

## Chapter 21 Face and Throat Injuries

### Anatomy of the Head and Neck:

The head is divided into two parts:

1. \_\_\_\_\_
2. \_\_\_\_\_

The **cranium** or **skull** contains the \_\_\_\_\_ which connects to the spinal cord through a large opening at the base of the skull known as the \_\_\_\_\_. The \_\_\_\_\_ is the most posterior portion of the cranium.

The lateral portions on each side of the cranium are called the \_\_\_\_\_ or \_\_\_\_\_ regions.

Between the temporal regions and the occiput lie the \_\_\_\_\_.

The frontal region is the \_\_\_\_\_.

\*Just anterior to the ear, in the temporal region, you can feel the pulse of the superficial temporal artery.\*

The thick skin covering the cranium, which usually bears hair, is called the \_\_\_\_\_.

The **face** is made up of the \_\_\_\_\_  
\_\_\_\_\_

The major bones of the face are composed of 6 bones:

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The orbit of the eye is composed of:

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\* The bony orbit protects the eye from injury.\*

\* Only the proximal one third of the nose, known as the **bridge**, is formed by the bone. The remaining two thirds if formed by cartilage.\*

The exposed portion of the **ear** is made up completely of cartilage. That is covered by skin. The external, visible part is known as the \_\_\_\_\_.

The \_\_\_\_\_ is a small, rounded, fleshy bulge immediately anterior to the ear canal.

\* The superficial temporal artery can be palpated just anterior to the tragus.\*

The \_\_\_\_\_ is the prominent bony mass located at the base of the skull about 1" posterior to the external opening of the ear.

The \_\_\_\_\_ forms the jaw and the chin. Just in front of the ear on either side of the face, lies the \_\_\_\_\_, which allows motion of the mandible.

The neck also contains many important structures. It is supported by the cervical spine ( the first seven vertebrae in the spinal column~ C1-C7.) The spinal cord exits from the \_\_\_\_\_ and lies within the spinal canal formed by the vertebrae. The upper part of the \_\_\_\_\_ and the \_\_\_\_\_ lie deep in the middle of the neck line. The \_\_\_\_\_ can be found on either side of the trachea along with the \_\_\_\_\_ and \_\_\_\_\_.

Many useful landmarks can be seen and palpated in the neck. The \_\_\_\_\_ is the most obvious firm prominence in the center anterior surface. More prominent in men than women, the **Adam's Apple** is the upper part of the larynx, formed by the thyroid cartilage.

The \_\_\_\_\_ is a firm ridge of cartilage inferior to the thyroid cartilage and is somewhat more difficult to palpate.

A thin sheet of connective tissue located in the midline of the neck between the thyroid cartilage and the cricoid cartilage is the \_\_\_\_\_.

The \_\_\_\_\_ of the trachea are firm ridges that are palpable in the anterior midline.

\* The trachea connects the larynx with the main air passage of the lungs ( the bronchi) . On either side of the lower larynx and upper trachea is the **thyroid gland**.\*

Pulsations of the carotid arteries are easily palpable in a groove 1 to 2 cm lateral to the larynx. Lying adjacent to these arteries, but not palpable, are internal jugular veins and several important nerves.

The \_\_\_\_\_ are lateral to the internal veins and nerves. These muscles, which allow \_\_\_\_\_ originate from the mastoid process.`

## Injuries to the Face:

Injuries to the face can lead to partial or complete obstruction of the upper airway. Several factors can contribute to the obstruction:

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## Soft Tissue Injuries:

Soft tissue injuries to the face and scalp are very common. There is a rich supply of blood in the skin and underlying tissues, so bleeding from penetrating injuries may be heavy.

A blunt injury that does not break the skin may cause a break in a blood vessel wall, leading blood to collect under the skin is called a \_\_\_\_\_.

A flap of skin that is peeled back is \_\_\_\_\_.

## Emergency Care of a Soft Tissue Injury:

Treatment to the face and scalp is the **same treatment** as soft tissue injuries, elsewhere on the body.

**Assess the ABC'S and care for any life threats first. Also, follow BSI precautions in all cases.**

## Step #1\_\_\_\_\_

(remember blood draining into the throat can produce vomiting and airway obstruction)

\*If you suspect that the patient has sustained a cervical spine injury, be sure to avoid moving the neck. Use the jaw-thrust to open patients airway and then suction the mouth. Once patient is immobilized, you can turn patient to one side to allow any blood or vomit to drain out\*

## Step#2\_\_\_\_\_

Use roller gauze, wrapped around the circumference of the head, to hold a pressure dressing in place. (p. 541, figure 21-6).

Do **not** apply excessive pressure if there is a chance of an underlying skull fracture.

If an injury exposes the brain, eye or other structures, cover the exposed parts with a moist, sterile dressing to protect them from further damage. (p.541, figure 21-7)

For injuries in which the skin is not broken, apply ice locally to help the swelling of bruised tissues.

For soft-tissue injuries to the mouth, always check for bleeding inside the mouth.

\* Broken teeth or a lacerated tongue may cause profuse bleeding and obstruction of the upper airway\* (p.541, figure 21-8)

Inspect the inside of the mouth for bleeding and hidden injuries.

\* Remember, patients who swallow blood are prone to vomiting.\*

Portions of avulsed skin that have become separated should be wrapped in a sterile dressing, placed in a plastic bag and kept cool. Bag should be delivered to the emergency department with the patient. (Often, doctors will be able to graft a piece of avulsed skin)

Skin that is avulsed, but still attached, and the bed where the flap originated, should be rinsed with clean water or saline. Place the flap in a position as close to normal as possible and hold in place with a dry, sterile bandage.

### Injuries of the Nose:

Figure 21-10, on p. 542, shows the inside of the nose. The nasal cavity is divided into 2 chambers by the nasal septum. Within each chamber, layers of bone, known as \_\_\_\_\_, are covered with a moist lining. Directly above the nose are the frontal sinuses and on either side, the orbit of the eye.

All of these structures need to be assessed for injury. In extreme cases, there may also be injury to the cervical spine. CSF cerebrospinal fluid may escape through the nose or ears following a fracture at the base of the skull. If blood or drainage contains, CSF, staining of the dressing will occur.

To control bleeding from abrasions and lacerations to the nose, apply a sterile dressing. For heavy bleeding from the nose, place the patient in a sitting position, leaning forward and pinch the nostrils together. (p.542, figure 21-11).

## Injuries of the Ear:

Hearing and balance are both associated with the ear. The ear is divided into three parts, the external, middle and inner ear. Figure 21-12, on p. 543 shows the principal parts of the ear.

### The External Ear:

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### The Middle Ear:

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\*The **Eustachian tube**, which is the internal, auditory canal, connects the middle ear to the nasal cavity.

### The Inner Ear:

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While ears are often injured, they don't usually bleed much. If local pressure does not control the bleed, apply a roller dressing. (p. 543, figure 21-13) Be sure to apply a soft, padded dressing between the ear and the scalp. Bandaging the ear against the tender underlying scalp is extremely painful.

For an ear avulsion, wrap the avulsed part in a moist, sterile dressing and put in a plastic bag.

\* The external auditory canal is a favorite place for children to place foreign objects in. Never try to manipulate the object. All foreign objects should be removed by a physician.\*

\*Note any clear fluid coming from the ear of a severely injured patient, since it may indicate a fracture at the base of the skull.\*

### Facial Fractures:

Clues that patient may have a facial fracture include:

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### Dental injuries:

Fracture: \_\_\_\_\_

Luxation: \_\_\_\_\_

Avulsion: \_\_\_\_\_

\* Avulsed teeth can be placed in milk, saline or plain water for transport.\*

Injuries of the neck:

Structures of neck injuries include:

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**\* Any injury to the neck is serious and should be considered life-threatening until proven otherwise in an emergency department\***

Blunt Injuries:

Any crushing injuries to the upper part of the neck is likely to involve the larynx or trachea. One the cartilages are fractured, they do not spring back into their normal position. Such a fracture can lead to :

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is the presence of air in the soft tissues. Palpation produces a crackling sensation. If you feel this sensation, you need to maintain the airway as best as you can, and provide immediate transport. **\*\* Be aware that complete airway obstruction can develop very rapidly as a result of swelling or bleeding\***

Penetrating Injuries:

Penetrating injuries to the neck can cause **profuse** bleeding. Penetrating injuries can also cause damage to the airway, esophagus and the spinal cord.

Steps to treat most Penetrating Injuries:

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See p. 545, figure 21-1

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May occur if a vein has been opened and air has been sucked through to the heart.

\* A large amount of air in the right atrium and right ventricle can lead to cardiac arrest\*