Faceoff for Trauma

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- You respond to 911 call for a ATV vs. tree at the end of Patterson St. and Lake Mendota. A 28 year old man has been ejected over the handlebars of a four wheeler. He was not helmeted.
- Upon arrival they find the man sitting up dazed by the tree. He is conscious. He has facial deformity with blood from his nose and in his mouth. Respirations are slightly rapid.
- What do you do?
Patterns of Injuries
Causes of Facial Fractures
Blunt trauma to face most frequent cause
Air Bag Injuries

- Facial burns & corneal abrasions/burns
- Head, neck & chest injuries in short adults & children
Sports Related Facial Injuries

- 72 percent of sports-related eye injury occur in people less than 25 years of age. Ninety percent of eye injuries are avoidable.

- Moderate to high risk sports include: hockey, lacrosse, soccer, football, volleyball and racket sports.
Playground Facial & Neck Trauma

How Kids Get Hurt

- Falls to surface
- Falls to equipment
- Impact with stationary equipment
- Impact with moving equipment
- Crush points, sharp edges, entanglement, head or neck entrapment

Warning: Drawstrings can catch and kill children. Cut all drawstrings immediately.
Facial Trauma from Diving & Falls
Facial Trauma from Assaults, Guns, Knives & Animals
Facial Trauma

Airway – Obstruction
Breathing – Aspiration
Circulation – Hemorrhage, Ischemic Injuries
Vision – Eye, Orbit or Retinal Injuries
Malocclusion & Dental Injuries
Cosmetic Effects
Neck – ABC Issues
Airway Obstruction

- Edema or hematoma of the pharynx
- Blood, vomit, bone, or teeth in the airway
- Unsupported soft tissue
- Hematoma, air or edema in neck compressing trachea
Bleeding & Hematomas

- Bleeding from eyes, ears, nose, mouth
- Hemorrhage to the point of hypovolemic shock
  - Arterial bleeding
- Hematomas & expanding hematomas
Soft Tissue Injuries of the Eye
Corneal Injuries

- Abrasions, lacerations, foreign bodies
  - Signs & symptoms
    - Pain
    - Foreign body sensation
    - Photophobia
    - Decreased visual acuity
Anterior Chamber Eye Injuries

Hyphema – blood in the anterior eye chamber
Grade I (1/3 full), Grade II (1/3-½ full), Grade III (½-near completely full- Looks like an eight ball)

- Stretching & indenting globe
- Tears the ciliary body & iris
- Signs & symptoms
  - Blood in anterior chamber -↑ intraocular pressure
  - Deep, aching pain
  - Changes in visual acuity
Globe Injuries

- Ruptured globe
  - Penetrating eye injuries – projectiles, stab wounds, missiles, foreign bodies, sudden acceleration or deceleration, fxs.
- Signs & symptoms
  - Acute, unilateral ↓ in visual acuity
  - Extrusion of intraocular contents
  - Flattened anterior chamber
  - Subconjunctival hemorrhage or hyphema
  - Decreased intraocular pressure
  - Restricted extraocular eye movements
Retinal hemorrhage from blunt trauma

- Signs & symptoms
  - May or may not have ↓ visual acuity
  - White, cloudy visual discoloration
  - Lace-like vision
  - Flashing lights/shooting stars
Orbit Fractures

- Orbital Blowout Fractures
  - Caused by blunt blow from a large object (fist, bat, ball, elbow) – Orbital floor gives way
- Signs & symptoms
  - Pain - cheek
  - Swelling
  - Ecchymosis of lids & area around the eye
  - Subconjunctival hemorrhage
  - Facial asymmetry
  - Enopthalamos
  - ↓ Ocular motion
  - Double vision/diplopia
  - Step-off fracture - pain, subcutaneous
  - Hypoesthesia
Chemical Eye Injuries

Acid, alkaline, organic substance (splash) into eye

- Signs & Symptoms
  - Pain
  - Corneal opacity
  - Coexisting burns of lids
Nasal Injuries

Signs & Symptoms

- **Epistaxis** - Blood coming from the nose
- **Bruising** around the eyes
- **Difficulty breathing** through the nose
- **Misshapen appearance** (may not be obvious until swelling goes down)
- **Pain**
- **Swelling**
Treatment of Nasal Trauma

- Reassure the patient
- Have them sit leaning forward with mouth open to breath
- Elevate backboard if need to immobilize
- Cold compresses/ice
Tooth Loss or Fractures

Place in Milk or Saliva – Replace w/i 30 Minutes
Maxillary Injuries

LaFort I & II - Unstable Injuries

**LaFort I** – Separates hard palate, teeth from maxilla
- Swelling, lip laceration, malocclusion
- ? Independent movement of maxilla from rest of face

**LaFort II** – Pyramid fracture of midface separates nasal & lower maxilla from facial skull & cranial bones
- Massive facial edema
- Nasal swelling
- Malocclusion
- CSF rhinorrhea
Unstable Injuries: LaFort III

***Separates the entire midface from the cranium
Maxilla, zygoma, orbits, cranial base fractures

- Massive facial edema
- Mobility and depression of zygomatic bones
- Ecchymosis
- Anesthesia of cheek
- Diplopia—double vision
- Open bite or malocclusion
- CSF rhinorrhea
Le Fort Fractures
Mandible Injuries

- Fracture sites at Canine & 3rd molar tooth, angle of the mandible, & condyles

- Signs & Symptoms
  - Malocclusion
  - Inability to open mouth
  - Inability to close mouth
  - Pain on movement
  - Facial asymmetry
  - Edema or hematoma at fracture site
  - Blood behind or ruptured ear drum
  - Anesthesia of lower lip
Facial Injuries - Assessment

- Maintain airway, O2, suction, oral airway, ETT, King or Combitube
- Control the bleeding
- Irrigate chemical burns to eyes or face
- Stabilize impaled objects
- Assess for visual changes
- Patch/shield affected eye per protocol or medical direction except in globe rupture – shield the other eye
- Elevate head of backboard
- Oral gastric tube to control vomiting
- Assess for boney abnormalities
- Assess for cranial nerve damage
  - Loss of eye movements
  - Facial, lid, eyebrow droop/movement
  - Loss of facial lines
Ear Trauma

- Lacerations
- Contusions – Battle Sign
- Frostbite
- Thermal or chemical burns
Perforated Tympanic Membrane

- Diving, waterskiing, “Blob” injuries
- Direct blow to ear
- Explosions
- Foreign Objects
Ear Assessment

- Hemorrhage?
- Deformity?
- Burns?
- Frostbite?
- Hemorrhagic otorrhea?
- Hearing loss?
- Penetrating object?
Ear Trauma Treatments

- Direct pressure/pressure dressing to stop the bleeding
- If ear part amputated-wrap in saline & place in plastic bag “on, but not really on ice”
- Stop the burning process, plastic wrap for pain. If chemical injury – irrigate, irrigate, irrigate!
- Stabilize penetrating object
Neck Injuries

- Depends on structures affected
- Potential for bleeding
- Potential for ischemia
- Potential for airway disruption
Non-spinal Cord Neck Injuries

- Injuries to airway – trachea or larynx, blood vessels, esophagus, glands, thoracic duct or brachial plexus

- Signs & Symptoms
  - Dyspnea
  - Hemoptysis
  - Active bleeding
  - Subcutaneous emphysema in neck, face, chest
  - ↓ Breath Sounds/Absent
  - Pulsatile mass or ↑ hematoma
  - Loss of anatomic prominence
  - Bruits
  - Hoarseness
  - Difficulty swallowing
  - Nerve deficits
Non-spinal Cord Neck Injuries

Blunt or Penetrating Trauma

- Treat the problem!!!
  - Airway
  - Breathing
  - Circulation
  - ? Spinal cord injury
Injury Prevention

- No Q-tips in ears
- Helmets & face masks
- Mouth guards
- Ear muffs
- Seatbelts over clavicle not neck!
Detroit Red Wings’ Captain Steve Yzerman was hit in the face with a puck while playing against Calgary in 2004. Yzerman did not wear a face shield.
Since he got his ISO 10256, head & face protection, he doesn't use his stick anymore!!