The Management of the Facial Trauma Patient

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Goals

• How to assess a facial trauma patient
• Association with other “head” injuries
• Early management principles
• Cases with principles of management
The Facial Trauma Patient

- Case 2.
- 20 year old male MVC, thrown from car.
- Major facial injury with abrasions and lacerations about the left face.
- He can open his right eye to command and is moving all his extremities except his left leg.
- His left eye is swollen shut.
- His left ear is partially avulsed.
- Initial vitals were BP 80/40 mmHg, HR 110 bpm, RR 24 pm, O2 sat 94% on supplemental O2.
The Facial Work-Up

- Soft tissue inspection
  - Lacerations, bleeding, bruising,
  - Facial nerve function
- Hard tissue
  - Palpation, crepitus, instability, mobility
- Ocular exam
- Neurologic assessment
- Occlusion
Facial Assessment

• 4 life-threatening considerations in initial assessment
  1. Maintenance of airway
  2. Prevention of hemorrhage
  3. Identification and prevention of aspiration
  4. Identification of other injuries
     • Brain
     • Globe
     • Spine
Airway considerations

• Fractures may be displaced and narrow the airway
• Swelling, hematoma may narrow airway
• Symptoms include:
  – Noisy respiration, stridor, hoarseness, retraction, drooling, inability to handle secretions
• Treatment options:
  – endotracheal intubation, tracheostomy
Hemorrhage in facial trauma

- Profuse bleeding can be from partially transected veins or arteries
- Bleeding can come from deep tissues, sinus lining
- Avoid blindly applying clamps as this can result in facial nerve paralysis
- For uncontrollable bleeding:
  - Reduction of fractures (or facial compression dressing)
  - Nasal packing
  - Embolization
  - External carotid ligation
Prevention of aspiration

- Aspiration can occur in maxillofacial trauma
- Associated brain injury can depress LOC
- Aspirated material can be blood, gastric contents, teeth
- If there is a concern, prevention is by endotracheal intubation
Association with other “head” injuries

- Brain Injury
- Spine Injury
- Ocular Injury
- Dental Injury
- Sinus Injury
Brain Injury

• Association of traumatic brain injury in facial fractures is high

• Association of minor head injury (concussion) is high even in minor facial fractures
When is the best time to operate?

- Issues surrounding elevated intra-cranial pressure and decreased cerebral perfusion
- Does surgery worsen outcomes for brain injury?
- Does a delay of surgery worsen outcomes for facial reconstruction?
- While studies have documented ICP and perfusion changes with surgery, there is no clear association with outcomes
- A short delay in treatment does not alter facial outcomes
- Patients with brain injury should have surgery as soon as they are neurologically stable
Ocular Injury

• Association of ocular injury with facial fracture:
  – Minor – 55%
  – Major – 10 %

• Include:
  – Globe rupture
  – Retinal hemorrhage
  – Diplopia
  – Traumatic optic neuropathy
  – hyphema
  – Corneal abrasion
Spine Injury

- In setting of isolated facial fracture (mandible, nose, orbit, maxilla/zygoma), incidence of spine injury ranged from 4.9-8 %
- In setting of multiple facial fractures, incidence ranged from 7 – 10.8 %

- Surgery should be delayed until spine is stabilized
- Options for stabilization are
  - Cervical Collar
  - Mayfield Skull Clamp
Early Management Principles

• Thorough history and physical examination
• Appropriate radiographs
  – CT face if suspected facial fracture
• Close all lacerations
• Antibiotics for intra-oral fractures
• Splinting of fractures with wires/intermaxillary fixation if delay to treatment
• Early surgical management
Nasal fractures
Zygoma Fractures
Frontal and Mid-face fractures
Conclusions

• Emergency management of facial trauma includes assessment of airway, bleeding and risk of aspiration
• Facial fractures are commonly associated with brain, spine and ocular injuries
• Management issues often involve a multi-disciplinary approach