Oral and Maxillofacial Surgeons and the seriously injured patient

Barts and The London NHS Trust
How do you assess this?
Primary Survey

A  Airway & Cervical Spine
B  Breathing & Ventilation
C  Circulation & Arrest Haemorrhage
D  Disability
E  Exposure
Airway & Cervical spine
Emergency airways

- A attempt should be made at oro-tracheal intubation by an experienced senior anaesthetist
- If this fails, needle crico-thyroidotomy is the next step, with jet insufflation. It will buy 30 to 40 mins.
- Another option is open crico-thyroidotomy with insertion of a size 6 ETT
- TRACHEOSTOMY HAS NO PLACE IN THE EMERGENCY ROOM (and is not in the ATLS protocol)
Acute airway embarrassment from GSW
Circulation & Control Bleeding
Controlling acute maxillofacial bleeding

- Midface fractures bleed profusely.
- Place a medium mouth prop on each side and insert an epistat into each nostril
- Inflate the posterior balloon with saline, tug back and then inflate the anterior one.
- If epistats are not available then pack the nose using posterior nasal packs.
Epistats
Nasal Packs
D for disability (neurological)
Secondary Survey

- A systematic examination of the entire body from head to toe.
- Carried out only once the primary survey has been completed and the resulting issues dealt with.
- A thorough Maxillofacial examination is part of the secondary survey, systematically examining all the facial structures to identify potential injuries. Document findings clearly.
Maxillofacial Secondary Survey

- **LOOK** for swelling, bruising, lacerations, or signs specific to facial bone fractures (e.g. subconjunctival haemorrhage or Battles sign).

- **FEEL** the entire facial skeleton by bilateral palpation to elicit crepitus or steps. If patient conscious test sensation.

- **MOVE** the maxilla and mandible to see if there is abnormal mobility indicative of a fracture e.g. lefort 2/3

- **EXAMINE** the eyes for globe injury, visual acuity, pupils and orbit disruption. *(Ophthalmology. Auroscope for ears)*

- **EXAMINE** the oral cavity for signs of facial bone fractures, avulsed or fractured teeth and dental occlusion.

- Reassess once extubated...
Skull Base Interface - CSF...
Imaging

- Seriously injured patients usually are going to the CT scanner for their brain, doing axial scans of the facial bones takes minimal extra time. Ask for 3D reformat.

- Conscious co-operative patients can have a facial bone series (OPG, PA jaws and single Occipitomental).

- Further imaging is carried out according to the specific injuries identified by the facial bone series or the clinical examination.

- Chest x-ray if unaccounted missing teeth
Maxillofacial Trauma
Soft Tissue Trauma
Consider the Anatomy..and the mechanism

- Facial nerve
- Parotid duct
- Vasculature
- Bones
Soft Tissue Trauma

- **Immediate management**
  - Inspection
  - Irrigation
  - Debridement
  - Haemostasis
  - Closure and repair

- Tetanus & Antibiotics

- Know when to refer
Know when to refer...
Suspect vascular injury
Beware penetrating neck wounds

- Size and Level of entry wound is unreliable.
- Do not explore depth with your finger! Anything deeper than platysma MUST be formally assessed.
- Obtain history from ambulance crew - type of weapon, amount of blood loss at scene, vital signs
- Haemodynamic status is important (pulse and BP)
  - If unstable at scene and unstable in resus room - need exploration in main theatre with a vascular surgeon and on table angiogram facility
  - If unstable at scene but stable in resus room - investigate further with CT angiogram
  - If stable at scene and stable in resus - explore and close at leisure
Hard Tissue Trauma

- Mandible
- Central midface
- Lateral midface including orbit
- Dental trauma
Mandibular Fractures
Sites of Weakness
Pathognomonic Signs
Condylar Fracture
Central Midface Fractures
Nasal Bones
Nasoethmoid

- Telecanthus (>35mm)
- Blunting of canthal angle
- Loss of nasal bridge projection
- Upturned nasal tip
- Loss of almond shaped eye
Nasoethmoidal fractures
Best chance of correction is at the time of injury..
Orbital Fractures
Supra Orbital Fractures
Operative View
Maxillary & Midface Fractures
Le Fort fractures
Signs of Le Fort 2/3 injury

- Severe swelling/bruising (football)
- Subconjunctival haemorrhage and chemosis
- Diplopia and limitation of eye movements
- Panda eyes/Battle sign/CSF leaks = skull base
- Malocclusion and pathological movement of midface
Le Fort 2/3 fractures
“Panda eyes”
Le Fort II + Palatal Split
Lateral Midface
Zygomatic injury
Eye signs
Zygomatic Complex Fracture
Injured Anterior Teeth
Timing of definitive treatment

- Maxillofacial bleeding or loss of vision requires immediate intervention.
- Non-brain injured patients can have definitive facial fracture treatment once swelling has reduced and investigations completed, usually first 2 days for mandibles, and 5-10 days for midface/orbit fractures.
- Brain injured patients need combined care by Neurosurgeon, Maxillofacial Surgeon and Ophthalmic surgeon. Timing of Maxillofacial fracture fixation is a team decision, taking into account the risks of worsening the brain injury against the morbidity of leaving the fractures untreated. Try to fix mandible early, midface can wait 2 weeks, by which time the neurological picture will usually have cleared.
Thank you.