Chapter 27
Injuries to the Face, Neck, and Eyes

Injuries to the Face and Neck
● Face and neck are __________________________ to injury
  – Relatively unprotected positions on body
● Some injuries are life-threatening.
  – Penetrating trauma to the neck may cause severe bleeding.
  – Open injury may result in an air __________________________ .
● With appropriate care, a patient with a seemingly devastating injury can have a surprisingly good outcome.

The Head
● Cranium
  – Contains the brain
  – Most posterior portion is called the occiput.
  – Lateral portions on each side are called temples or temporal regions.
  – Forehead is called the __________________________ region.
  – Anterior to the ear, in the temporal region, you can feel the pulse of the superficial temporal artery.

Injuries to the Face
● Injuries about the face can lead to upper __________________________ obstructions.
● Bleeding from the face can be profuse.
● Loosened teeth may lodge in the throat.
● If the great vessels are injured, significant __________________________ may occur.

Components of the Face
● Eyes
● Ears
● Nose
● Mouth
● Cheeks
6 Major Bones of the Face
- Nasal bone
- Two maxillae
- Mandible

7 The Orbit of the Eye
The orbit of the eye is composed of:
- Lower edge of the bone of the skull
- Zygoma
- Maxilla
- Nasal bone
- Protects the eye from injury

8 The Face
- The exposed portion of the ear is composed entirely of covered by skin.
- About 1 inch posterior to the external opening of the ear is the mastoid process.
- The mandible forms the jaw and chin.

9 Structures of the Neck
- Neck contains many important structures
- Supported by the cervical
- The upper part of the esophagus and the trachea lie in the midline of the neck.
- The carotid arteries are found on either side of the trachea.

10 The Larynx (1 of 2)
- Adam’s apple is located in the center of the neck.
- Other portion of the larynx is the cartilage.
11 ‣ The Larynx (2 of 2)
  ● The cricothyroid membrane lies between the ________________ cartilage and the cricoid cartilage.
  ● Soft depression in the midline of the neck

12 ‣ Other Structures of the Neck
  ● The trachea
    – Below the larynx in the anterior midline of the neck
    – Connects the ________________ and larynx with the main passages of the lungs
  ● Sternocleidomastoid muscles
    – Originate from the mastoid process
    – Allow movement of the head

13 ‣ Anatomy of the Eye (1 of 5)
  ● The design of the eye is a globe that is about 1” in diameter.
  ● Located within a bony socket in the skull called the ________________
  ● The orbit protects over 80% of the eyeball.
  ● Iris: Muscle that regulates the amount of ________________ that enters the eye.

14 ‣ Anatomy of the Eye (2 of 5)
  ● Vitreous Humor: Jelly-like fluid behind the lens.
    – In front of the lens is a fluid called the ________________ humor, which can leak out in penetrating injuries.
  ● Cornea: Transparent tissue layer in front of the pupil and iris.
  ● Pupil: Circular opening in the center of the iris.
  ● Sclera: ________________ portion of the eye.

15 ‣ Anatomy of the Eye (3 of 5)
  ● Conjunctiva: Lines eyelids, covers exposed surface of the eye (membrane tissue).
  ● Eyelid: Skin covering eye, holds lashes.
  ● Tear Glands: Produces tears to ________________ and protect eyes.
Anatomy of the Eye (4 of 5)

- The conjunctiva is a membrane that covers the eye.
- The _______________ glands produce fluid to keep the eye moist.

Anatomy of the Eye (5 of 5)

- Appearance of Eye
  - In a normal, uninjured eye, the entire circle of the iris should be visible.
  - Pupils should be _______________, equal in size, react equally when exposed to light.
  - Both eyes should move in same direction when following a finger.
  - Always note patient’s signs and symptoms including severity and duration.

The Eye as a Vital Sign

- Pupils can be:
  - Dilated
  - Constricted
  - Equal
  - Unequal
  - _______________
  - Reactive

Normal Pupils

- Normal eyes are _______________

Injuries of the Face and Neck

- Airway obstruction is always a major concern with face and neck
Airway obstruction is always a major concern with face and neck injuries.

- Face is very ___________________________ which causes major bleeding
- Blood clots easily form
- Teeth can be broken or dislodged
- Swelling can obstruct airway
- Cervical spine injury is a major concern

22 □ Soft-Tissue Injuries

- Soft-tissue injuries to the face and scalp are common.
- Wounds to the face and scalp bleed profusely.
- A blunt injury may lead to a __________________________.
- Sometimes a flap of skin is peeled back from the underlying muscle.

23 □ Facial Injury

24 □ Facial Injury

25 □ Hematoma

- Blunt injury that does ___________________________ break the skin may cause a break in a blood vessel wall.

26 □ Dental Injuries

- Mandible injuries are common.
- Most of these injuries are the result of ___________________________ collisions and assaults
- Maxillary fractures are usually found after blunt force high-energy impacts.
- Fractured and avulsed teeth are common following facial trauma

27 □ Care of Soft-Tissue Injuries (1 of 4)

- Assess the ___________________________ and care for life-threatening injuries.
- Follow proper BSI precautions.
- Blood draining into the throat can lead to__________________________ .
  Monitor airway constantly.
- Take appropriate precautions if you suspect a neck injury.

28 □ Care of Soft-Tissue Injuries (2 of 4)

- Control bleeding by applying ___________________________ pressure.
  – Do not apply excessive pressure if an underlying skull fracture is suspected.
29  Care of Soft-Tissue Injuries (3 of 4)
- Injuries around the mouth may obstruct the airway.
- Be prepared to ________________

30  Care of Soft-Tissue Injuries (4 of 4)
- Physicians can sometimes graft a piece of avulsed skin back into position.
- If you find portions of avulsed skin:
  - Wrap in a sterile dressing.
  - Place in a plastic bag and keep cool.
- If the avulsed skin is still attached in a loose flap:
  - Place the flap in position as close to ________________ as possible.

31  Eye Injuries
- Can produce severe complications
- Examine ________________ for shape and reaction.

32  Foreign Objects in the Eye (1 of 2)
- For small foreign objects lying on the surface of the eye, ________________ with saline.
- Flush from the nose outward.
- A foreign body will leave a small ________________ on the conjunctiva.

33  Foreign Objects in the Eye (2 of 2)
- To examine the underside of the eyelid, pull the lid upward and forward.
- Never attempt to ________________ an object on the cornea.
- Gently remove the foreign object from the eyelid with a moistened, sterile applicator.

34  Foreign Object in Eye

35  Impaled Objects in the Eye (1 of 4)
- If there is an object impaled in the eye, do not remove it.
● Immobilize the object in ________________.
● Prepare a doughnut ring by wrapping a 2” piece of gauze around your fingers and thumb.

36  □  Impaled Objects in the Eye (2 of 4)
● Remove the gauze from your hand and wrap remainder of gauze around ________________.
● Carefully place the ring over the eye and impaled object, without bumping the object.

37  □  Impaled Objects in the Eye (3 of 4)
● An alternative method is to use a ________________ to stabilize the object
● If object is longer than cup, carefully cut a hole in the bottom of the cup
● Use 4 X 4’s inside cup
● Place cup over object
● Immobilize with roller ________________

38  □  Impaled Objects in the Eye (3 of 3)
● Stabilize the object with roller gauze.
● Cover the injured and ________________ eye.
● Do not apply pressure to eye

39  □  Impaled Object in the Eye

40  □  Chemical Burns of the Eye
● Chemicals, heat, and light rays can ________________ the eye.
● For chemicals, flush the eye with saline solution or clean water.
● You may have to force the eye open to get enough irrigation to the eye.
● With an alkali or strong acid burn, irrigate the eye for about ________________ minutes.
● Bandage the eye with dry dressing.

41  □  Chemical Burn

42  □  Irrigating the Eye
**Thermal Burns of the Eye**
- For thermal burns, cover both eyes with a sterile dressing.
- Transport the patient to a burn center.

**Light Burns**
- Infrared rays, eclipse light, direct sunlight, and laser burns can damage the eye.
- Cover each eye with a sterile pad and eye shield.
- Transport the patient in a horizontal position.

**Lacerations**
- Lacerations to the eyes require very careful repair.
- Never exert pressure on or manipulate the eye.
- If part of the eyeball is exposed, apply a moist, sterile dressing.
- Cover the injured eye with a protective metal eye shield.

**Laceration of the Eye**

**Blunt Trauma**
- Blunt trauma can cause a number of serious injuries:
  - A fracture of the orbit (blowout fracture)
  - Retinal detachment

**Blowout Fracture**
- May occur from blunt trauma caused by a fracture of the orbit
- Bone fragments may entrap muscles that control eye movement, causing double vision.

**Retinal Detachment**
- Often seen in sports injuries
- Produces flashing lights, specks, or floaters in field of vision
- Needs prompt medical attention

**Hyphema**
- Bleeding in the anterior chamber of the eye
- May seriously impair vision
52 □ Eye Injuries Following a Head Injury
  ● One pupil larger than the other
  ● Eyes not moving together or pointing in different directions
  ● Failure of the eyes to______________ equally
  ● Bleeding under the conjunctiva
  ● Protrusion or______________ of one eye
  ● Hyphema

53 □ Pupil Size and Head Injury
  ● Variation in pupil size may indicate a head injury.

54 □ Contact Lenses and Artificial Eyes
  ● Contact lenses should be kept in the eye unless there is a ____________ burn.
  ● Do not attempt to remove a lens from an injured eye.
  ● Notify the hospital if the patient has contact lenses.
  ● If there is no function in an eye, ask if the patient has an ______________ eye.

55 □ Contact Lens Removal (1 of 2)
  ● If absolutely necessary, remove a hard contact lens with a small suction cup, moistening the end with saline.

56 □ Contact Lens Removal (2 of 2)
  To remove a soft contact lens:
  ● Place two drops of normal ______________ in eye.
  ● Gently pinch it between your gloved thumb and index finger.
  ● Lift it off surface of eye.

57 □ Injuries of the Nose
  ● ______________ trauma is common
  ● Blunt trauma to the nose can result in fractures and soft-tissue injuries.
  ● Cerebrospinal fluid coming from the nose is indicative of a ______________ skull fracture.
  ● Bleeding from soft-tissue injuries of the nose can be controlled with a dressing.

58 □ Injuries of the Ear
Ear injuries do not usually bleed much.
Place a dressing between the ear and ________________ when bandaging the ear.
For an avulsed ear, wrap the part in a moist sterile dressing.
If a foreign body is lodged in the ear, do not try to manipulate it.
Clear fluid coming from the ear may indicate a skull fracture.

Outer, Middle, and Inner Ear

Ear Injuries

Facial Fractures
A direct blow to the mouth or nose can result in a facial fracture.
Severe bleeding in the mouth, loose teeth, or ________________ bone fragments indicate a break.
Fractures around the face and mouth can produce deformities.
Severe swelling may obstruct the airway.

Dislodged Teeth
Dislodged teeth should be transported with the patient in a container with some of the patient’s ________________ or with some milk to preserve them.

Blunt Injuries of the Neck
A crushing injury of the neck may involve the ________________ or trachea.
A fracture to these structures can lead to subcutaneous emphysema (air pockets under skin).
Be aware of complete airway obstruction and the need for rapid transport to the hospital.

Subcutaneous Emphysema

Penetrating Injuries of the Neck (1 of 2)
Can cause severe bleeding.
The airway, esophagus, and spinal cord can be damaged from penetrating injuries.
Apply direct pressure to control bleeding.
Place an ________________ dressing on a neck wound.
Penetrating Injuries of the Neck (2 of 2)

- Secure the dressing in place with roller gauze, adding more dressing if needed.
- Wrap gauze around and under patient's shoulder.

Key Points

- Injuries to the face, neck, and eyes can be grotesque and bloody
- Do NOT get ________________ vision
- Always perform a complete assessment and treat injuries in the order of life threats
- CONTROL THE AIRWAY FIRST!