Basics how to manage facial fractures . For a general dentist its important to know the basics of diagnosis , management , options available for treatment.

So just to remember the basic structures of the face , maxilla, nasal bones, ethmoidal , zygoma, frontal bones .

\*Evaluantion of patients with facial trauma:

1 \*\*Immediate assessment

* Cardiopulmonary stability: (the maxillofacial trauma is subject for elective treatment not an emergency wheras the essential parts like airway ,breathing, circulation , blood pressure, no hypovolemia as a result of blood loss are the ones we should seek trearment for )
* Neurologic status & c-spine

Neurologic :(glasgow coma scale can give indication about awareness of the patient from 1-15 , normal above 13 , 8 unconcious )

c-spine: Try not to move the patient (head and neck )till you rule out absence of cervical spine injury.and try to stabilize the head and neck with a sand bag for example and her we are talking about the trauma scene not the hospital

* Areas of potenial trauma (chest, abdomen, pelvis) injuries to these areas may lead to a lot of blood loss (leters) which can be fatal so usally we try to save more risky areas before moving to other areas that can wait .

2\*\*History and physical examination

* Complete history (from pt or family): How, When, What ..? analyzing the exact etiology of trauma and help us in treatment plan
* Physical examination:

- Inspection of face & cranium, cranial nerves. Most importantly 5th 6th / and 3rd and 4th regarding orbital trauma / and the 7th ,so actually many of them are involved . facial and trigeminal nerves are responsible for facial muscles so injury to them might lead to paresthesia , anesthesia in maxilla, upper lip, lower lip .

Orbital trauma might affect the abducent nerve and the muscles of the eye .trochlear ,oclear , olfactory in nasal trauma .

\*Assessment of midfacial bones

**extraoral** examination :

- mobility of nasal bone. Anterior maxilla , posterior maxilla, and the zygoma if there is any clinical depression , asymmetry affecting the base , swelling (difficult to assess it but if its in the early stage you can auto palpate it ,if there is any step , mobility , clicking ,crepitus )

- flatness of cheeks.

- laceration.

- active bleeding

**Intra-**oral assessment : bimanually or bidigitally try to mobilize the maxilla , if there is any anterior open bite ,lateral open bite or diastema, all of these signs should be reported and they help to decide what to do next .

***\*characteristic signs and symptoms :***

* \*Periorbital ecchymosis : blood around the orbit (black eye if unilateral, racoon eyes if bilateral)
* facial edema
* Epistaxis : blood coming from the nose , can be an indication of general maxillary fracture which can lead to bleeding to the sinus

-it might be mixed with whitish fluid, CSF, if trauma reached anterior cranium fossa.

* cerebrospinal fluid leakage (clear fluid mixed with blood, “tram lines”) should be identified might lead to meningitis
* Asymmetry of the nose: fracture of nasal bones

* traumatic telecanthus : increased distance between the eyes, possibly following nasal-ethmoidal fracture that result in distortion and loss of attachment in medial canthal ligaments
* flat nasal bridge :fracture of nasal bone , it get depressed
* dish-shaped face :all the facial skeleton goes in
* Intraorally : fractured teeth, vestibular ecchymosis
* edema, palatal ecchymosis, mucosal lacerations and bleeding, steps or diastema of maxillary teeth and malocclusion

\*The dr showed a photographs and asked for what we see in it :

(picture #1) photographs for a pt fell from 5th floor

The patient was stable for short period of time, then had disseminated internal bleeding and died.

- periorbital acchymosis

-deviation of the nose

-flat nasal bone

-edema

-unconcious

-tracheostomy

(picture #2)

-severe facial edema due to panfacial trauma

-blood all over

3\*Radiological examination:

* C-spine series : to rule out the presence of any cervical fractures
* Plain x-rays:

Occipitomental, lateral skull, PA skull, submental vertex, OPG(not easy especially if unconscious )

* CT scanning (& 3-d reconstruction) (most common and most useful)
* Cone beam

Dr. showed a 3D radiograph for patient with gunshot. Such type of photos contain more artifacts and not precise as segmental CT. Multiple fractures and discontinuities in multiple facial bone: frontal bone, lateral side of orbital wall, orbital floor, lateral side of nasal bone and the mandible. Patient relatives claim that the pt was trying to suicide! But that was not the case, they were trying to kill him!. This important for forensic issues and patient safety as his relatives should not be allowed to enter ICU.

\*so #D radiographs are useful for assessment.

**So what causes midface traumas?**

* Major causes: motor vehicle accidents, fights, falls, sport-related incidents, work-related incidents, gunshots. (each society has different causes , in Jordan gunshots are more common especially in weddings ,fights as well )

-here we have a problem that there is no distribution for hospitals , that’s why its not very common to see trauma cases in JUH

**Classification of mid-face trauma:**

- the most common is that of French surgeon, LeFort classification, related to pattern of trauma.(drops skulls on the ground to see pattern of fracture)

I: separation of the maxilla from the mid face. So the fracture is within the maxilla, above roots of teeth, below the nasal fossa and extend posteriorly to ptyregomaxillary fissure.

II: fracture in maxillary and nasal bone. It is pyramidal or triangular in shape.

III: full detachment of mid facial skeleton

Note: We can have different LeFort classes on each side of the face.

We can get the right classification from the examination and the x-rays

Another photographs for a patient with a road traffic accident, symptoms: bilateral ecchymosis, swelling, nasal deviation, laceration and mid palatal fracture which resulted in severe median diastema, palatal split . In the 3D CT, subcondylar fracture and zygomatic fracture are obvious. The patient has LeFort class I on one side and class II on the other. Treatment for this patient is reduction and fixation. Inside the operation there was difficulty in attaining occlusion anteriorly because the patient already has anterior open bite and increased lower facial height , what the dr. realized following the operation.

That’s why we ask for previous photos to help us in retaining the correct facial appearance .

Another case: an axial scan of CT for a patient with mid facial trauma, both maxillary sinuses are filled with fluid (blood) anterior wall of maxillary sinus is broken , lateral orbital walls are attached with the zygoma, and the zygoma has a body and a frontal process , lateral and maxillary process so when a fracture happen it will rotate and it will involve the whole processes.

\*I used some extra notes from last year’s sheet

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