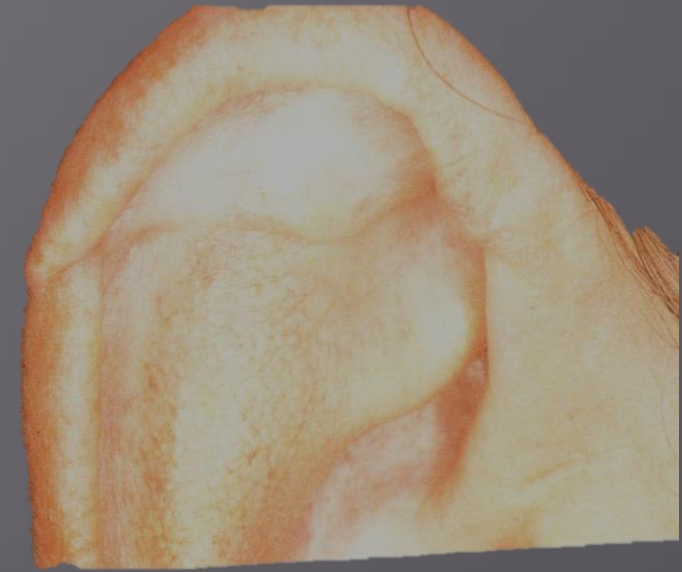
- The Ear lobe: my split by avulsion of an ear ring.
- repaired by a stepped incision with a suture loop to reconstruct the hole.

- Laceration:
 - Primary closure
 - the duration of Antibiotic : Degree of contamination
- Comprehensive Laceration (cartilaginous & skin):
 - wound debridement
 - close the wound
 - antibiotic

treatment

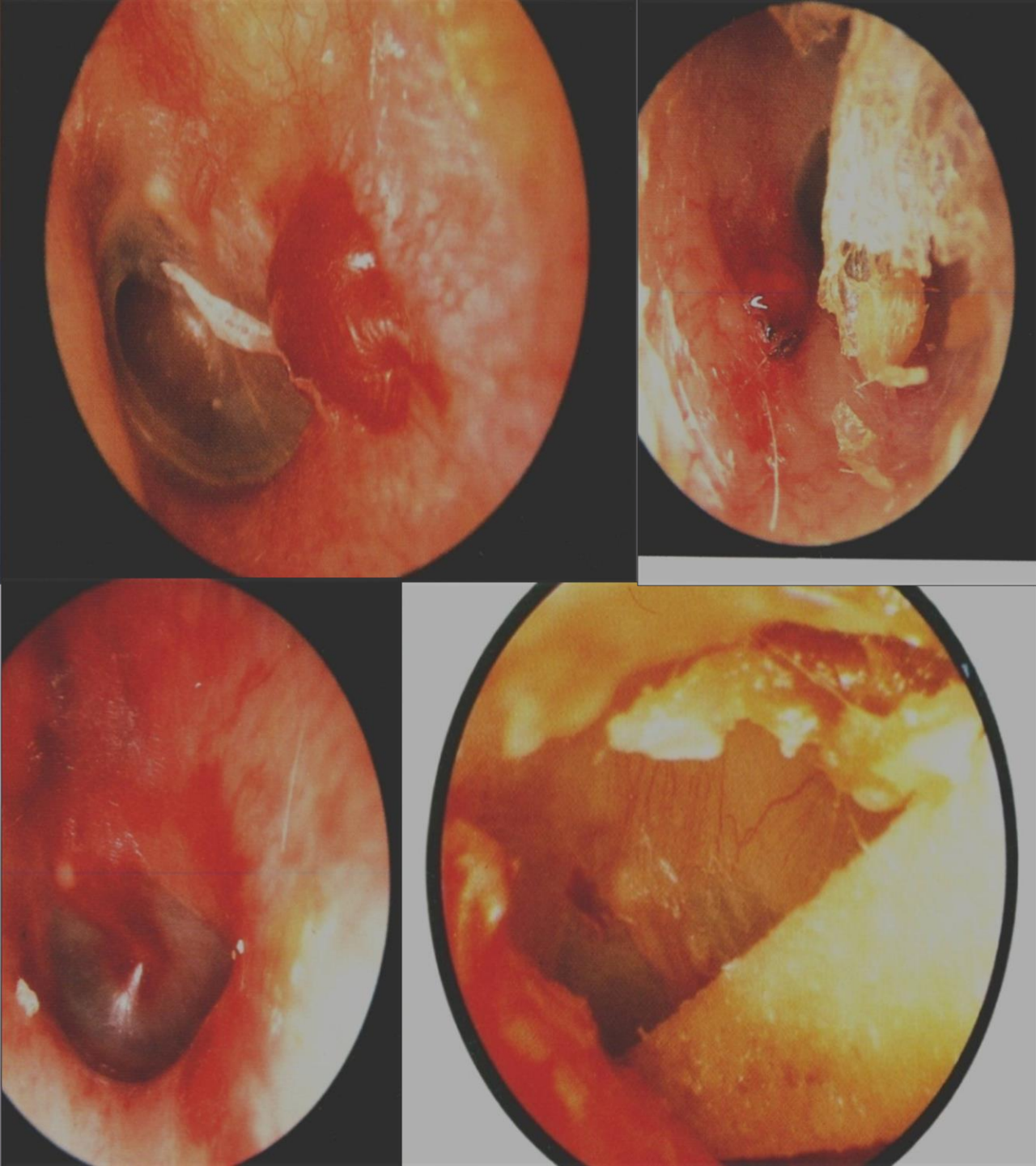


- Replantation of partial avulsion
- 8 hours ischemia periods are allowing the grafting
- Plastic reconstruction is necessary.

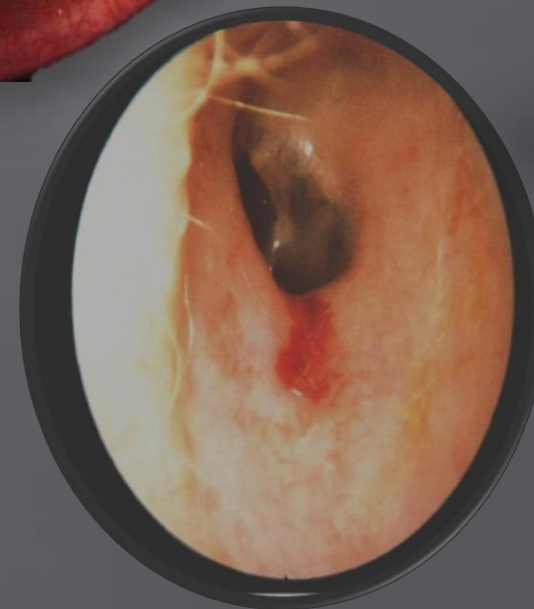
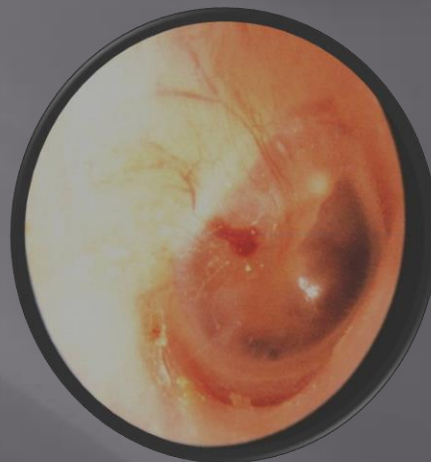
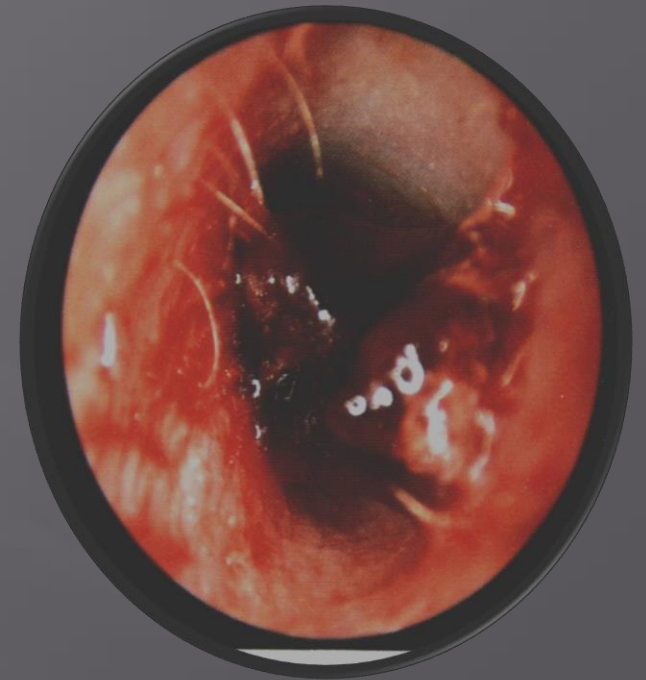
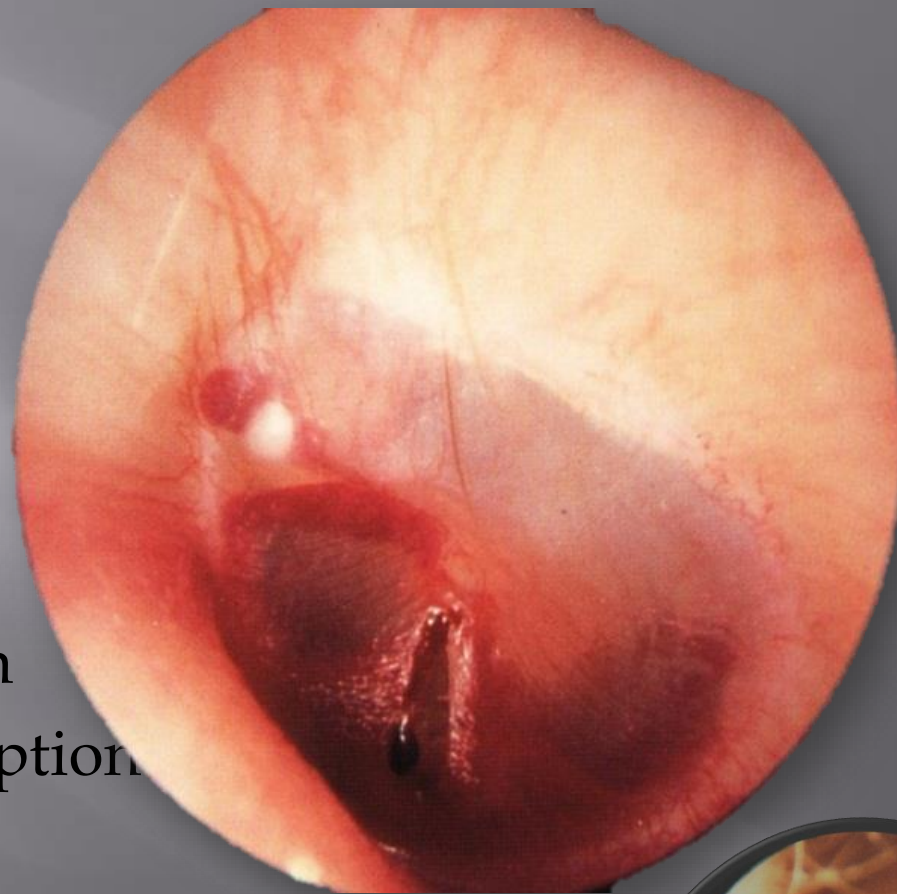


Injuries to the external meatus

- ▣ Insertion of FB
- ▣ using matchstick to clear wax is common
- ▣ Incorrect Insertion of a syringe for dewaxing
- ▣ bad performance of Aural suction

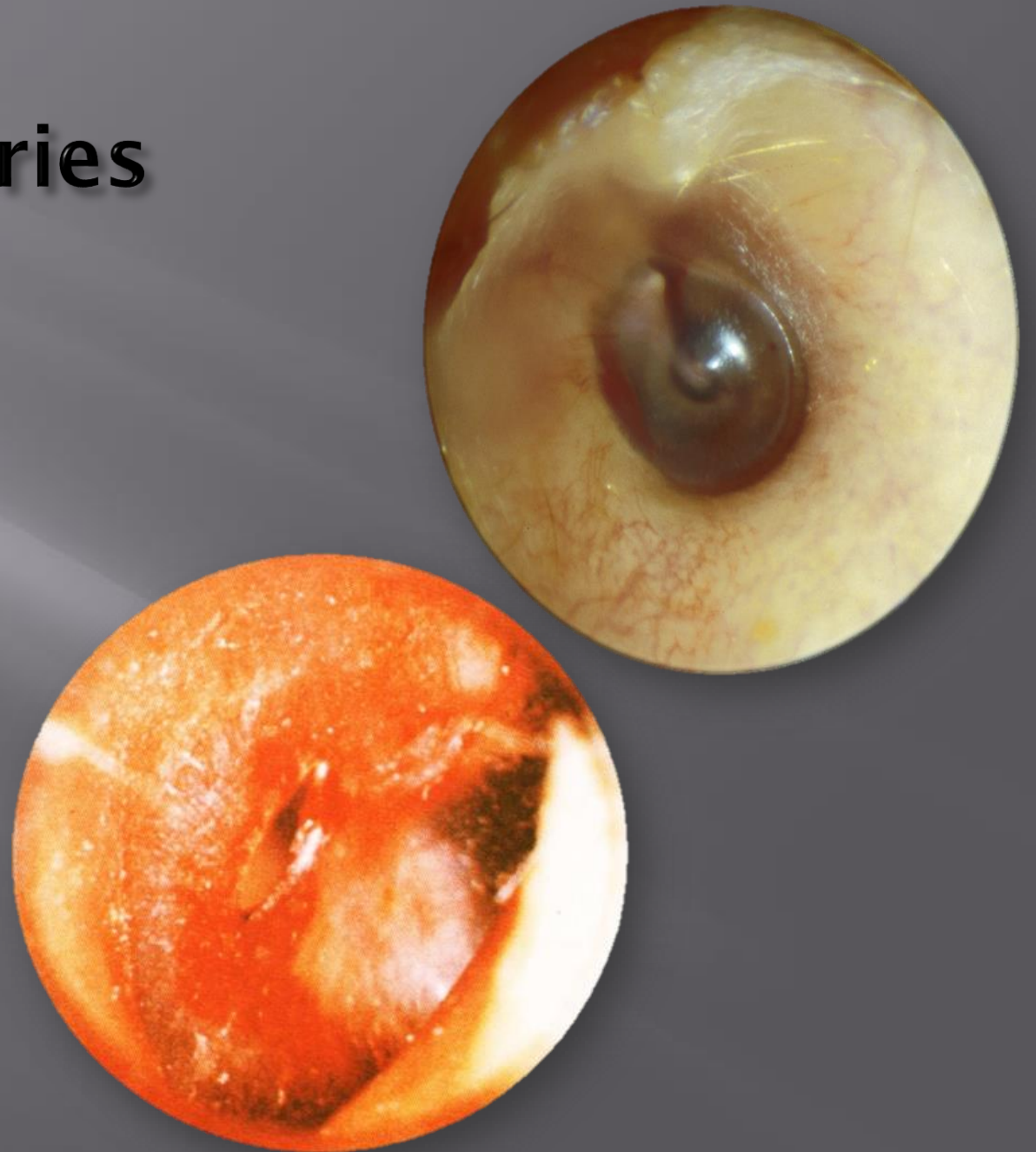


- ▣ Laceration at the isthmus of EAC
- ▣ Tympanic perforation
- ▣ Ossicular chain disruption



Middle & Inner ear injuries

- 1 Blast injury
 - 2 Barotrauma
 - 3 Head injury
 - 4 Surgical trauma
-
- ▣ Usually caused by accidents
 - ▣ 2% to 3% of all injuries
 - ▣ in 45% of fractures of skull base



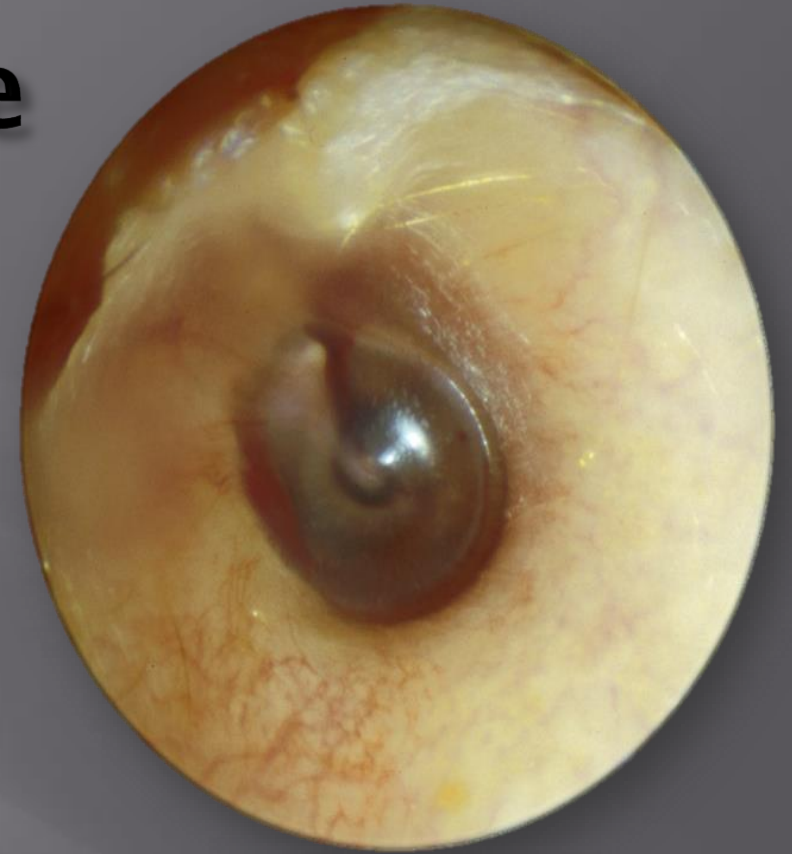
Temporal Bone Fracture

Blunt >> Penetrating

- Most trauma is blunt in nature
- MVA, assault, fall
- Associated with life-threatening injuries
-

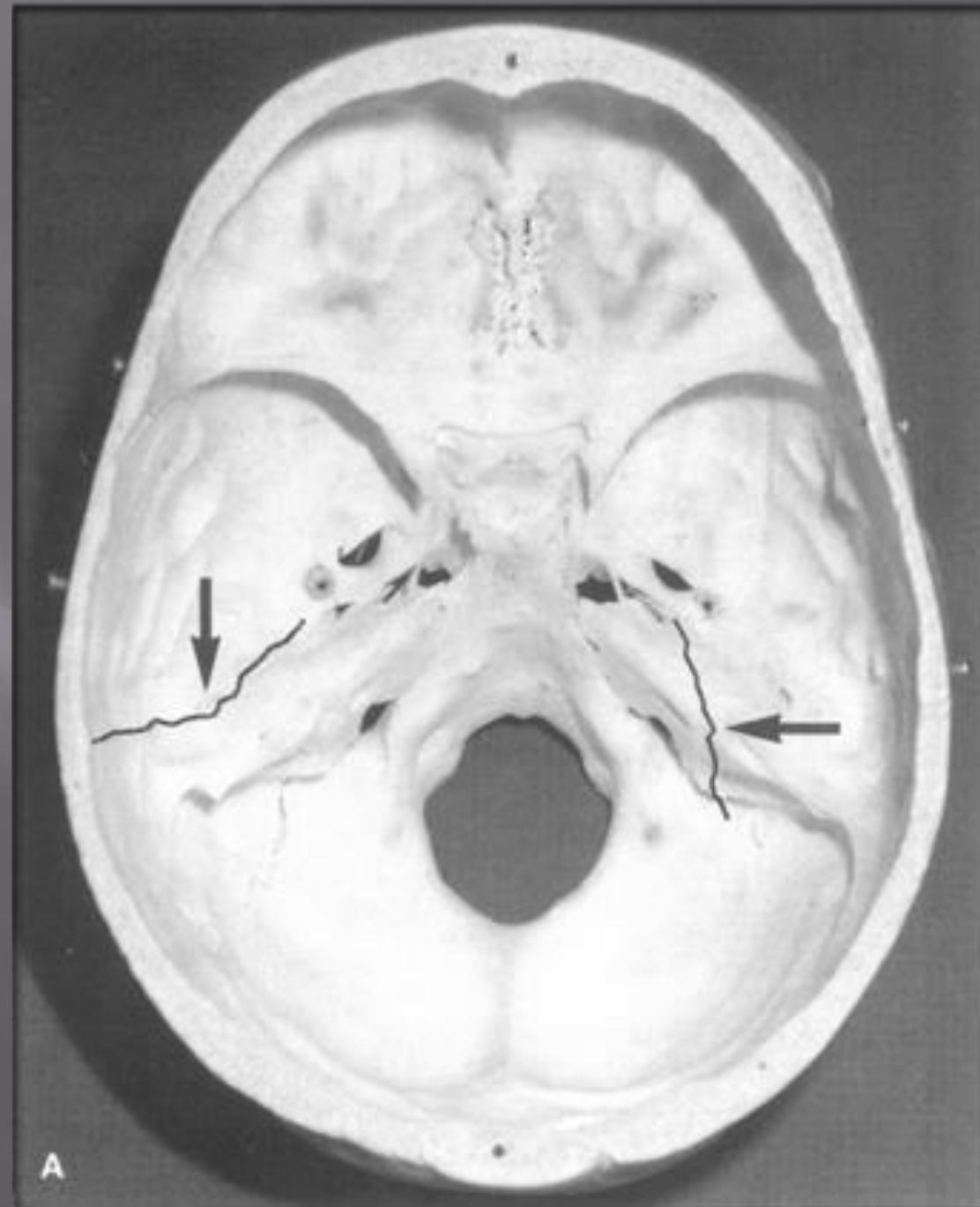
Evaluation

- Trauma protocol/clear C-spine
- Assess facial nerve function *early*



Hemotympanum

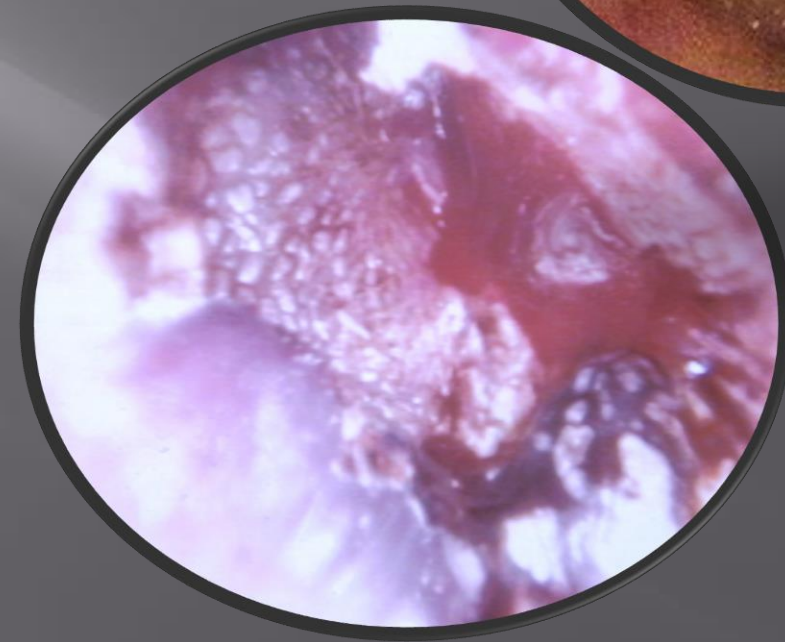
- Ear examination - hemotympanum, CSF otorrhea, TM perforation, or canal laceration
- Assess hearing-tuning forks, audiogram
- Radiology
 - A fine-cut temporal bone CT - with bone windows
Evaluate extent of fracture



Temporal Bone Fracture Physical Examination



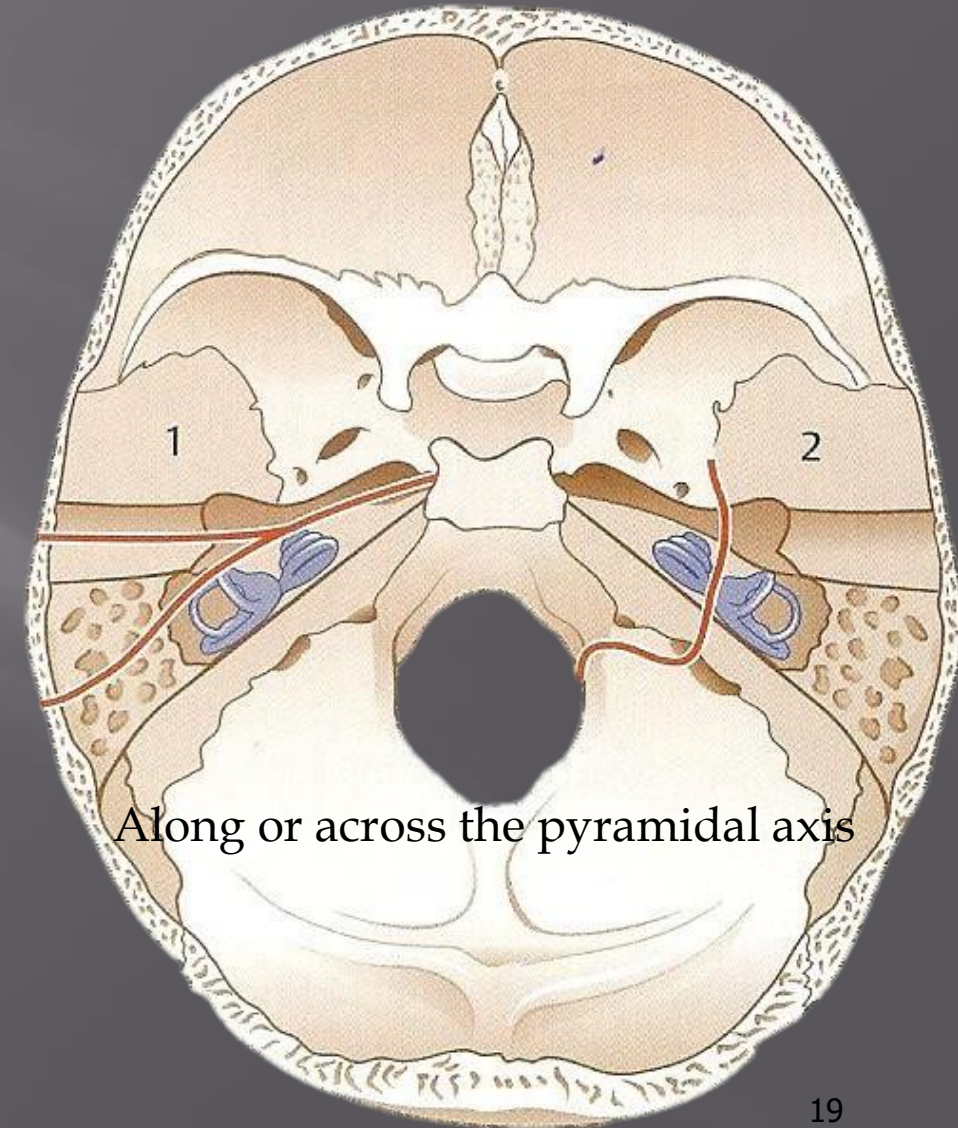
orbital ecchymosis or
Raccoon's Eyes

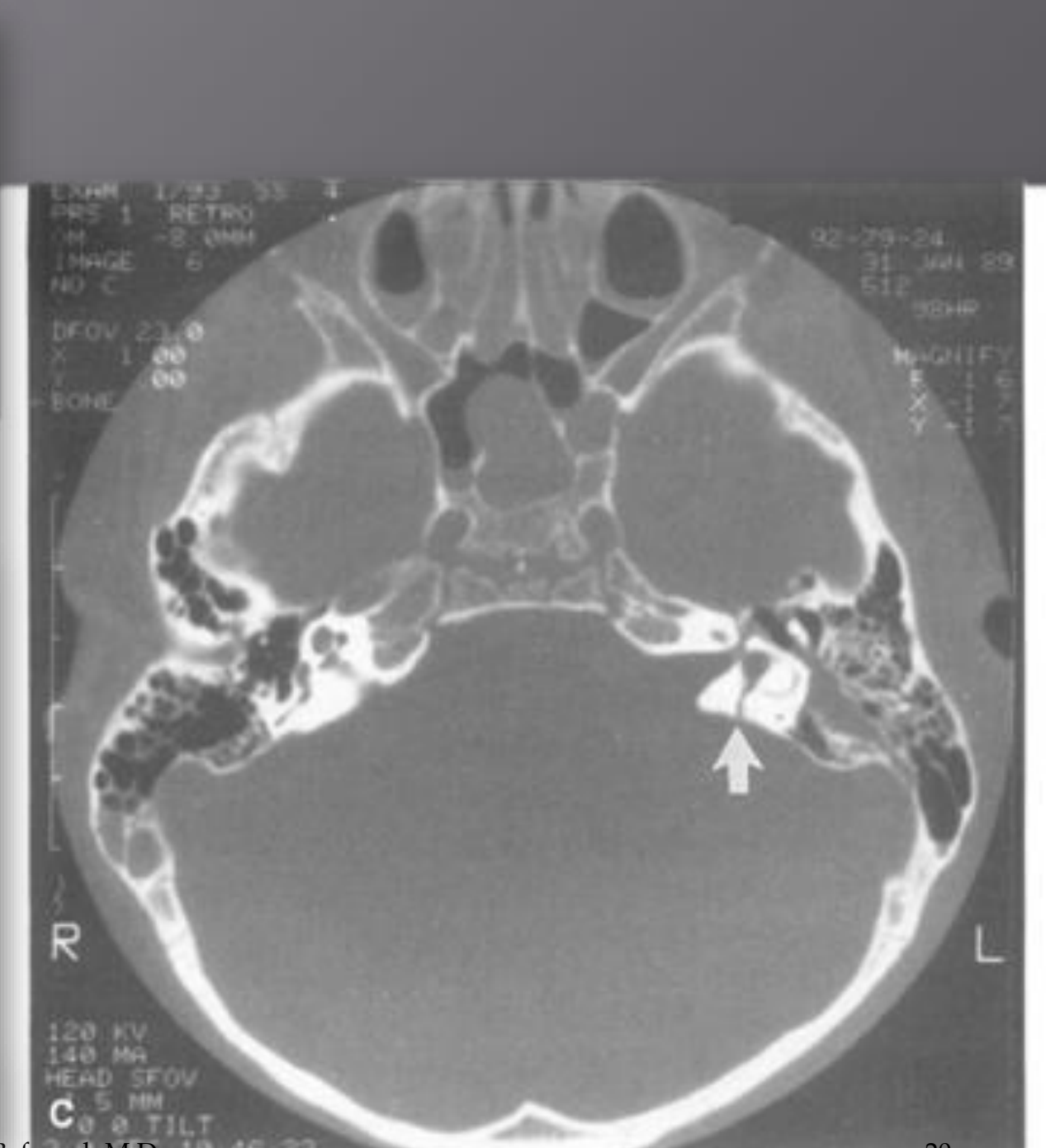
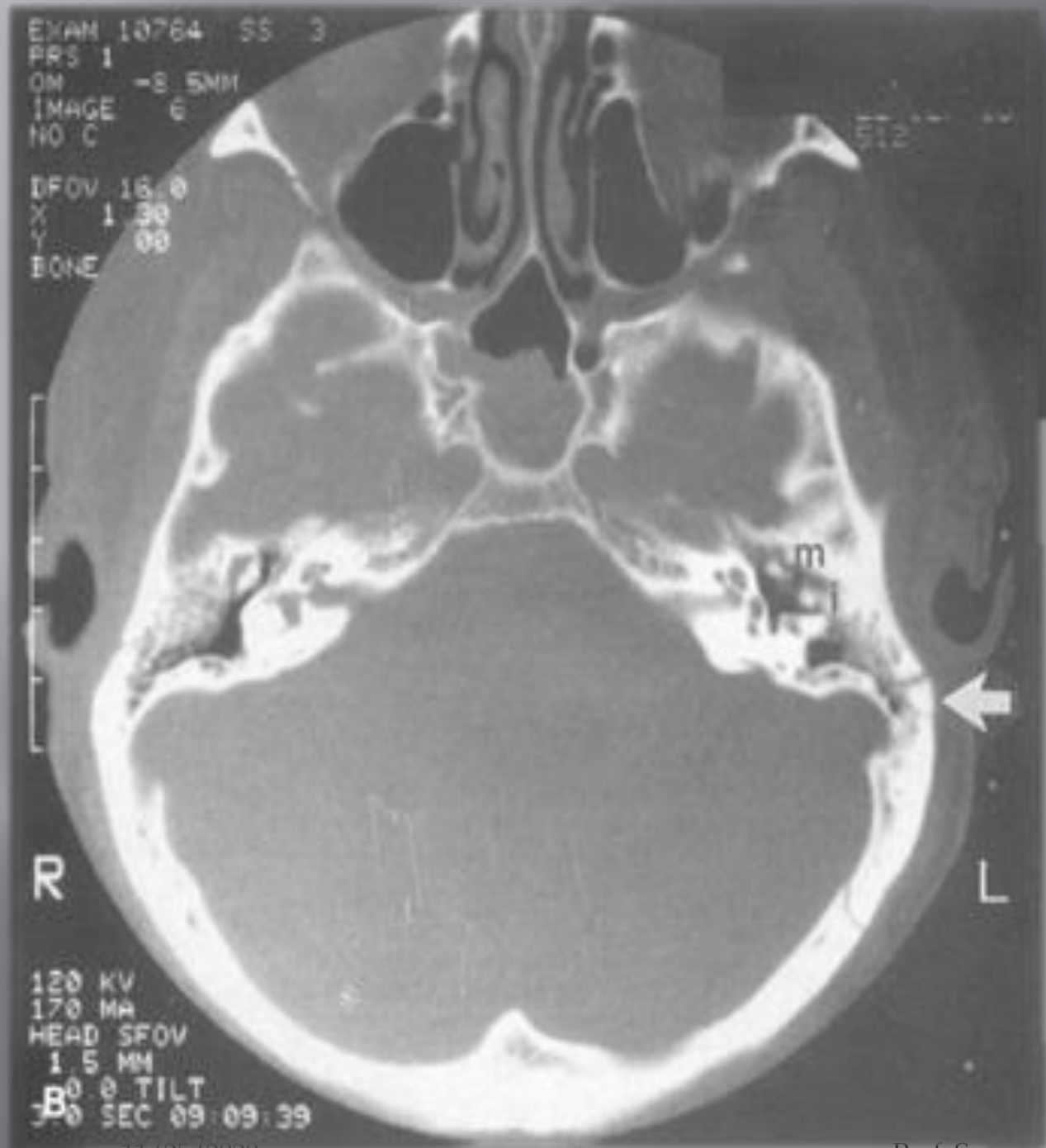


External Canal Laceration, hemotympanum

Temporal Bone Fracture

- Direct fractures: e.g. gunshot wounds.
(Penetrating perforating fracture & brain damage)
- Indirect fractures:
 - Longitudinal fracture
 - Transverse fracture

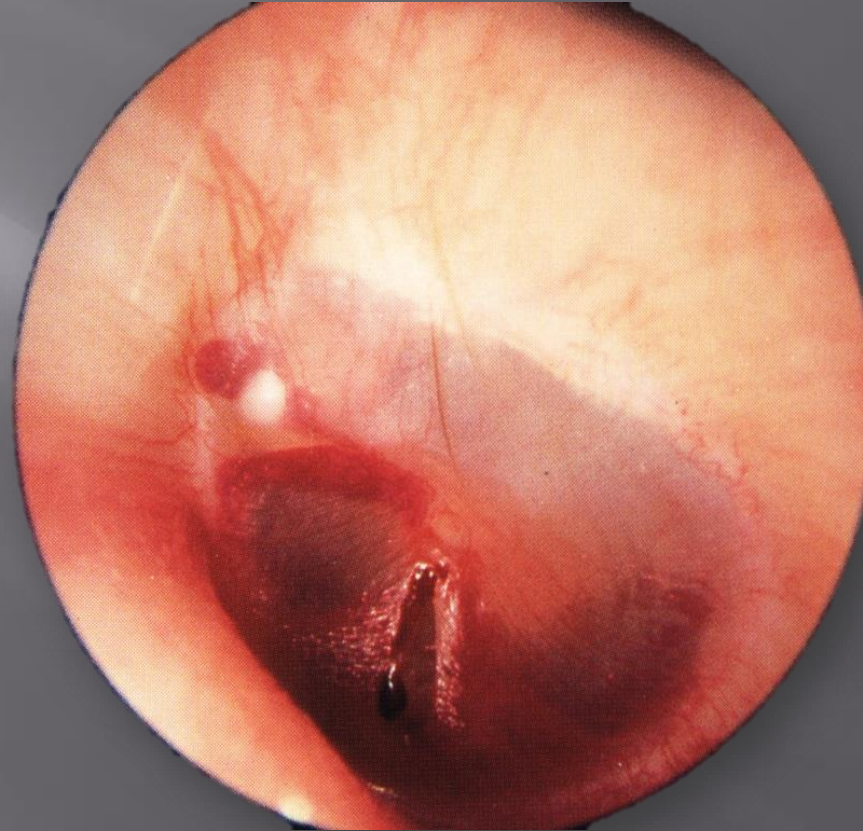




Longitudinal T.B. Fracture

- Hemotympanum Or CSF
- T.M. tear
- Bleeding EAM
- Step formation EAM
- middle ear Deafness.
- 20% Facial paralysis

!CSF otorrhea



Transverse Temporal bone fractures

- Intact EAM
- Intact TM
- \pm hemotympanum Or CSF
- Hearing loss
- Vertigo
- Spontaneous nystagmus
- 50% Facial paralysis
- Eustachian tube - CSF to the nasopharynx

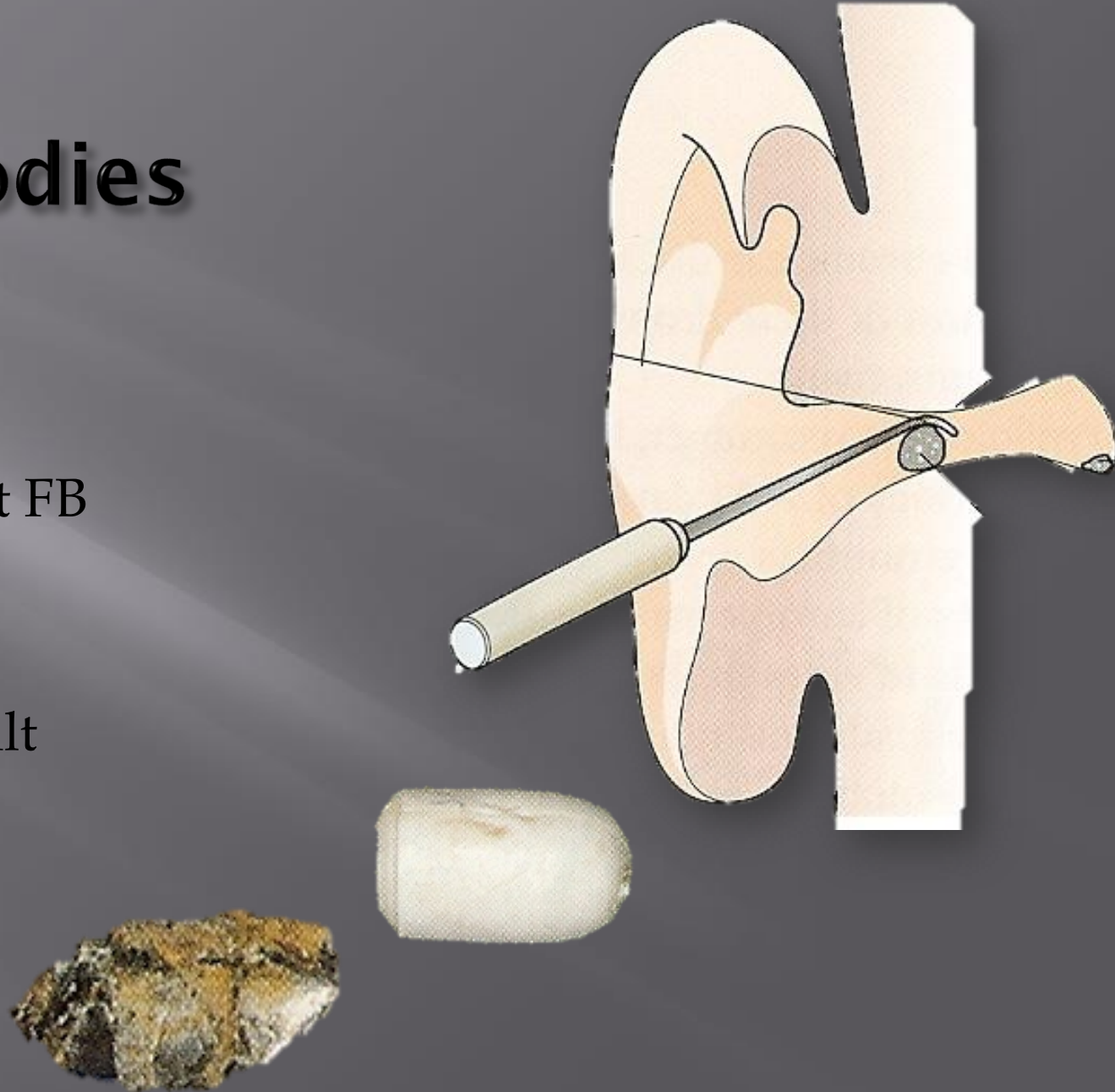


Temporal Bone Fracture Management

- ▣ Facial nerve paralysis
 - Immediate - operative exploration and repair
 - Delayed - observe, steroids, eye protection
- ▣ CSF leak - close spontaneously with conservative management
 - bed rest »» lumbar drain
 - >90% resolve in 2 weeks
- ▣ Hearing loss
 - Sensorineural - hearing aid
 - Conductive- ossicular reconstruction
- ▣ Vertigo - treat symptomatically & usually resolves over time
 - Vestibular suppressants

Ear Foreign Bodies

- ▣ Children are most liable to insert FB
- ▣ Otorrhoea or Ootalgia
- ▣ Children deny the history
- ▣ Cotton bud or wood stick in adult



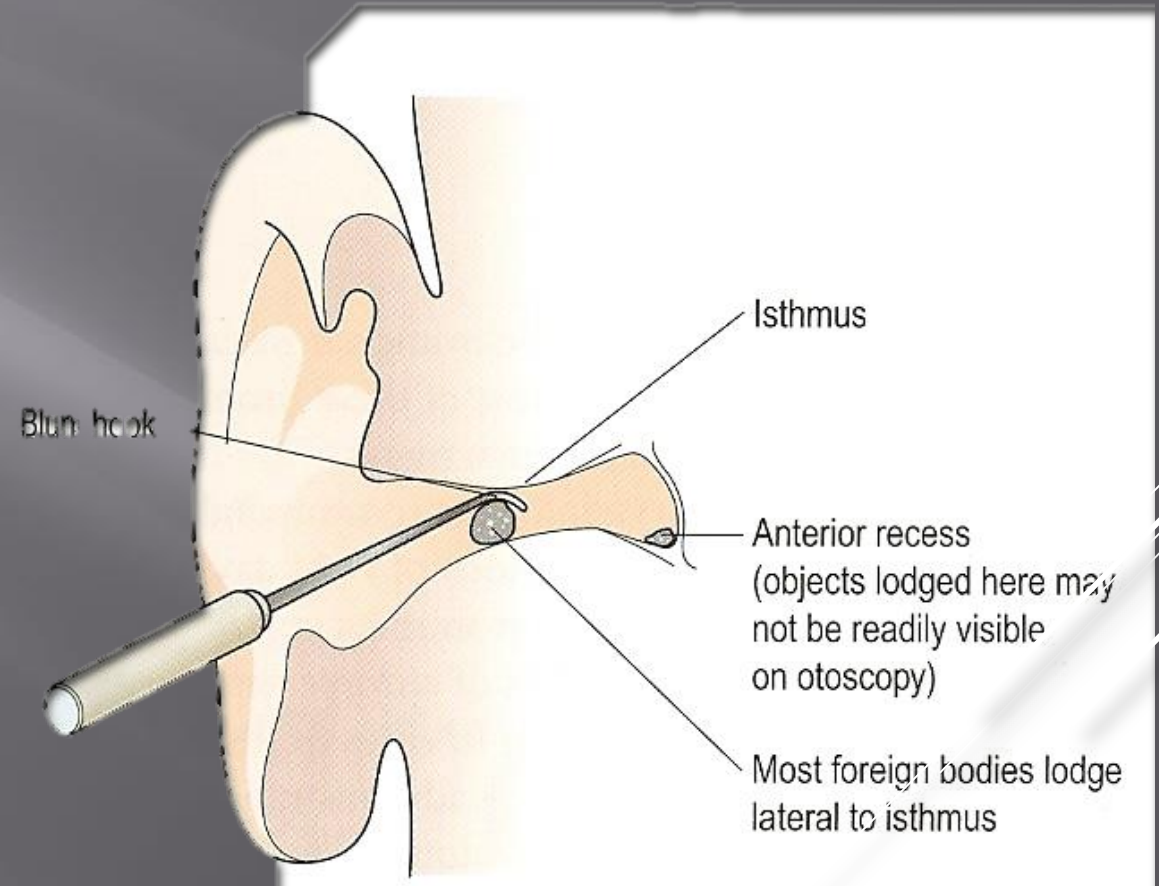
- ▣ diagnosed using otoscopy
- ▣ The object & length of time
 - Careful history (nature)
- ▣ Scratching the canal or TM by Insects
- ▣ Physical pain or bleeding
- ▣ hearing loss, erythema ,swelling & a foul discharge



Ear Foreign Bodies

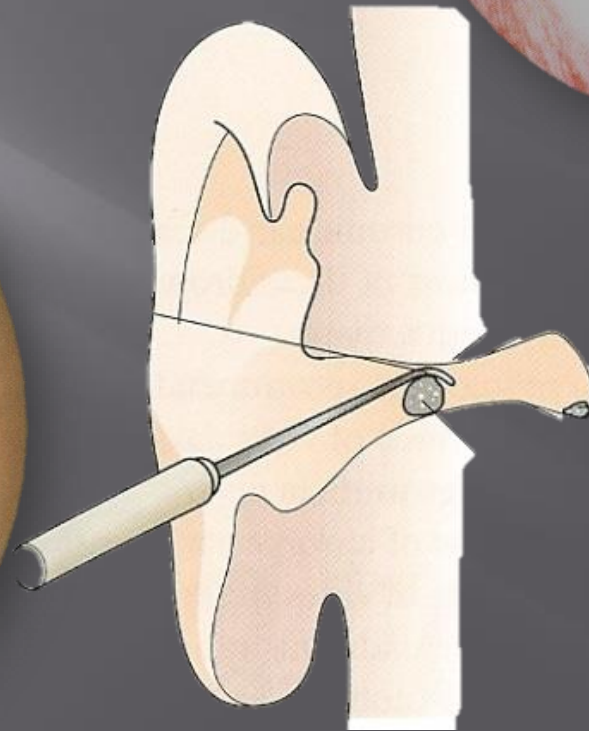
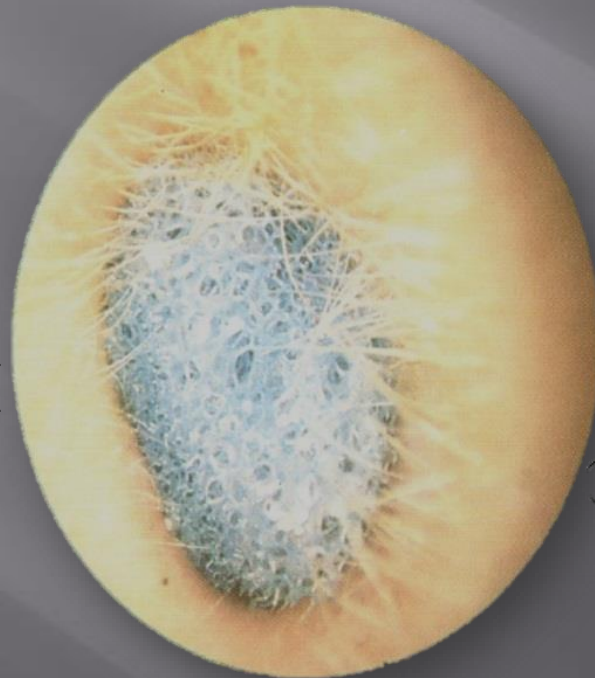
Common sites at which FB become lodged

- Lateral to the isthmus
- At the isthmus
- Deep meatus
- Always Check both ears & nose in children



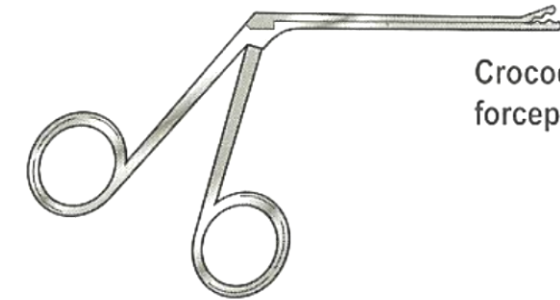
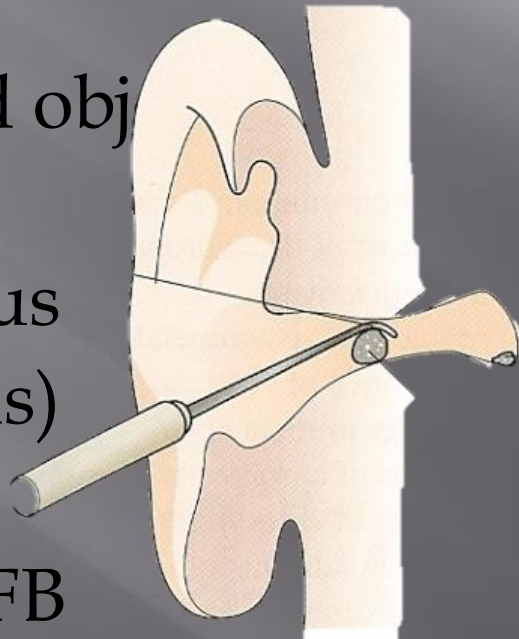
Removal of FB

- ▣ Clinician Skill
- ▣ Instruments
- ▣ Optimal lighting
- ▣ Referred to a specialist
- ▣ Repeated attempts
- ▣ GA is safer
- ▣ Trauma to the EAM
TM



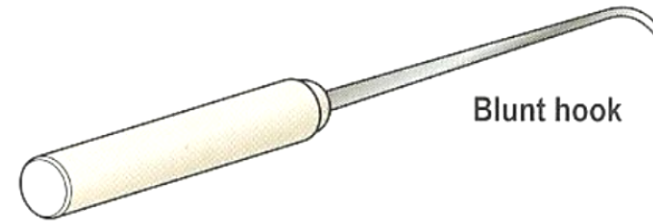
Method of F.B. Removal

- The Type & Location
- Crocodile forceps :
(cotton wool, paper,& foam sponge)
not smooth round obj
- Blunt hook
- Suction apparatus
eg.(cosmetic beads)
- Syringing in
Non-vegetable FB



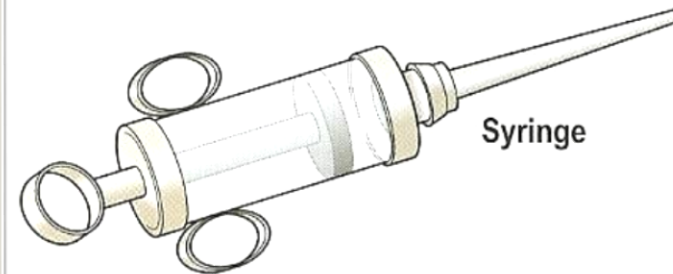
Crocodile
forceps

Should not be used
to remove smooth
round objects



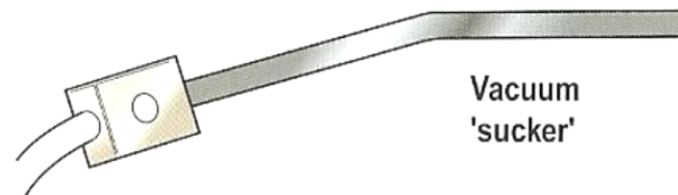
Blunt hook

Useful for round
smooth objects,
but not if impacted



Syringe

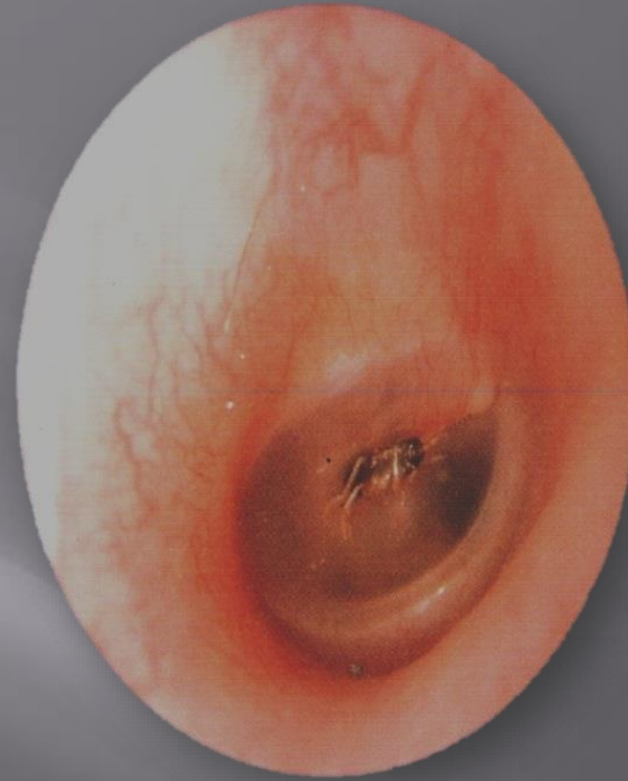
Ideal for most
foreign bodies
except if vegetable
material



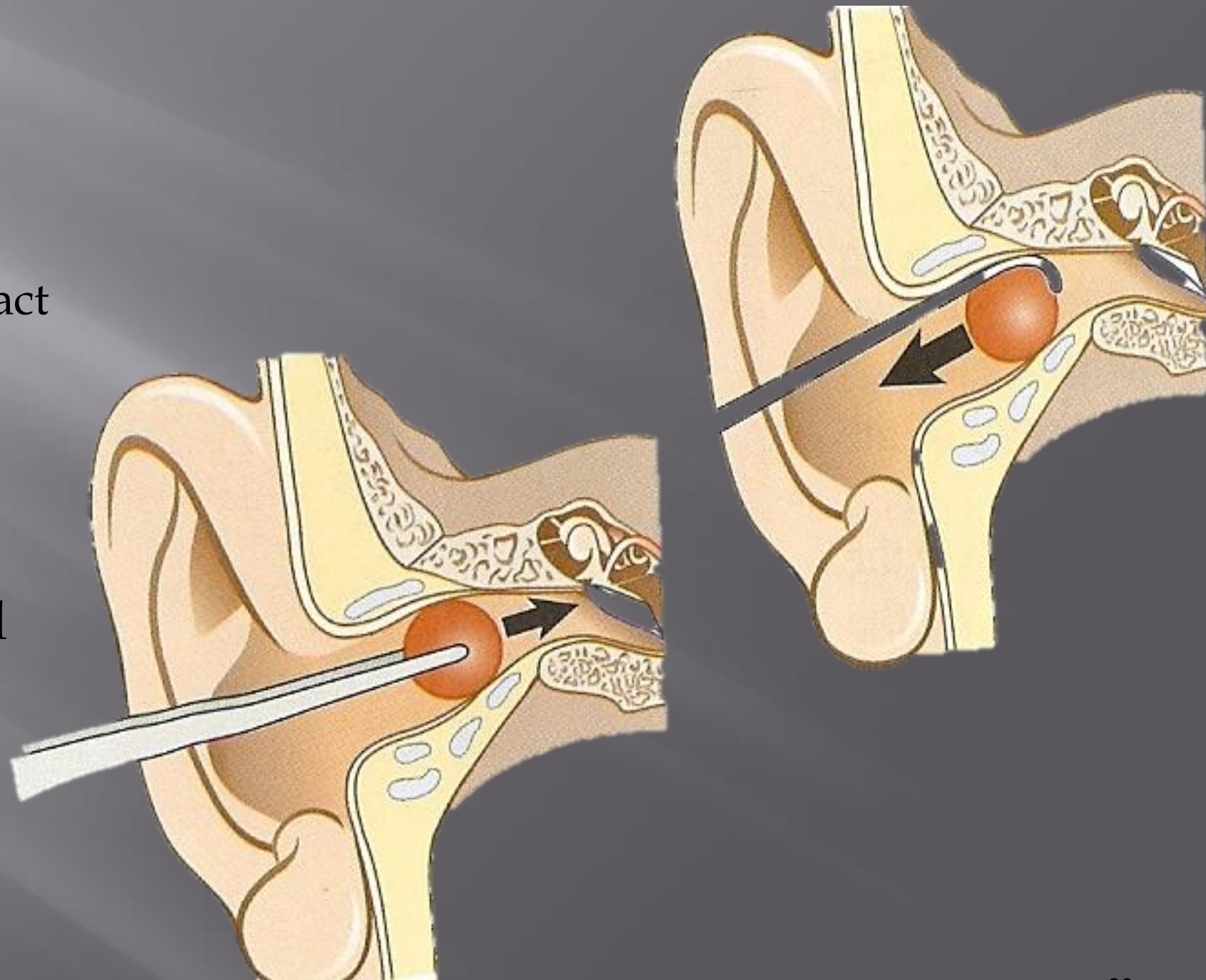
Vacuum
'sucker'

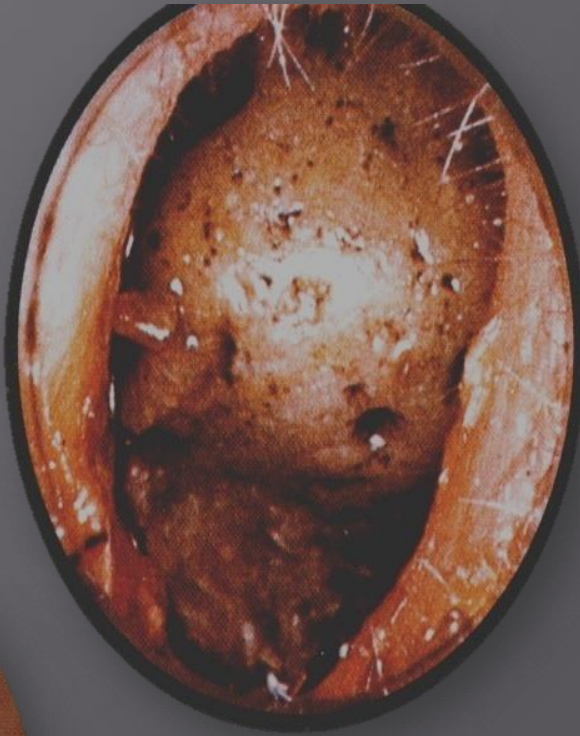
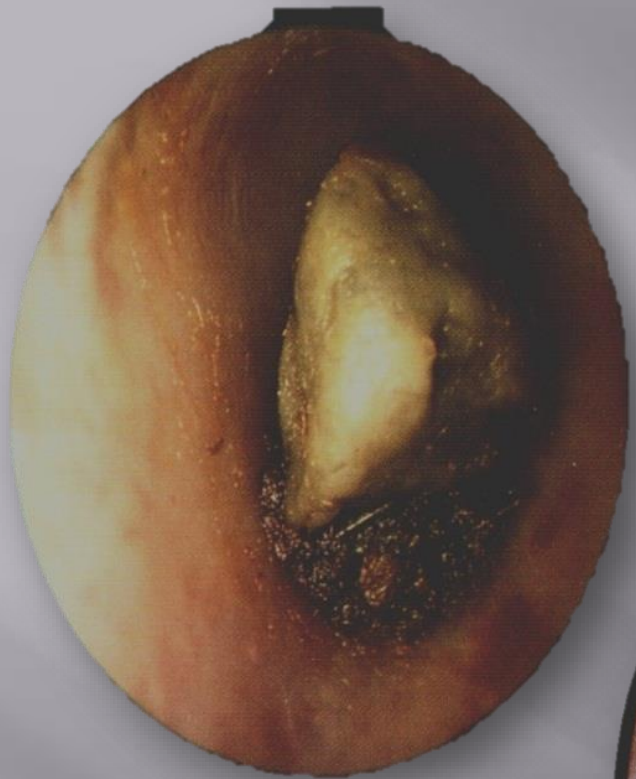
Suction is
satisfactory for the
majority of foreign
bodies

- ▣ Vegetable swell & impact
eg: rice grains or peas
- ▣ Animal FB : fleas, ants or flies
causing distressing tinnitus
- ▣ Alcohol or spirit to kill ,then
syringed or suctioned out
- ▣ Tympanotomy for middle ear
F.B.



- - GA in small children
- Syringing if TM is intact
- Using a hook under otoscopic control
- - *Complication:*
 - TM perforation
 - Injury to facial canal
 - Dislocation of the ossicles





Key Point

- ▣ Syringing is contraindicated following recent injury or ear surgery and in patients with a history of perforation of the eardrum.



Otological trauma & foreign bodies

An auricular haematoma or suspected perichondritis requires urgent treatment to avoid a long-term cosmetic defect.

Most of the foreign bodies in the ear canal are asymptomatic.

Head injuries without a fracture can produce severe cochleovestibular symptoms.

Avoid medical litigation by preoperatively informing patients undergoing ear operations of potential risks to hearing, balance and facial movements.



- ▣ Attempt removal only if you have the skills and instruments.
- ▣ It is frequently safer to remove foreign bodies in children under general anaesthesia.
- ▣ Do not use forceps to extract smooth round objects.
- ▣ Do not syringe out vegetable foreign bodies as they will swell and impact in the ear canal.

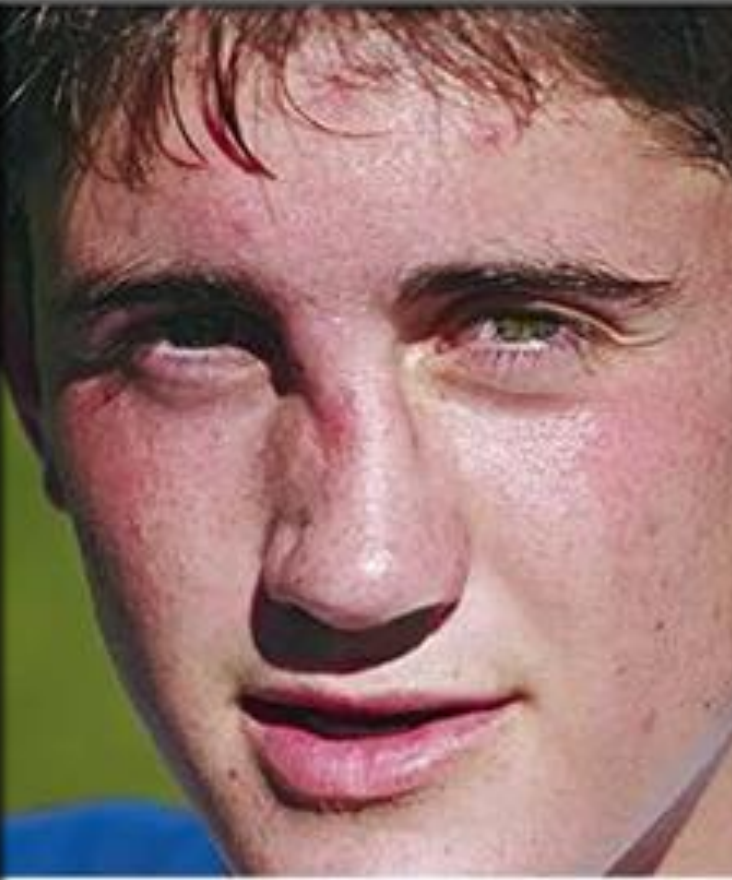
Trauma to the Nose



11/25/2020

- ▣ In contact sports & fights
- ▣ Depressed or deviated NB
- ▣ Accidental injury in children
- ▣ Simple or Compound





- ▣ Deformity, Obstruction & bleeding
- ▣ The deformity is obvious
- ▣ Careful palpation
- ▣ Nasal cavity examination
- ▣ Radiography ?



Clinical Presentaion

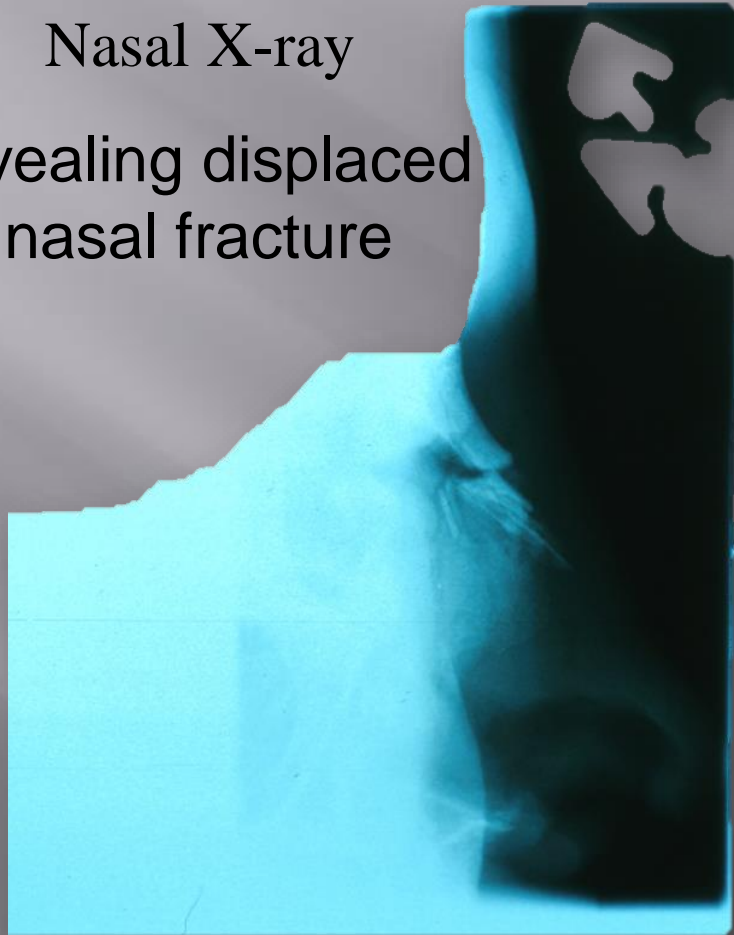
Nasal Fracture

- ▣ Very common
 - Most common facial fracture
 - 3rd most fractured bone
- ▣ High index of suspicion for fracture
 - Mechanism, change in appearance
 - Epistaxis, nasal obstruction
- ▣ Examine and palpate nose carefully
 - Instability, mobility, crepitation
 - Lacerations, septal hematoma
- ▣ Nasal x-rays - variable reliability
- ▣ Early ENT referral (<5 days)
 - Closed/ open reduction - Early treatment can avoid cosmetic deformity and chronic nasal airway obstruction (<10-14 days)
 - Septorhinoplasty - late

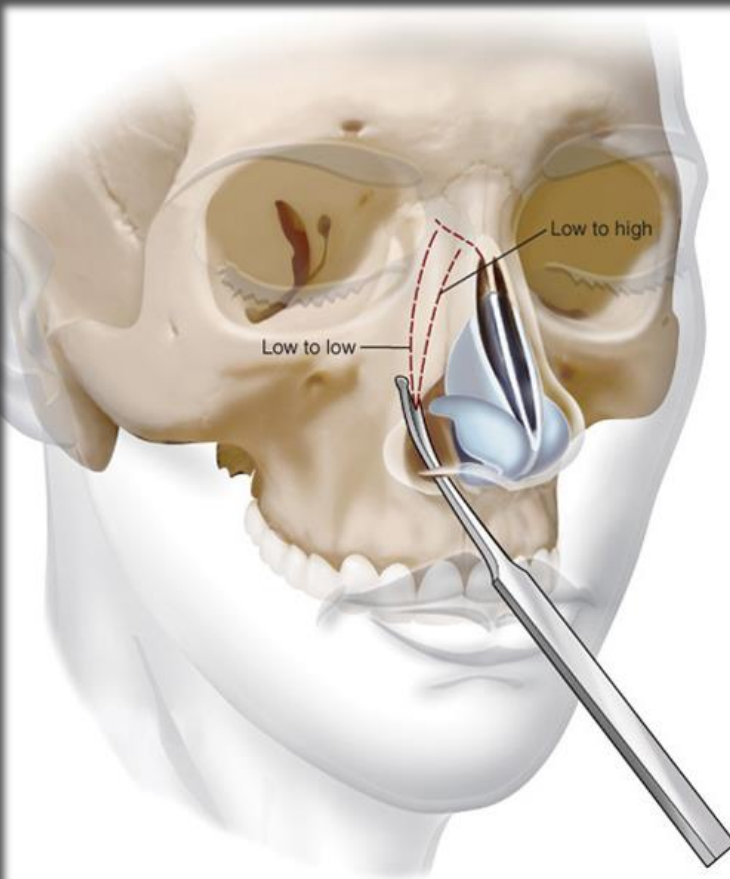


Nasal Fracture Management

Nasal X-ray
revealing displaced
nasal fracture



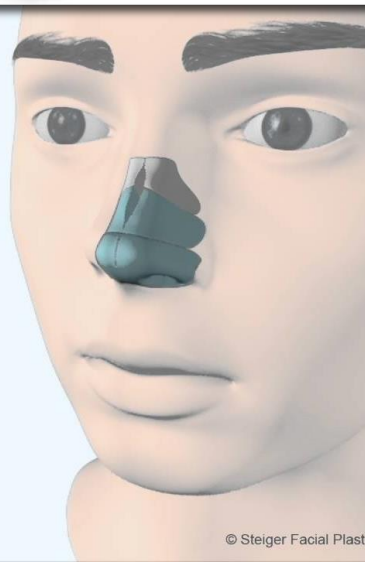
Closed Reduction



- Patients without significant swelling or deformity may be discharged.
- For those with significant swelling:
- Give advice on using ice/simple analgesia to decrease the oedema and pain.
- Discharge - review in five days
- Patients with significant nasal deviation should be referred to ENT within 7-10 days of the injury.
- Adhesions to the surrounding soft tissue can occur in as few as 5-10 days.
- Fractured nasal bones usually heal in 2-3 weeks.

Otome and Hammer

Osteotomy
to correct
the open roof
deformity

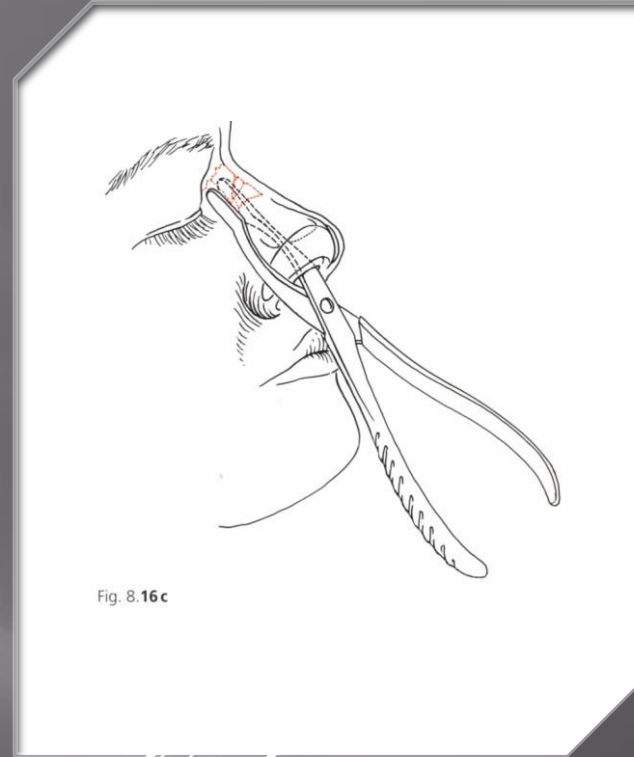
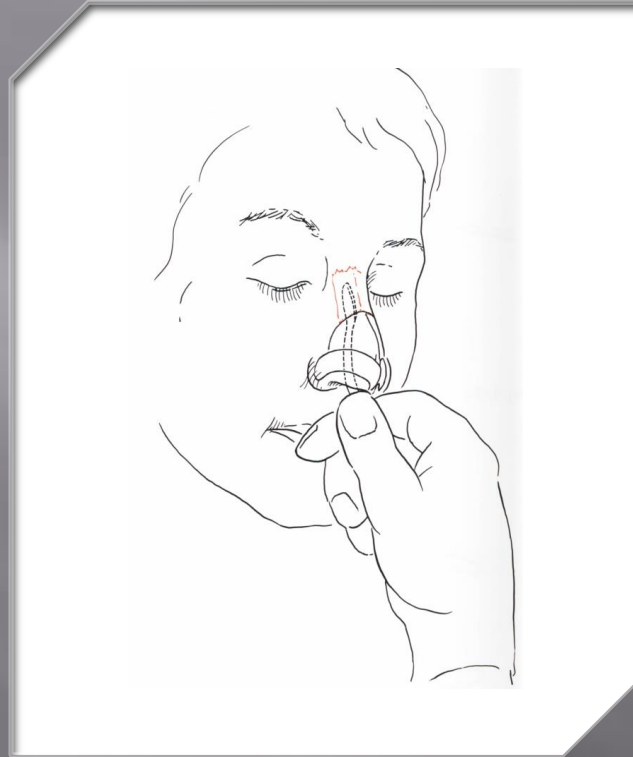
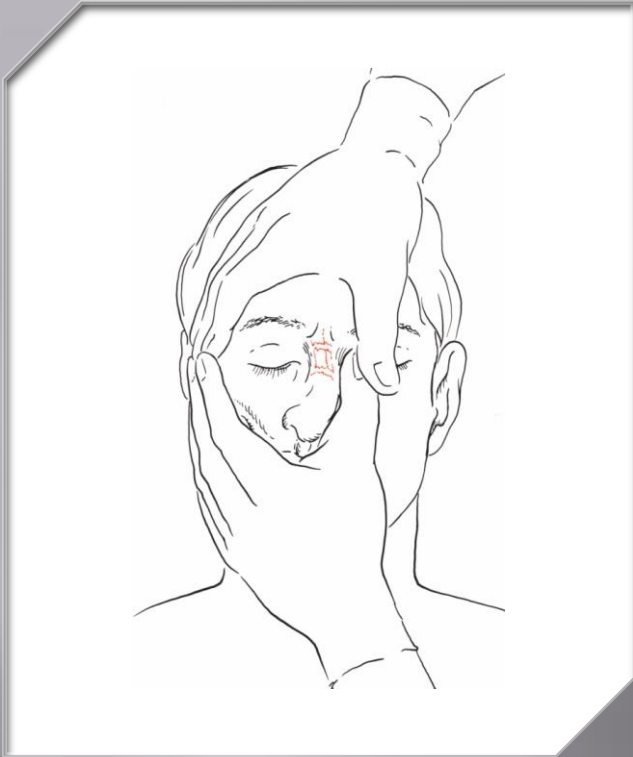


Nasal Fracture Management

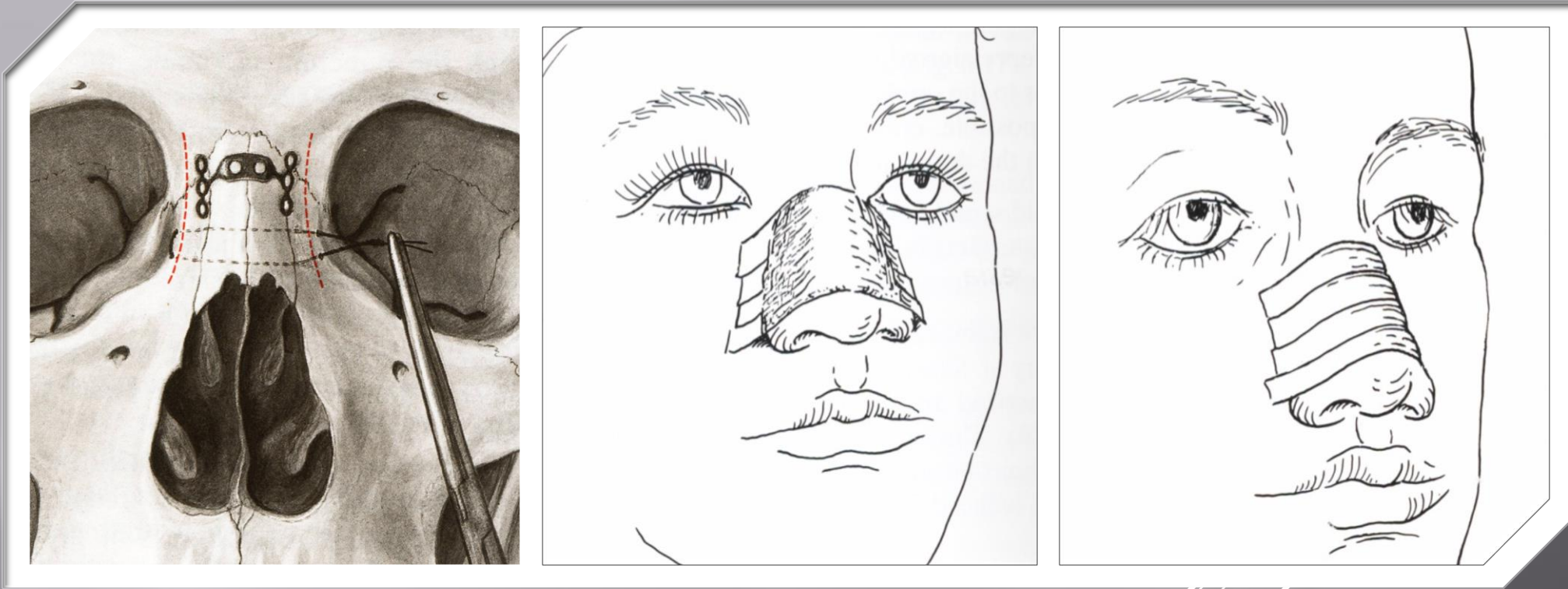
Nasal Fracture Management

- ❑ Fracture reduction can be performed when it is possible to assess and manipulate the mobile nasal bones.
- ❑ usually within 5-10 days in adults and 3-7 days in children.
- ❑ Patients with little swelling may be suitable for immediate reduction.
- ❑ Closed reduction is preferred by most surgeons.
- ❑ Antibiotics are indicated if there is a laceration overlying the fracture, or if a septal haematoma has been incised.





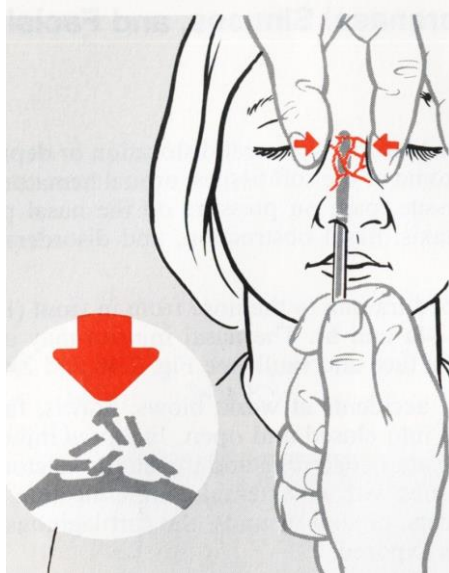
FRACURE NASAL BONE



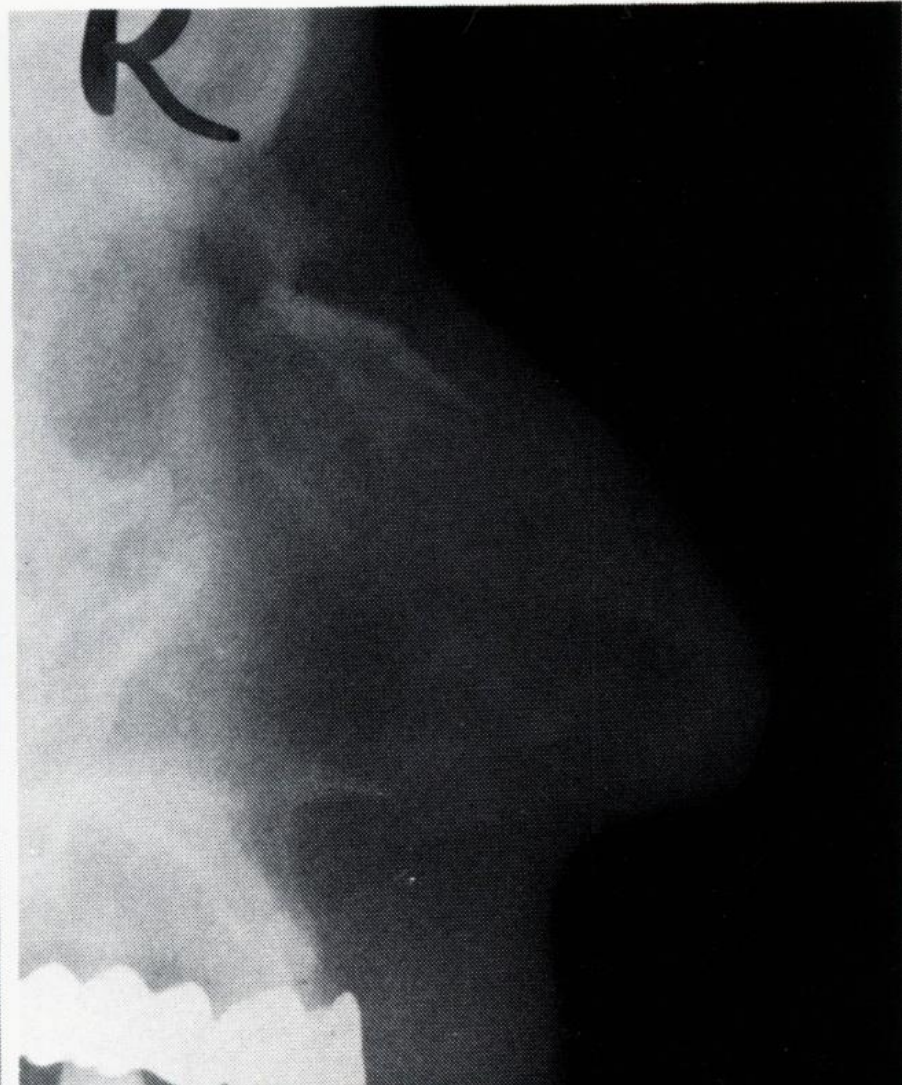
NASA Fracture



- ▣ Reduction of NF under local or GA
- ▣ Immediately before swelling
- ▣ After the swelling has subsided
- ▣ Disimpacted bony fragments
- ▣ Swinging, reduces the fracture
- ▣ Depressed NB is lifted
- ▣ External cast

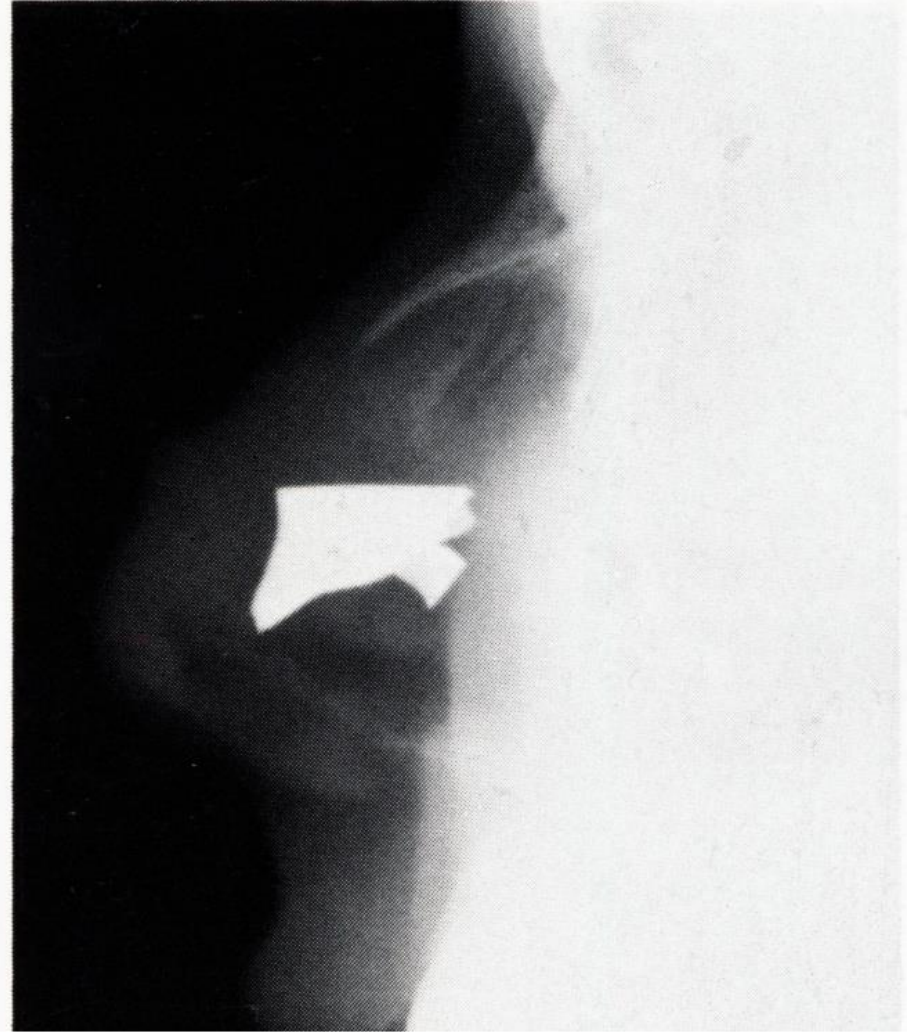
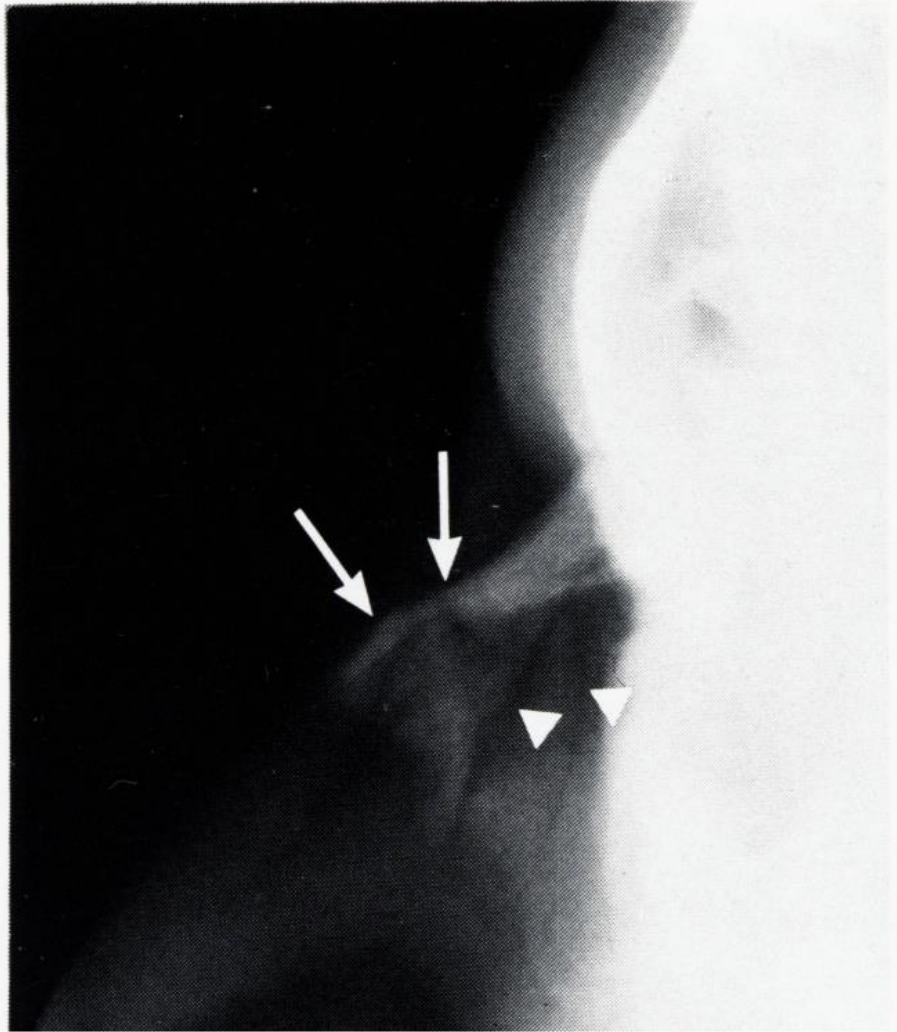


Treatment



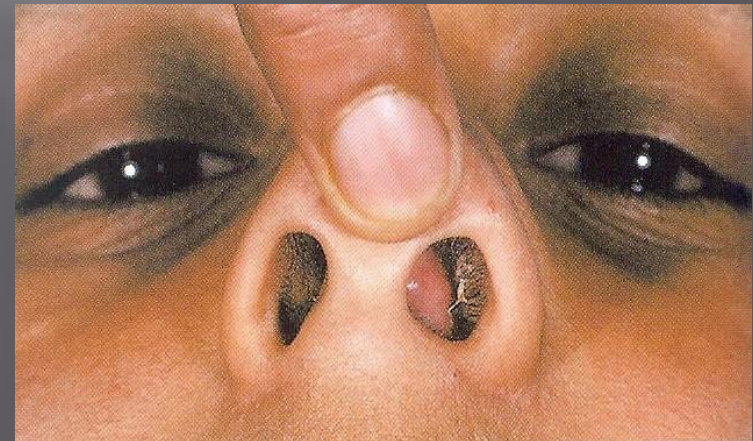
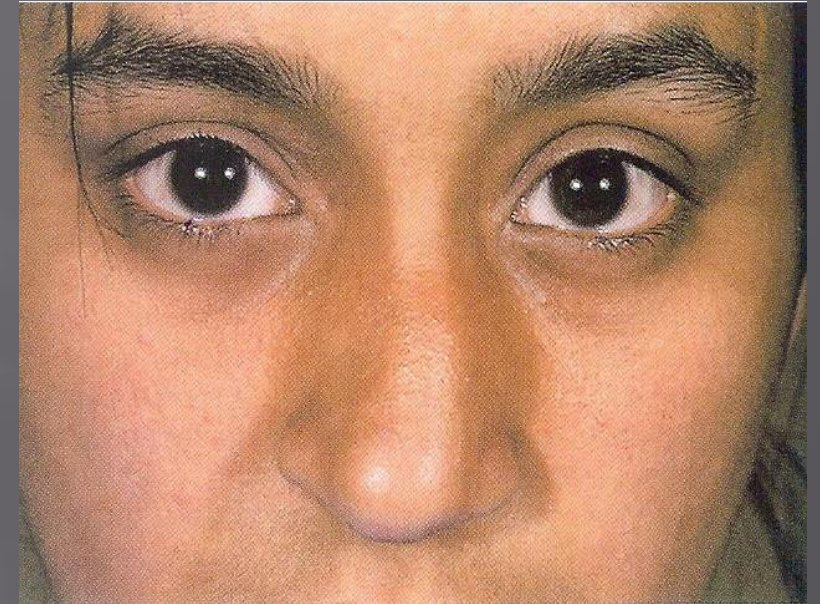
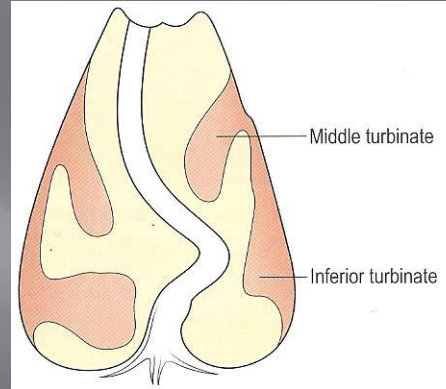
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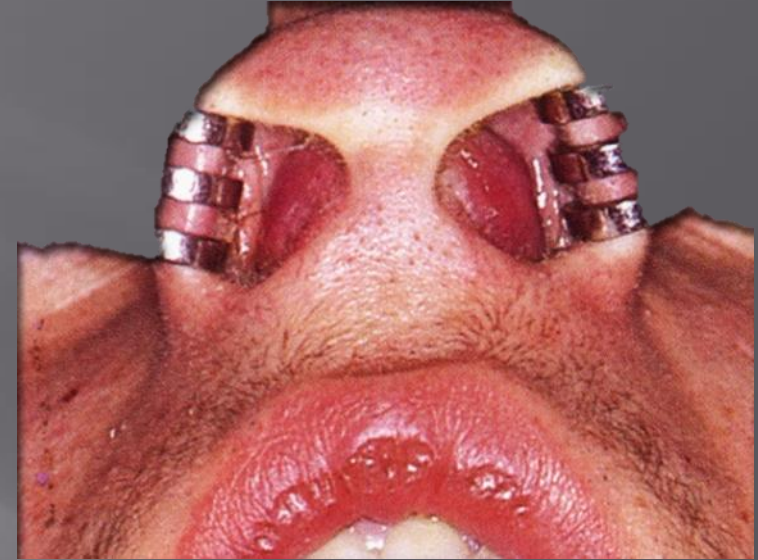
Complications of Nasal Trauma

- Septal deviation
- Septal hematoma
- Septal abscess
- Causes of cosmetic defects:
 - poor initial management
 - secondary infection



Nasal Fracture Complications

Septal Hematoma



a very painful, swollen, and completely obstructed nose
a fluctuant septal swelling, undrained septal hematoma septal cartilage
necrosis saddle nose deformity.

(Septal Hematoma)



Diagnosed by intranasal Examination:

- ✓ Thin, firm & swollen septum
- ✓ Fluctuant swelling
- ✓ Complete Nasal obstruction
- ✓ Uncomfortable patient
- ✓ Urgent drainage
- ✓ Firm Nasal packing

Complications of NF (Septal Hematoma)



- ✓ Perichondrium injury
- ✓ Hematoma
- ✓ cartilage necrosis → abscess
→ intracranial sepsis
- ✓ collapse of the nasal bridge
["saddle nose"]
- ✓ Nasal obstruction





Key Points in NF

PERFORATION OF SEPTUM

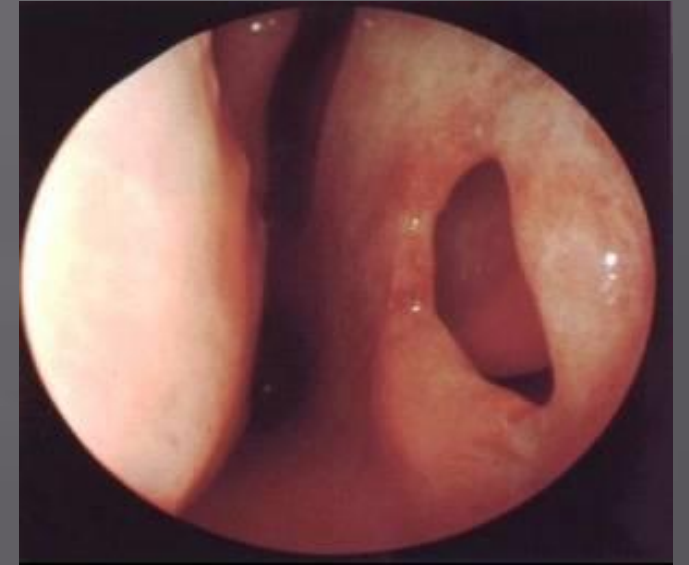
ETIOLOGY

- ▣ Septal surgery
- ▣ Other trauma
- ▣ Cocaine sniffing
- ▣ Chrome gases perforation
- ▣ Syphilis, TB, Lupus, tumors etc.



CLINICAL FEATURES

- ▣ Asymptomatic
- ▣ Whistling
respiration
- ▣ Crusting
- ▣ Recurrent Epistaxis



TREATMENT

- ▣ No treatment
- ▣ symptomatic
- ▣ Steam inhalation & nasal douching
- ▣ Topical ointment
- ▣ Silastic buttons & Surgical closure

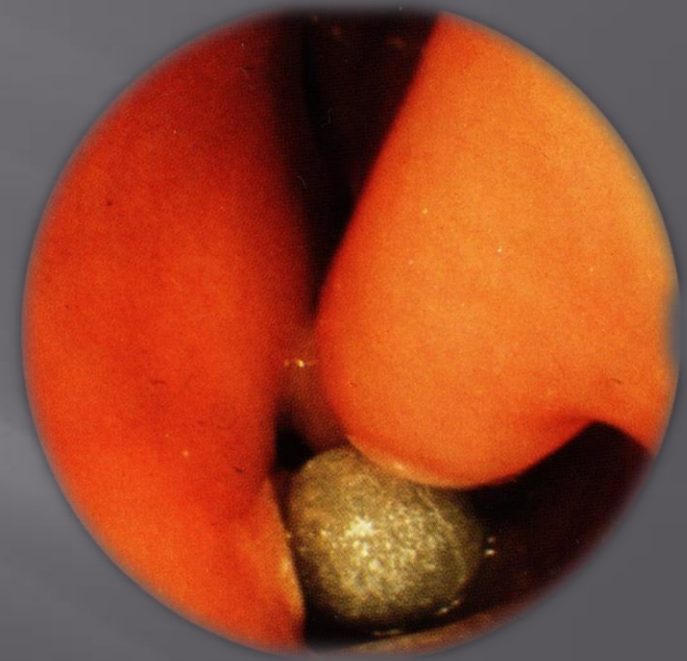
Foreign Bodies in the Nose

- ▣ Usually found in children
- ▣ May retained for long time
- ▣ Beads, coins, peas, pieces of rubber, paper , metal fragments...

Symptoms:

- unilateral nasal obstruction
- chronic purulent rhinitis or sinusitis
- unilateral fetid secretions

.RHINOLITH [calcium and magnesium salts]



Plastic bead



Diagnosis:

- anterior rhinoscopy
- Nasal endoscopy
- radiology
- speculum of a fiberoptic auriscope

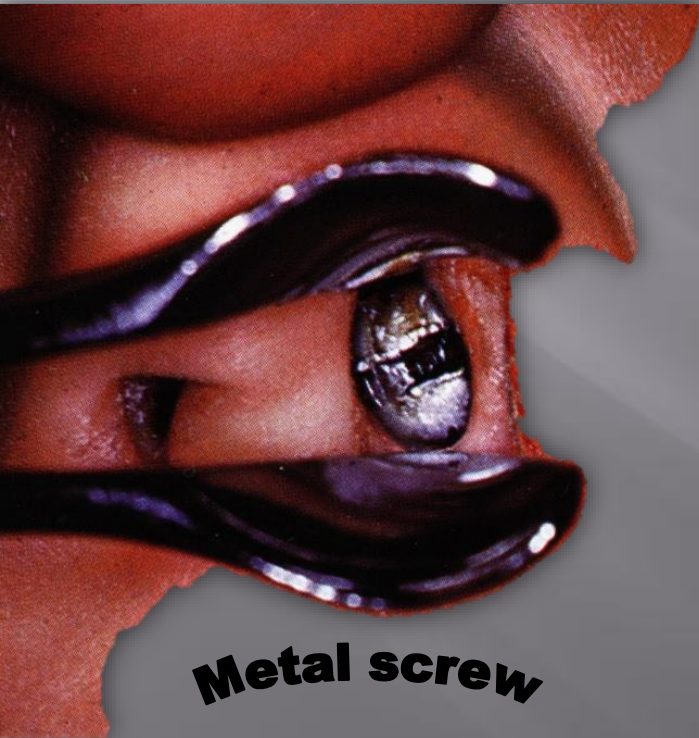
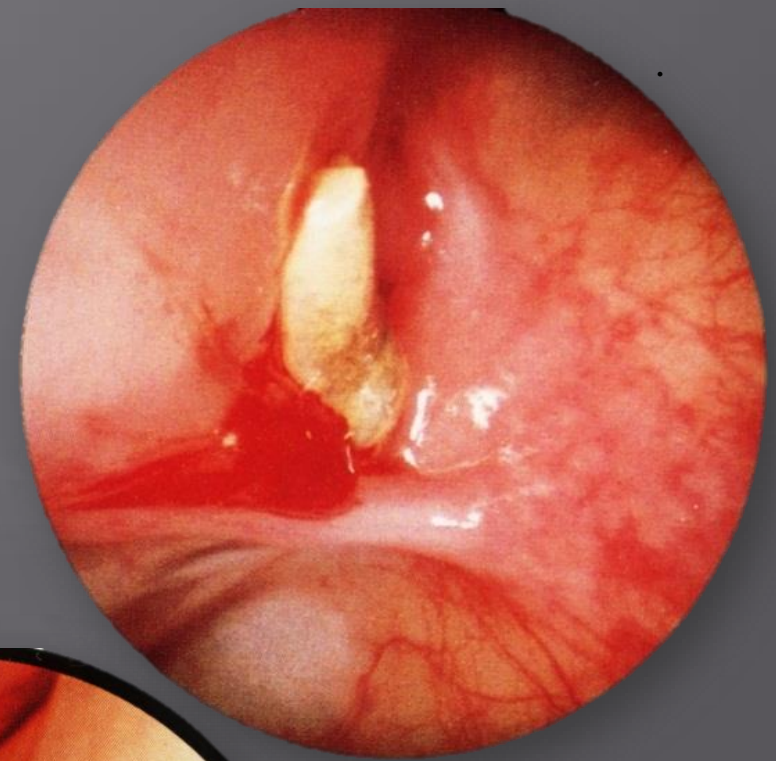
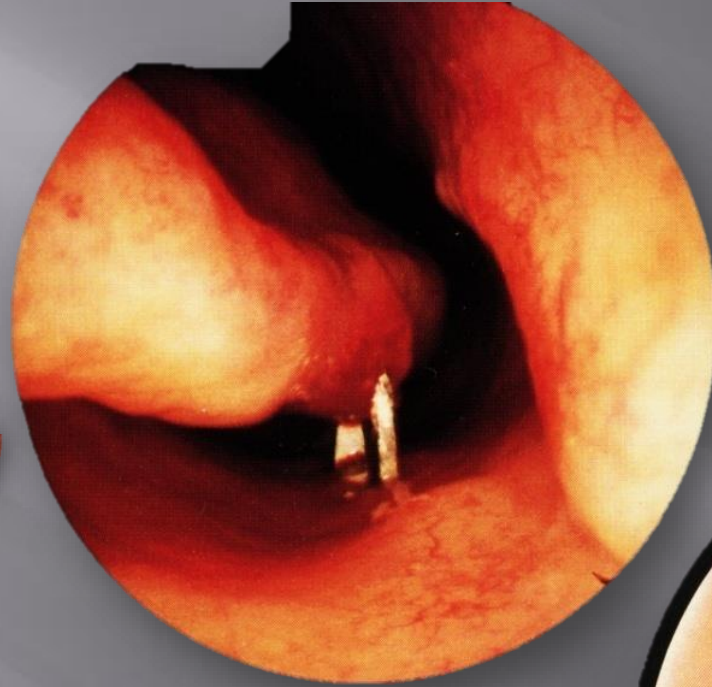
Treatment: -

- removal instrumentally
- By probe and tipping
- under GA

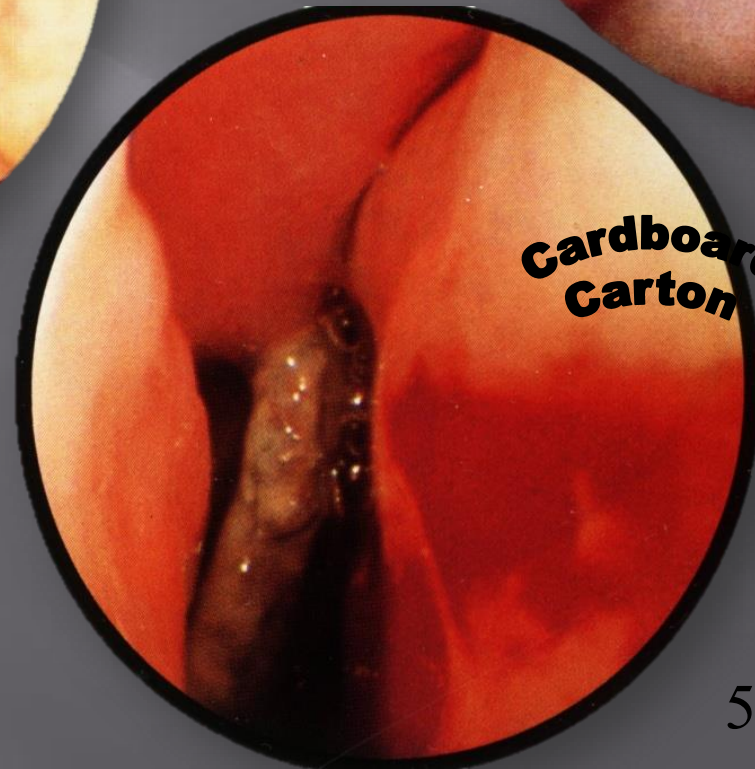


Foreign Bodies in the Nose

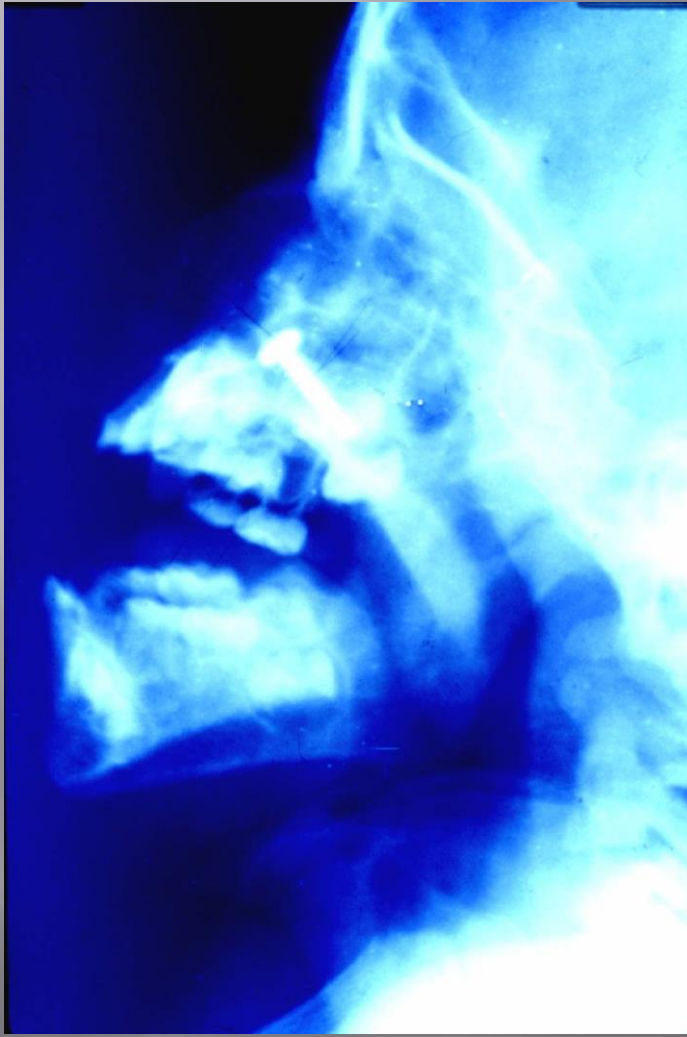
Nose Foreign Bodies



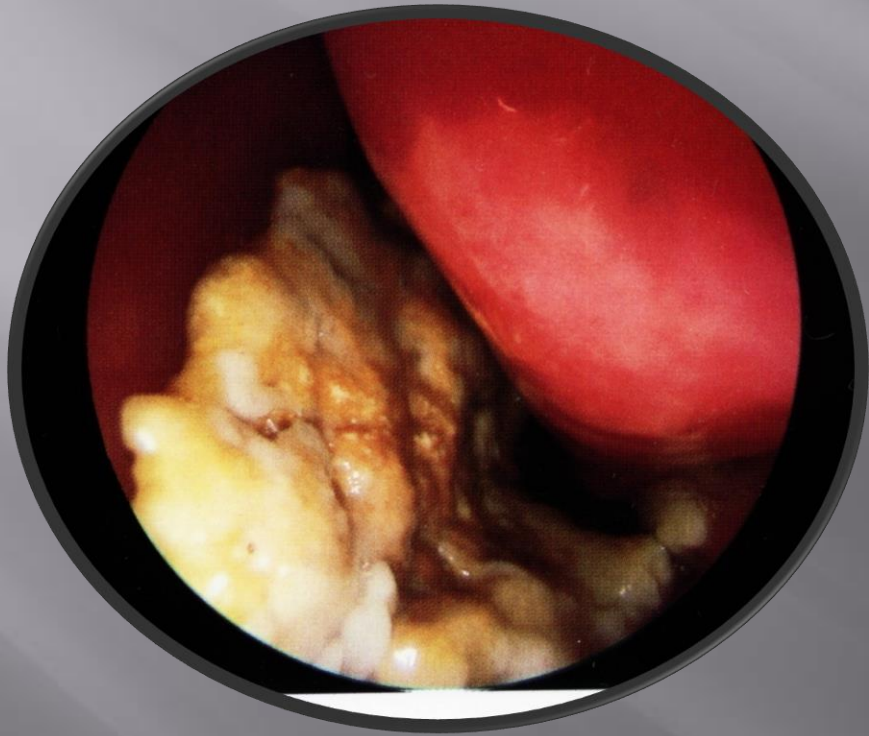
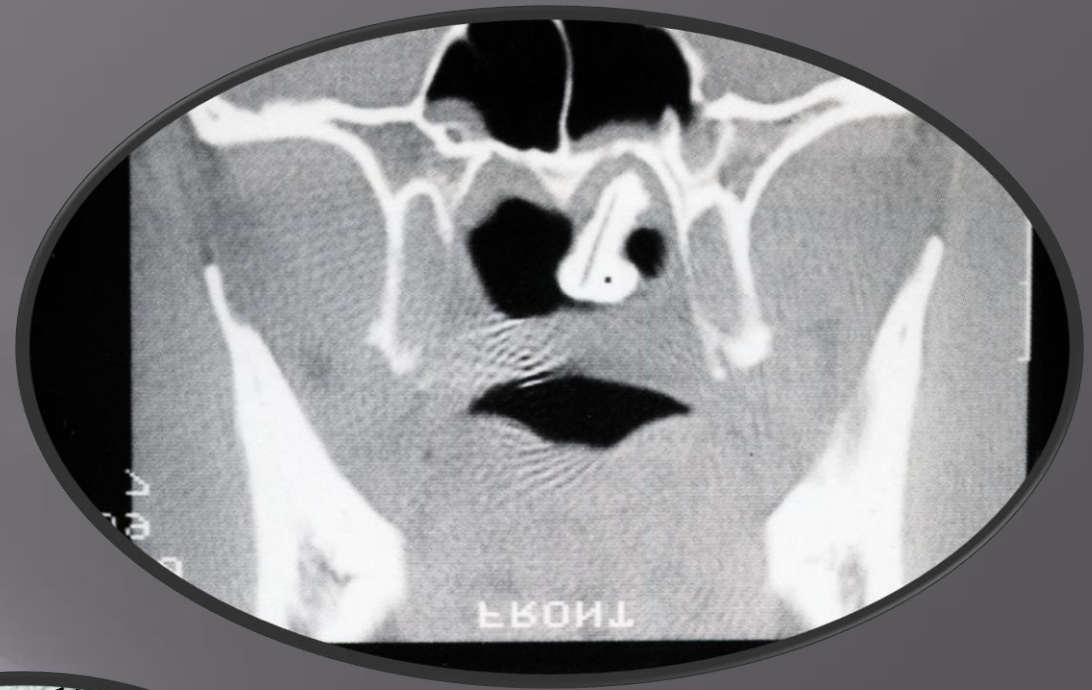
Metal screw



**Cardboard
Carton**

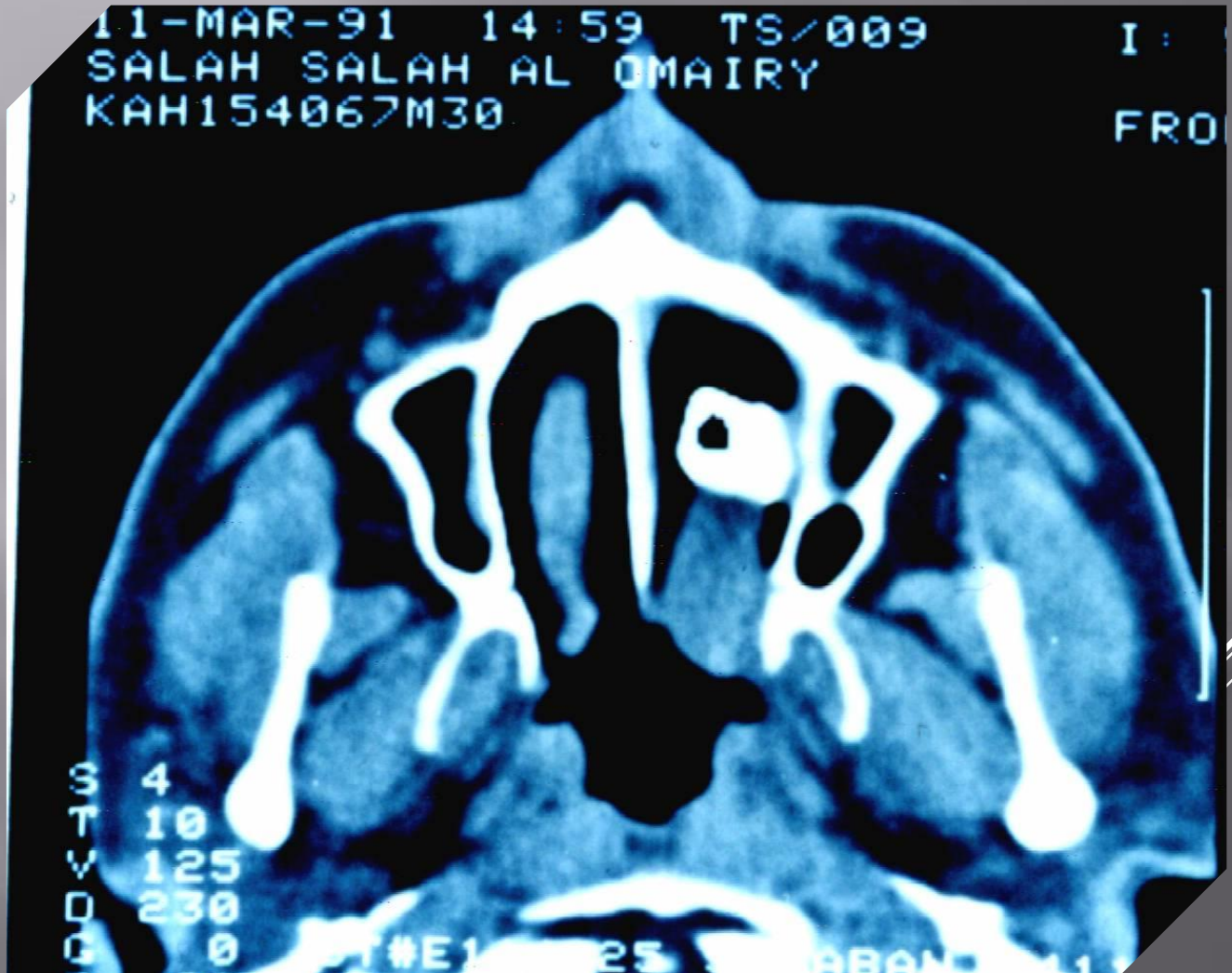


RHINOLITH





RHINOLITH



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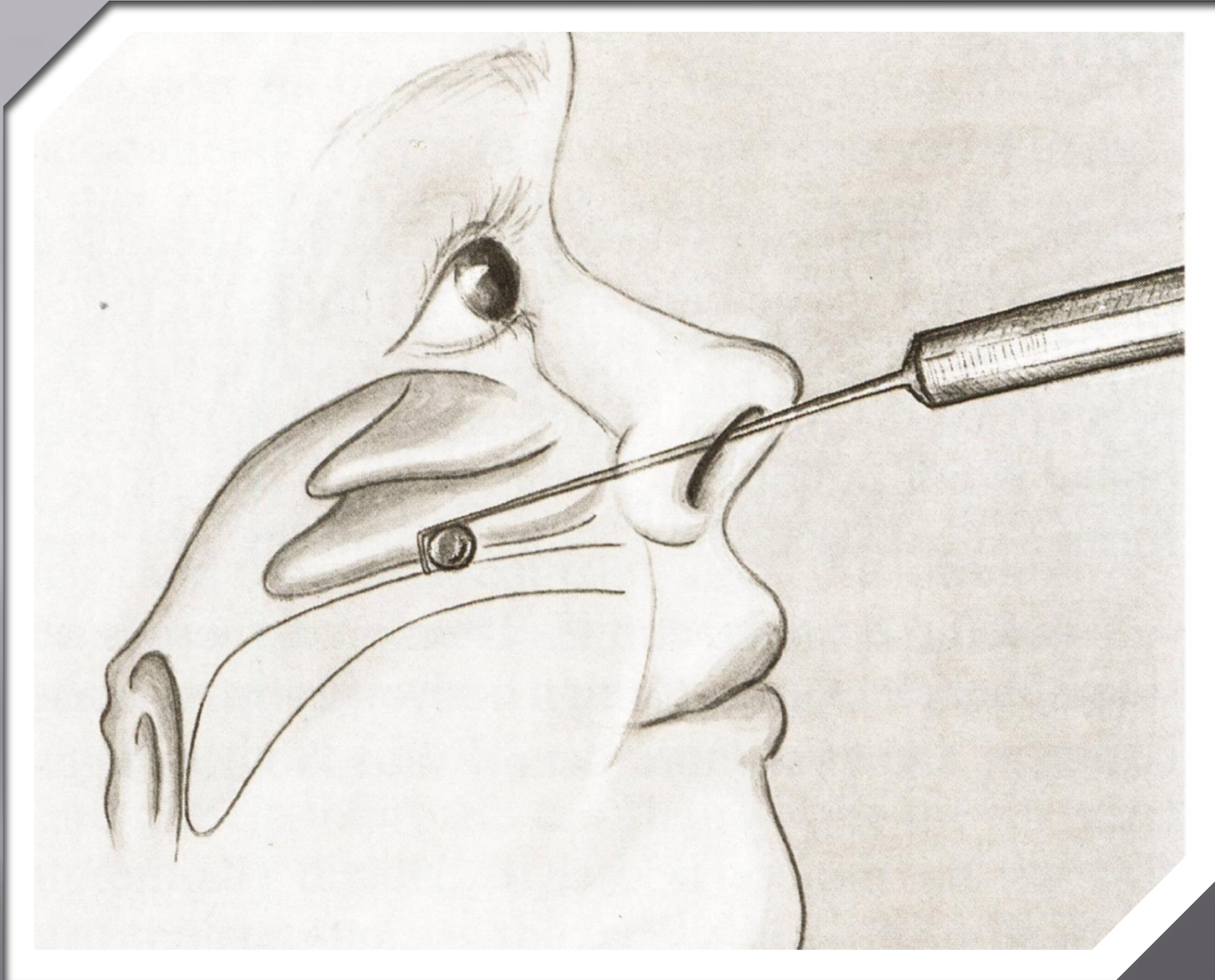
- ▣ Unilateral,
- ▣ Offensive,
- ▣ Purulent nasal discharge
- ▣ in a child is usually due to



(Foreign Body)



**Nasal Foreign
Body**



Removal of Nasal foreign Body

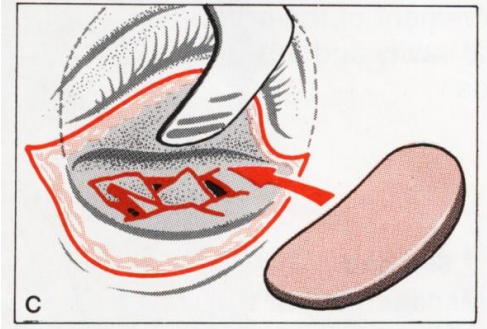
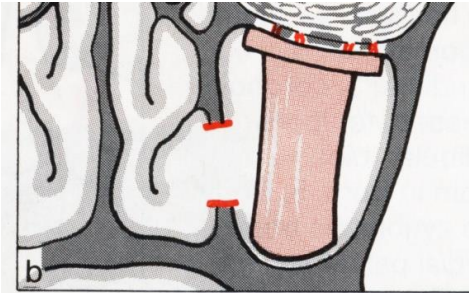
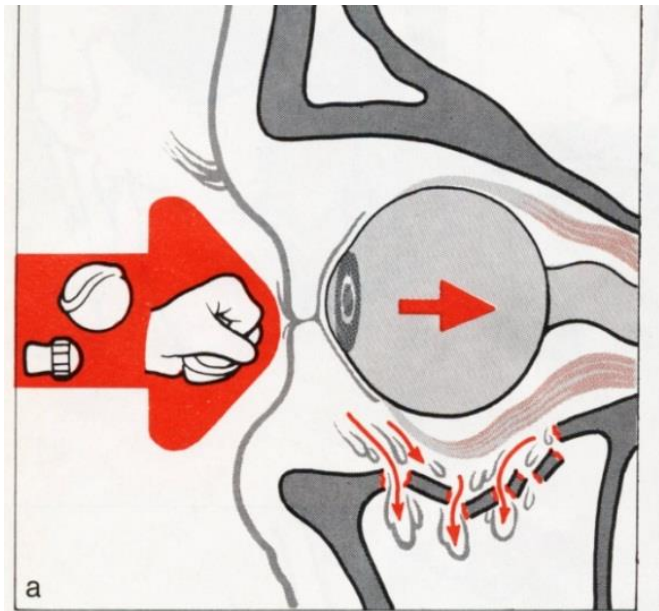
Isolated Blowout Fracture



- ❑ Fracture of the orbital floor
- ❑ Descent of the orbital contents (Maxillary Cavity)
- ❑ Blunt force, ocular bulb
- ❑ Medial zygoma, infraorbital rim

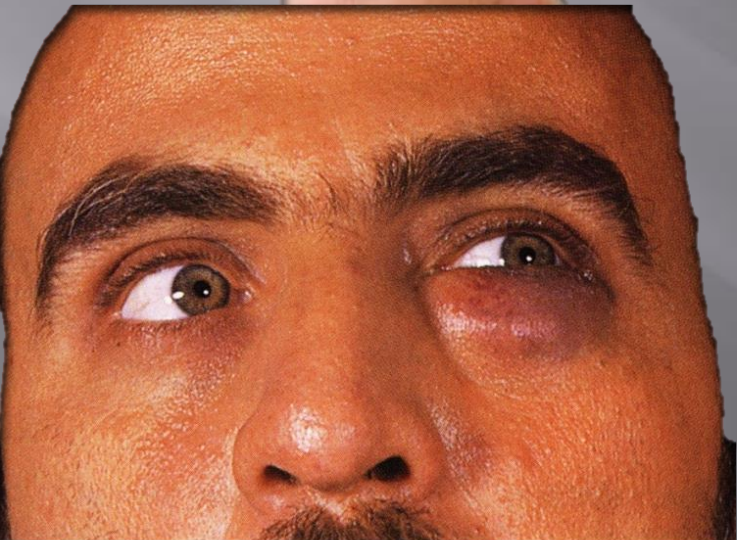
ISOLATED BLOWOUT FRACTURE

- ▶ Localized violence to the Orbital contents
- ▶ A blow (a fist, a tennis ball, a sq. ball, cork, etc.)
- ▶ Fractures of the orbital thin bony floor
- ▶ Trapping of the orbital contents (Orbital fat, inferior rectus, inferior oblique muscles)





- Enophthalmos is due to orbital herniation
- – Double vision
- – Limitation of eye movement due to entrapment of fibrous septa in orbital fat, or the inferior rectus MS
- – Infraorbital nerve sensation disorders



Clinical features

Diagnosis

Inspection: enophthalmos ,abnormal position of the bulb

Palpation: infraorbital rim, cutaneous emphysema

Bulbar movement: double vision

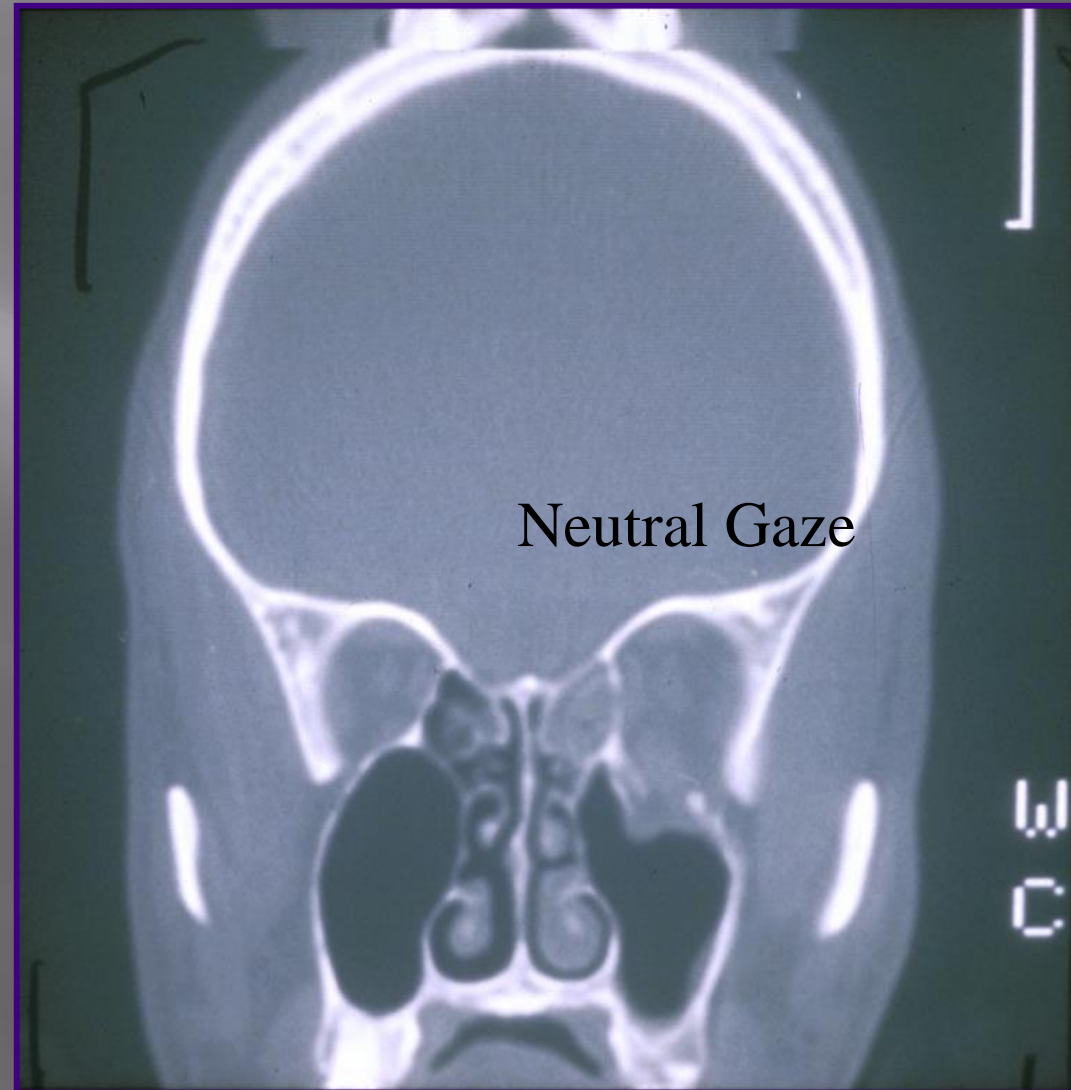
Infraorbital nerve sensation

- nasal endoscopy &CT
- Ophthalmologic examination

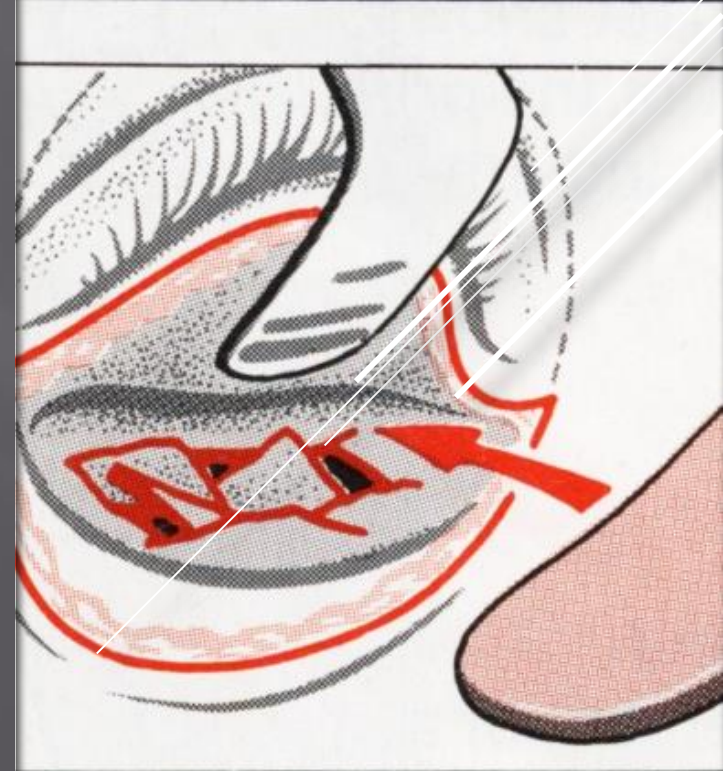
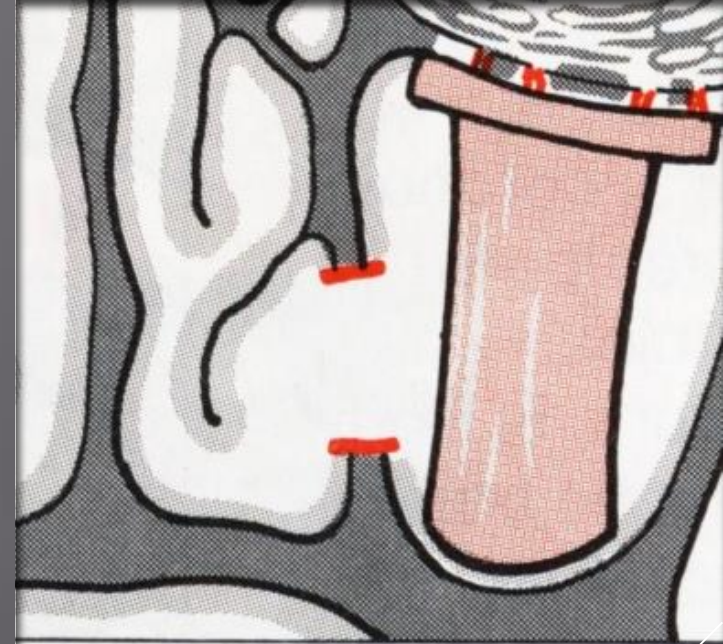


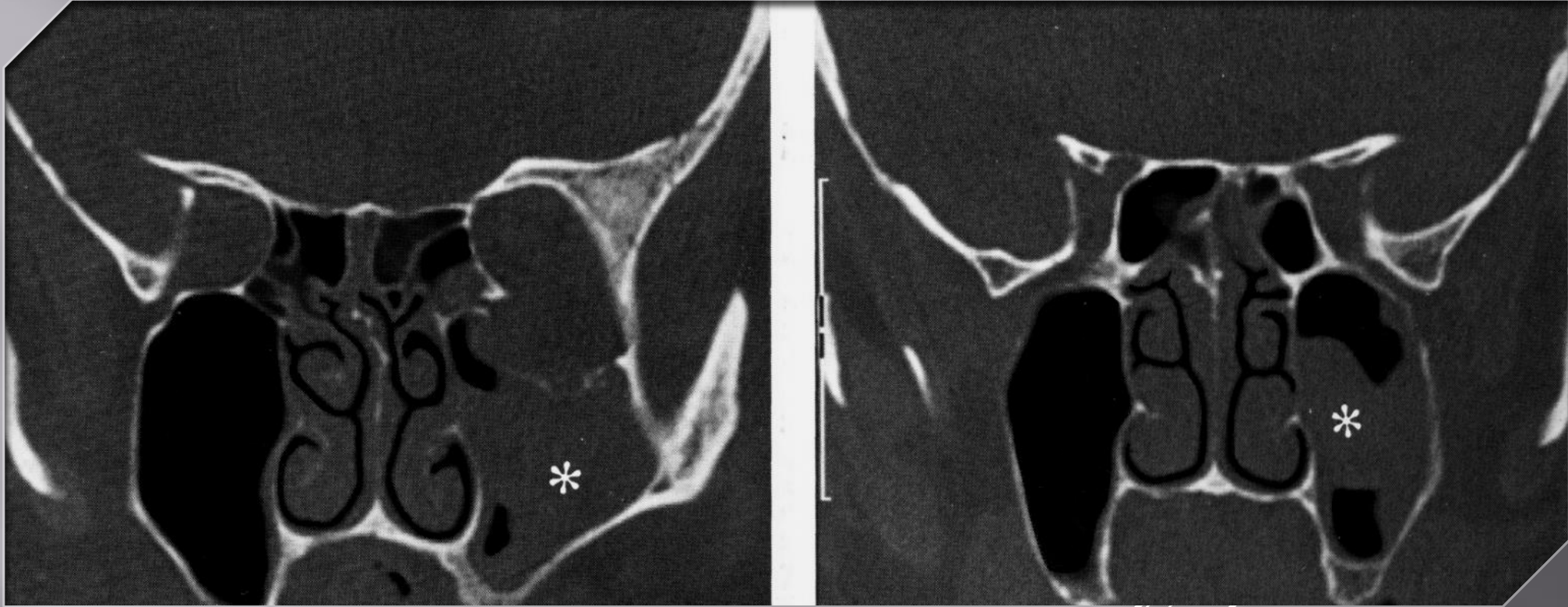
Orbital Floor Fracture Evaluation

Left Orbital Floor Fracture
required exploration and
reconstruction of the orbital
floor



Orbital Floor Fracture Evaluation





Blowout Fracture

Key Points:

1. In orbital trauma, check the eye movements, palpate the bony orbital rim, and record visual acuity.
2. In patients with facial injury, always check the full range of jaw movements and determine whether or not the upper jaw is mobile. Fractures of the cheek bone (zygoma) are often overlooked.
3. Wear eye protection while playing racquet sports.