Injuries to the Eye, Face, Throat, Chest, Abdomen and Genitalia
(Class 21)

Synopsis
- Review of the anatomy of the eye, face, and chest. Injuries discussed include flail chest, pneumothorax, hemothorax, great vessel transection, detached retina, pericardial tamponade, etc. Methods of treating these injuries are discussed.

Chest Injuries

Anatomy
- Mediastinum
  - Heart
  - Aorta
  - Vena Cava
    - Superior
    - Inferior
  - Trachea
  - Mainstem bronchi
    - Most proximal portions only
  - Esophagus

Anatomy (Cont.)
- Thoracic cavity
  - Pleura
    - Visceral pleura
      - Covers lung
    - Parietal pleura
      - Covers chest wall
  - Lungs
    - Right
      - Three lobes
    - Left
      - Two lobes

Anatomy (Cont.)
- Thoracic cavity (Cont.)
  - Airways
    - Distal mainstem bronchi
    - Bronchi
    - Secondary bronchi
    - Tertiary bronchi
    - Bronchiole
    - Terminal bronchiole
    - Alveoli
• Diaphragm
  - Only superior surface in the chest

• Assessment
  - Mouth/throat/airway
    • Upper airway noises
    • Aphonia
    • Cyanosis
    • Bleeding from airway
      - Hemoptysis
        » "Coughing up" blood
      - Hematemesis
        » Vomiting blood
    - Epistaxis
  • Other soft tissue injury

• Assessment (Cont.)
  - Neck
    • Palpate trachea and larynx
    • Tracheal noises
    • Neck vein distention
    • Midline trachea
    • Subcutaneous emphysema
    • Retractions

• Assessment (Cont.)
  - Chest
    • Visualize
      - Equal bilateral expansion
      - Flail segments
      - Paradoxical breathing
      - Sucking wounds
      - Other obvious wounds
    • Auscultation (breath sounds)
      - Anterior times four if possible
      - Posterior times four if possible
    • Palpation

• Injuries
  - Open
    • Wound through the chest wall or parietal pleura
    • Examples
      - Pneumothorax
      - Hemothorax
      - Tension pneumothorax
- Sucking chest wound
  • Mechanisms of injury
    - GSW
    - Puncture wounds
    - Rib fractures
    - Anything penetrating

- Injuries (Cont.)
  - Closed
    • Wound where the chest wall remains intact
    • Examples
      - Transected aorta/vena cava
      - Rib fractures
      - Myocardial contusion
      - Pulmonary contusion
      - Pericardial tamponade
  • Mechanisms of injury
    - MVA (steering wheel)
    - Falls
    - Anything blunt

- Injuries (Cont.)
  - Compression injuries
    • Wounds caused by the chest being forcefully compressed
    • Examples
      - Traumatic emphysema
        » Lungs compressed against closed glottis
      - Traumatic asphyxia
        » Heart compression
        » Causes reversal of normal flow of blood
        » Damage to heart valves

- General signs and symptoms
  - Point tenderness
  - Inspiratory pain
  - Expiratory pain
  - Dyspnea
  - Tachypnea
  - Splinted breathing
  • Shallow rapid breathing secondary to pain
  - Paradoxical breathing
  - Guarding
  - Cyanosis
  - Tachycardia
  - Hemoptysis
  - Hypotension
Specific Chest Wall and/or Pulmonary Chest Injuries

• Rib fracture
  - One of the most common chest injuries
  - Assessment
    • Localized pain (point tenderness)
    • Contusions over site
    • Painful breathing
    • Painful coughing

• Rib fracture (Cont.)
  - Treatment
    • Airway with Spinal Precautions
      - Manual immobilization
      - Ask patient to remain motionless
      - Adjuncts as needed
        » Nasal airway
        » Oral airway
        » PTL
    • Breathing
      - High flow oxygen
        » Non-rebreathing mask
        » 15 LPM
      - Bag-valve-mask assembled and ready
      - Assist and supplement breathing as necessary
      - Artificial ventilation as necessary

• Rib fracture (Cont.)
  - Treatment
    • Stop major hemorrhage
    • Splint
      - Bindings
      - Tape
      - Large dressings
      - Pillows
      - Sandbags
      - XP-1
      - Sling and swathe
    • Transport on injured side
    • Spinal precautions, if necessary
    • NPO (non per os)
    • Frequent vital signs
    • Emergency transport, if necessary
Flail chest
- Two or more consecutive ribs broken in two or more places
- Assessment
  - All signs and symptoms of rib fracture
  - Paradoxical segment

Flail Chest Video

- Flail chest (Cont.)
  - Treatment
    - Airway with Spinal Precautions
      - Manual immobilization
      - Ask patient to remain motionless
      - Adjuncts as needed
        » Nasal airway
        » Oral airway
        » PTL
    - Breathing
      - These patients cannot move air effectively due to the chest wall being compromised, therefore ventilation with high flow oxygen is the most effective treatment you can render

- Flail chest (Cont.)
  - Treatment (Cont.)
    - Circulation
      - Check and maintain a central pulse
      - Stop Major Hemorrhage
      - IV normal saline TKO
        » 20 cc/kg bolus if hypotension present
    - Splint (DO NOT INTERFERE WITH ABILITY TO BREATHE OR VENTILATE)
      - Bindings
      - Tape
      - Large dressings
    - Spinal precautions
    - NPO (non per os)
    - Frequent vital signs
    - Emergency transport, if necessary

Simple pneumothorax
- Air between visceral and parietal pleura
- May be caused by trauma or medical problem
  - Assessment
• Dyspnea
• Absent or decreased breath sounds on affected side
• Trachea MAY deviate toward injured side when patient inhales

Simple pneumothorax (Cont.)
- Treatment
  • Airway with Spinal Precautions
    - Manual immobilization
    - Ask patient to remain motionless
    - Adjuncts as needed
      » Nasal airway
      » Oral airway
      » PTL
  • Breathing
    - High flow oxygen
      » Non-rebreathing mask
      » 15 LPM
    - Bag-valve-mask assembled and ready
    - Assist and supplement breathing as necessary
    - Artificial ventilation as necessary

Simple pneumothorax (Cont.)
• Circulation
  - Stop Major Hemorrhage
  - IV normal saline TKO
    » 20 cc/kg bolus if hypotension present
• Spinal precautions
• NPO (non per os)
• Frequent vital signs
• Emergency transport, if necessary

Sucking chest wound
- Movement of air through open chest wall wound
- Always causes pneumothorax
- Assessment
  • Most rib fracture signs and symptoms
  • Open chest wall laceration or puncture
  • Air movement through wound
    - Whistling
    - Bubbling
    - Foaming
    - "Spurting" with breathing, not pulse
• Pneumothorax signs and symptoms
• Sucking chest wound (Cont.)
  - Treatment
    • Airway with Spinal Precautions
      - Manual immobilization
      - Ask patient to remain motionless
      - Adjuncts as needed
        » Nasal airway
        » Oral airway
        » PTL
    • Breathing
      - High flow oxygen
        » Non-rebreathing mask
        » 15 LPM
      - Bag-valve-mask assembled and ready
      - Assist and supplement breathing as necessary
      - Artificial ventilation as necessary
    • Circulation
      - Check and maintain a central pulse
      - Stop major hemorrhage
      - IV normal saline TKO
        » 20 cc/kg bolus if hypotension present
  - Close the sucking wound
    - Occlusive dressing
      » Aluminum foil
      » Vaseline gauze
      » Plastic wrap
    - Close on exhalation
    - Sterility
    - Three sides to avoid tension pneumothorax
  • Patient positioning
    - Fowler's, if no spinal injury
    - Semi-Fowler's, if no spinal injury
    - Supine for CPR
    - Spinal precautions
  • NPO (non per os)
  • Frequent vital signs and monitoring
  • Observe for the development of a tension pneumothorax
  • Emergency transport
• Tension pneumothorax
- Pressurized air between visceral and parietal pleura
- Usually caused by trauma

• Tension pneumothorax (Cont.)
  - Assessment
    - Dyspnea
    - Absent or decreased breath sounds on affected side
    - Narrowed pulse pressure
    - Moves air poorly even with adequate airway
    - Tracheal deviation AWAY from the injured side (LATE SIGN)
    - Jugular vein distention (LATE SIGN)
      - Unilaterally toward injury
      - Bilateral as tension increases

• Tension pneumothorax
  - Treatment
    - Airway with Spinal Precautions
      - Manual immobilization
      - Ask patient to remain motionless
      - Adjuncts as needed
        » Nasal airway
        » Oral airway
        » PTL
    - Breathing
      - High flow oxygen
        » Non-rebreathing mask
        » 15 LPM
      - Bag-valve-mask assembled and ready
        » Assist and supplement breathing as necessary
        » Artificial ventilation as necessary
    - Circulation
      - Check and maintain a central pulse
      - IV normal saline TKO
        » 20 cc/kg bolus if hypotension present

• Tension pneumothorax (Cont.)
  - Treatment (Cont.)
    - If tension pneumothorax is due to a sucking chest wound, open the sucking wound
      - Raise the occlusive dressing
      - Allow pressure to escape
      - Reclose the sucking wound
        » Close on exhalation
    - Patient positioning
- Fowler's, if no spinal injury
- Semi-Fowler's, if no spinal injury
- Shock precautions
- Spinal precautions
  - NPO (non per os)
  - Frequent vital signs and monitoring
  - Observe for the redevelopment of a tension pneumothorax
  - Emergency transport

- Hemothorax
  - Blood between visceral and parietal pleura
  - Usually caused by trauma
  - Assessment
    - Dyspnea
    - Absent or decreased breath sounds on affected side
    - Shock may be present
    - Flat neck veins
  - Treatment
    - Same as pneumothorax
    - Patients are usually extremely difficult to ventilate
    - Treat for shock

- Pneumo-hemothorax
  - Blood and air between visceral and parietal pleura
  - Usually caused by trauma
  - Assessment
    - Dyspnea
    - Absent or decreased breath sounds on affected side
    - Shock may be present
  - Treatment
    - Same as pneumothorax
    - Treat for shock

- Pulmonary Contusion
  - 75% of chest trauma patients also have pulmonary contusion (bruising of the lung).
  - The bruising results in alveolar edema, alveolar hemorrhage and atelectasis (deflation of the alveoli)
  - This causes hypoxia and hypercarbia due to poor perfusion and reduced gas exchange in the affected area (ventilation/perfusion mismatch)
  - Most common potentially life-threatening pulmonary injury
  - Assessment
    - Small movements of the stethoscope identify areas of present then absent breath sounds
  - Treatment
• High flow oxygen

Specific Cardiac Chest Injuries

• Pericardial tamponade
  - Physiology
    • Blood between visceral and parietal pericardium
    • Usually caused by trauma
    • Heart is compressed
      - Decreased stroke volume
      - Decreased force of contraction
      - Decreased blood pressure
  - Assessment
    • Beck's Triad
      - Hypotension
      - Bilateral neck vein distention
      - Muffled heart tones
    • Pulsus Paradoxicus
      - Systolic blood pressure decreases >15 points upon inspiration
      - Due to increased thoracic pressure from inhalation further increasing compressive effect on the heart
    • Decreased pulse pressure

• Pericardial tamponade (Cont.)
  - Treatment
    • Airway with Spinal Precautions
      - Manual immobilization
      - Ask patient to remain motionless
      - Adjuncts as needed
        » Nasal airway
        » Oral airway
        » PTL
    • Breathing
      - High flow oxygen
        » Non-rebreathing mask
        » 15 LPM
      - Bag-valve-mask assembled and ready
        » Assist and supplement breathing as necessary
        » Artificial ventilation as necessary
• Pericardial tamponade (Cont.)
  • Circulation
    - Check and maintain a central pulse
    - Stop major hemorrhage
    - IV normal saline TKO
      - 20 cc/kg bolus if hypotension present
  • Patient positioning
    - Fowler's, if no spinal injury
    - Semi-Fowler's, if no spinal injury
    - Trendelenburg on LSB for shock
    - Reverse Trendelenburg on LSB to aid breathing
    - Supine for CPR
    - On injured side as a splint
  • Shock precautions
  • Spinal precautions
  • NPO (non per os)
  • Frequent vital signs
  • Emergency transport, if necessary

• Commotio Cordis (agitation of the heart)
  • Pathophysiology
    - A sharp blow to the chest at a specific point in the cardiac cycle produces ventricular fibrillation
      - Essentially the opposite of the “precordial thump” which, in some well-oxygenated patients, is used to restore normal cardiac contractions
    - Associated with children and athletics (sharply hit baseball striking a young player’s chest is documented to produce this phenomenon)
    - Occurs at a very narrow point in the cardiac cycle, hence it is very rare
      - Initiation of the T wave
      - The window of opportunity is only 10 to 30 milliseconds in duration
    - Most cases are fatal; survival is about 35% IF prompt defibrillation

• Commotio Cordis
  • Treatment
    - Airway with Spinal Precautions if necessary
      - Manual immobilization
      - Adjuncts as needed
        - Nasal airway
        - Oral airway
        - PTL
    - Artificial ventilation with high flow oxygen
    - Circulation
      - CPR as necessary
      - Early defibrillation
    - Patient positioning
- Supine for CPR
  - Spinal precautions
  - Emergency transport

Miscellaneous Chest Injuries

- Subcutaneous emphysema
  - Upper airway injury
  - Rib fractures
- Traumatic asphyxia
  - Compression injury to the chest
  - Cardiac effects
    - Blood reverses flow
    - Valves injured
    - Heart can no longer effectively pump blood
  - Pulmonary effects
    - Airways ruptured by increased pressure
    - Lungs tissue ruptured by increased pressure
- Assessment
  - Bulging, bloodshot eyes
  - Swollen tongue
  - Distended neck veins
  - Hypotension
- Traumatic emphysema
  - Lung compression against closed glottis
  - Lungs damaged by increased pressure

- Great vessel transection
  - Great vessels ripped apart
  - 85% mortality
  - Massive wounds bleed very little
- Great vessel laceration
  - Great vessels partially ripped
  - Usually dead if severe
- Myocardial contusion
  - Bruised heart
- Impaled objects in the chest
  - Apply occlusive dressing around impaled object

- Skill
  - Flail Chest
Abdominal Injuries

- Anatomical boundaries
  - Superior
    - Diaphragm
  - Inferior
    - Bladder / pubis
  - Lateral
    - Abdominal walls
  - Posterior
    - Spinal column
    - Back
  - Anterior
    - Abdominal wall

- Contents
  - Right upper quadrant
    - Gallbladder
      - Hollow organ (infection)
      - Reservoir for bile
      - Byproduct of RBC breakdown
      - Used in digestion of fats
      - Empties into duodenum
      - Most common cause of RUQ pain
      - Cholecystitis
    - Liver
      - Solid organ (bleeding)
      - Numerous functions
        » Metabolic breakdown
        » Detoxification
        » Sugar storage
        » Breaks down RBC’s
      - Frequent cause of shock
    - Pancreas
      - Solid organ (bleeding)
      - Really in retroperitoneal space
      - Produces digestive juices
      - Produces insulin
    - Hepatic flexure of the colon
    - Ascending colon
    - Transverse colon
    - Small bowel
• Contents (Cont.)
  - Left upper quadrant
    • Liver
      - Solid organ (bleeding)
      - Numerous functions
        » Metabolic breakdown
        » Detoxification
        » Sugar storage
        » Breaks down RBC's
    - Frequent cause of shock
  • Pancreas
    - Solid organ (bleeding)
    - Really in retroperitoneal space
    - Produces digestive juices
    - Produces insulin
  • Spleen
    - Solid organ (bleeding)
    - Stores, filters and produces blood
    - Composed of lymphatic tissue
    - Characteristic left shoulder pain
    - Frequent cause of shock
  • Splenic flexure of the colon
  • Descending colon
  • Transverse colon
  • Small bowel

• Contents (Cont.)
  - Right lower quadrant
    • Cecum
    • Ascending colon
    • Appendix
    • Small bowel
    • Ovary
    • Fallopian tube
  - Left lower quadrant
    • Descending colon
    • Sigmoid colon
    • Small bowel
    • Rectum
    • Ovary
    • Fallopian tube

• Types of Injuries
  - Open (penetrating)
    • Vessel injury causing hemorrhage
    • Organ injury causing hemorrhage
• Organ injury causing organ failure
• Perforation of intestines
• Visceral protrusion (evisceration)
  - Blunt (closed)
• Lacerations of organs (usually solid)
• Rupture of hollow organs
• Tearing of vessels

• Assessment
  - Subjective (History)
  • Diarrhea
  - Bloody stools
  • Melena
  - Coffee ground vomitus
  • Hematemesis
  • Nausea
  • Vomiting

• Assessment (Cont.)
  - Objective
  • Visualization
  - Bruising
  - Lacerations (protruding organs)
  - Posturing
    » Knee-chest position
    » Fetal position
    » Arms across abdomen
  • Auscultation
    » Not profitable use of time

• Assessment (Cont.)
  - Objective
  • Palpation
    - Localize pain to single quadrant if possible
    - Brief, gentle, midline palpation for pulsating mass
    - Begin in quadrant diagonally away from the pain
    - Observe for
      » Point tenderness
      » Rebound tenderness
      » Distention (Air or Blood)
  • Masses
  • Guarding

**Specific Abdominal Injuries**
• Evisceration
  - Assessment
    • Observe protruding bowel

- Airway
  - High flow oxygen
    » Non-rebreathing mask
    » 15 LPM
  - Bag-valve-mask assembled and ready
    » Assist and supplement breathing as necessary
    » Artificial ventilation as necessary

- Circulation
  - Check and maintain a central pulse
  - Stop major hemorrhage
    » Direct pressure
    » Indirect pressure
    » Elevation
  - IV normal saline TKO
    » 20 cc/kg bolus if hypotension present

- Wound care
  - Do NOT replace bowel into abdomen
  - Dressing
    » Large multi-trauma dressing
    » Moisten with sterile normal saline
    » Secure without pressure
    » Tape
    » Kerlix
    » Cravats
    » Occlusive dressing to prevent evaporation

- Patient positioning
  - Supine
  - Lateral recumbent in knee-chest position

- Shock precautions
- Spinal precautions
- NPO (non per os)
• Frequent vital signs
• Emergency transport

• Impaled object
  - Assessment
    • Observe protruding object

• Impaled object (Cont.)
  - Treatment
    • Airway
    • Breathing
      - High flow oxygen
        » Non-rebreathing mask
        » 15 LPM
      - Bag-valve-mask assembled and ready
        » Assist and supplement breathing as necessary
        » Artificial ventilation as necessary
    • Circulation
      - Check and maintain a central pulse
      - Stop major hemorrhage
      - IV normal saline TKO
        » 20 cc/kg bolus if hypotension present

• Impaled object (Cont.)
  - Treatment (Cont.)
    • Do NOT remove object
    • Stabilize object
      - Materials
        » Use sterile materials next to wound
      - Types
        » Large multi-trauma dressings
        » Pillows
        » ABD pads
        » Rolls of Kerlix
      - Secure in three planes
        » Superior-inferior
        » Lateral-medial
        » Superficial-deep
      - Secure without pressure
        » Tape
        » Kerlix
        » Cravats

• Impaled object (Cont.)
- Treatment (Cont.)
  - Patient positioning
    - Supine
    - Lateral recumbent
  - Shock precautions
  - MAST, if necessary
    - DO NOT inflate abdomen if over impaled object
  - Spinal precautions
  - NPO (non per os)
  - Frequent vital signs
  - Emergency transport, if necessary

- Abdominal wound
  - Assessment
    - Contusions or open wounds over abdomen
    - Possible distention
    - Possible hypotension
    - Possible peritoneal signs

- Abdominal wound
  - Treatment
    - Airway with Spinal Precautions
      - Manual immobilization
      - Ask patient to remain motionless
      - Adjuncts as needed
        » Nasal airway
        » Oral airway
        » PTL
    - Breathing
      - High flow oxygen
        » Non-rebreathing mask
        » 15 LPM
      - Bag-valve-mask assembled and ready
        » Assist and supplement breathing as necessary
        » Artificial ventilation as necessary

- Abdominal wound (Cont.)
  - Circulation
    - Check and maintain a central pulse
    - Stop major hemorrhage
      » Direct pressure
      » Indirect pressure
      » Elevation
      » IV normal saline TKO
        » 20 cc/kg bolus if hypotension present
  - Dress and bandage wound
- Dry, sterile dressing
  » Multi-trauma dressing
  » ABD pad
  » 4 x 4 dressing
- Bandage
  » Tape
  » Kerlix
  » Cravats
  » MAST

• Abdominal wound (Cont.)
  - Treatment (Cont.)
  • Patient positioning
    - Semi-Fowler’s, if no spinal injury
    - Trendelenburg on LSB for shock
    - Supine
    - Lateral recumbent
  • Shock precautions
    - MAST, if necessary
    - Trendelenburg, if necessary
  • Spinal precautions
  • NPO (non per os)
  • Frequent vital signs
  • Emergency transport, if necessary

Eye Injuries

• Anatomy
  - Globe (External)
    • Sclera
      - “White” of the eye
    • Iris
      - “Colored” portion of the eye
      - Smooth muscle
    • Pupil
      - Hole in the iris
  • Cornea
    - Clear anterior surface over Iris
  • Conjunctiva
    - Clear anterior covering over sclera
    - Posterior lid surface

• Anatomy (Cont.)
  - Globe (Internal)
    • Anterior chamber
    - Behind cornea
- Filled with aqueous humor

**Lens**
- Clear
- Focusing tissue
- Suspended by ligaments
- Changes shape to focus

**Posterior chamber**
- Large, innermost portion of the eye
- Filled with vitreous humor
- Clear
- Jelly-like

**Retina**
- Lines inner surface of posterior globe
- Nerve endings that sense light

**Optic nerve**
- Nervous tissue that relays sensory impulses from retina to occipital lobe of the brain

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**Anatomy (Cont.)**

- **Periorbital**
  - **Lacrimal glands**
    - Tear glands
    - Functions
      » Lubricates
      » Cleans
    - Locations
      » Lateral
      » Medial

- **Lid**
  - Functions
    » Protection
    » Decreases evaporation of tears
    » Cleans
  - Locations
    » Superior
    » Inferior

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**Assessment**

- **Vision**
  - Double vision
    - Periorbital muscle injury
    - Can also be caused by head injuries
  - Decreased acuity
    - Corneal abrasion
    - Lens injury
    - Can also be caused by head injuries
• “Color” of vision
  - Blood in aqueous humor or vitreous humor will give red tint to everything
• Movement
  - Do NOT test if
    - Impaled object
    - Extruded eye
    - Trauma
• Gaze
  - Conjugate
    - Both eyes look in same direction
  - Dysconjugate
    - Eyes look in differing directions

Assessment (Cont.)
• Pupils
  • Comparison
  • Reactivity
  • Size
• Sclera
  • Color
    - Red
    - Yellow
• Periorbital
  • Bruises
  • Hematomas
  • Deformity
  • Soft tissue wounds

Injuries
• Foreign bodies
  • Small
    - Never remove anything from the cornea
    - Flush
      » Normal saline
      » Medial to lateral
      » Continual irrigation
  • Cover both eyes
    » Dressing
    » Sterile
    » Moist
• Injuries
  • Foreign bodies
  • Large
    - Carefully remove unless impaled
      » Make certain object is NOT impaled
Do not remove from cornea
- Flush
  » Normal saline
  » Medial to lateral
  » Continual irrigation
- Cover both eyes
  » Dressing
  » Sterile
  » Moist

• Injuries (Cont.)
  - Impaled objects
    • Do NOT remove
    • Treat as per skills manual
  - Extruded, Avulsed or Eviscerated Eye
    • Treat as per skills manual
  - Retinal detachment
    • Supine position
    • Gentle transport
    • Cover both eyes

• Injuries (Cont.)
  - Chemical burns
    • Flush
      - Normal saline
      - Continual irrigation
      - Medial to lateral
      - Set up like IV
  - Thermal burns
    • Treat like chemical burn

• Skill
  - Eyeball Avulsion
  - Skills Manual pages 31 & 32
  - Video

• Facial Injuries

• Facial Injuries
  - Fractures
    • LeForte
      - LeForte I
        » Maxilla fractured away from skull
» Movable maxilla
- LeFort II
  » Maxilla and nose fractured away from skull
  » Movable maxilla
  » Movable nose
- LeFort III
  » Through orbits and nasal bone to ears

• Facial Injuries (Cont.)
  - Treatment
    • Airway with Spinal Precautions
      - Manual immobilization
      - Ask patient to remain motionless
      - Adjuncts as needed
        » Nasal airway
        » Oral airway
        » PTL
    • Breathing
      - High flow oxygen
        » Non-rebreathing mask
        » 15 LPM
      - Bag-valve-mask assembled and ready
        » Assist and supplement breathing as necessary
        » Artificial ventilation as necessary

• Facial Injuries (Cont.)
  - Circulation
    - Check and maintain a central pulse
    - Control any major hemorrhage
  - Immobilization of fractures
    - Do NOT immobilize
    - May obstruct airway
    - Discourage movement
      » NO talking
  - Spinal precautions
  - NPO (non per os)
  - Frequent vital signs
  - Emergency transport, if necessary

• Facial Injuries (Cont.)
  - Lacerations
  - Impaled Objects
    • Remove ONLY if in cheek or neck and obstructing airway or to perform CPR
• Treat as any other impaled object

**Ear Injuries**

- Leave objects in place
- Replace avulsions to natural position