

Injuries to the face in sport usually result from direct trauma. This chapter outlines management of injuries to the nose, ears, eyes, teeth and facial bones.

Functional anatomy

The bones of the face are shown in Figure 15.1. As most of these bones are subcutaneous, they are easily

examined. Examination should include palpation of the forehead and supraorbital rims for irregularities and contour deformities.

The orbit is a cone-shaped cavity formed by the union of seven cranial and facial bones. The orbital margin consists of the supraorbital ridge above, the infraorbital margin below, the zygomatic arch laterally and the nasal bone medially. The recess formed protects the eye from a blow from a large object. A smaller, deformable object such as a squash ball may, nevertheless, compress the eyeball and cause a 'blow-out' fracture of the orbit.

The zygomatic arch of the malar bone creates the prominence of the cheek. Fractures in this region may cause flattening of the cheek and a palpable irregularity in the inferior orbital margin.

The maxilla forms the upper jaw. Its superior surface helps create the floor of the orbit and the inferior surface forms the major part of the hard palate. Mobility of the hard palate, determined by grasping the central incisors, indicates a maxillary fracture.

The lower jaw consists of the horseshoe-shaped mandible. The mandible is made up of body, angle and ramus, which are easily palpated. The coronoid process can be palpated by a direct intraoral approach. The gingiva overlying the alveolar ridge may be lacerated in mandibular body fractures.

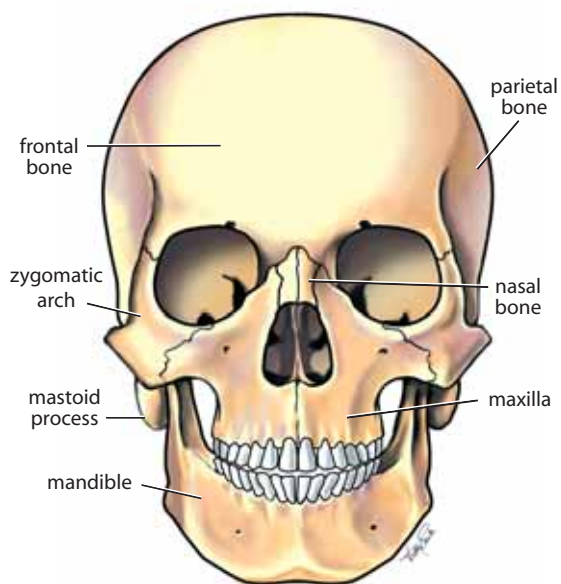


Figure 15.1 Facial bones

Assessment

Facial injuries¹ are frequently associated with profuse bleeding, however, while it is important to control the bleeding, it is also vital to assess the underlying structures fully. All head and neck injuries should be considered closed head injuries. Cervical spine precautions should be taken if the patient is unconscious or

has neurological deficits or cervical spine tenderness. The airway is particularly vulnerable to obstruction because of bleeding, structural compromise of bony structures (e.g. mandible), or dislodged teeth, tooth fragments or dental appliances.

The mechanism of injury should be ascertained and the source of the patient's pain located. Signs or symptoms of blurred vision, diplopia, concussion or cerebrospinal compromise should be evaluated.

Immediate attention should focus on:

1. identifying areas of bruising or active bleeding
2. inspecting the nasal septum and external ear for hematomas and nasal obstruction
3. observing facial asymmetry or structural depressions
4. looking for a sunken eye globe suggestive of a blow-out fracture
5. observing lacerations or deep abrasions overlying suspected fractures.

Systematic palpation of the facial bones (orbital rims, nasal bones, temporomandibular joints) will reveal significant tenderness, crepitus, numbness or contour irregularities. Midface instability or crepitus may be demonstrated by stabilizing the forehead with one hand while gently pulling on the maxillary incisors with the other gloved hand. Bimanual palpation along the mandible and maxilla (one gloved hand palpating intraorally) will uncover instability, irregularity or tenderness.

Extraocular eye movements and cranial nerves III, IV and VI can be assessed by having the patient keep his or her chin in a fixed position while tracking the examiner's finger movements in all four quadrants. If the patient is able to track the movements without reporting diplopia, acute extraocular nerve entrapment caused by an orbital blow-out fracture can be ruled out. An inability to raise the eyebrow or wrinkle the forehead following laceration to the eyebrow suggests injury to the temporal branch of the facial nerve on that side. Reduced sensation over the skin below the eye in the distribution of the infraorbital nerve may be associated with a blow-out fracture of the orbit. The nerve distribution includes the upper gum and lip.

If the patient is unable to open his or her mouth or exhibits severe pain along the lateral aspect of the cheek or jaw when attempting to open, a fracture of the mandible or zygoma must be considered. With the mouth open, the oral cavity should be assessed to rule out damage to the teeth and lacerations in the intraoral mucosa or tongue. Fractured or missing teeth should be located, when possible, to avoid acciden-

tal aspiration. When asked to close the mouth, the patient's sense of malocclusion suggests a significant fracture of the mandible, maxilla or palate.

Leakage of cerebrospinal fluid (CSF) following a blow to the nose (CSF rhinorrhea) may indicate a fracture of the base of the anterior cranial fossa. CSF is a clear discharge and the patient may report a salty taste in the mouth. If there is doubt about the origin of a nasal discharge associated with trauma, the discharge should be tested with a urinary dipstick for glucose. CSF is positive for glucose.

A list of common conditions and conditions not to be missed is shown in Table 15.1.

Soft tissue injuries

Contusions and lacerations to the face and scalp are a common occurrence, particularly in sports such as football, ice hockey, martial arts and racquet sports.¹ Examination should include palpation of the underlying bone to detect bony tenderness. Neurological examination is required if there is a history of loss of consciousness or suspected skull fracture.

Begin immediate management with ice and pressure to reduce local swelling. Control bleeding with direct pressure over the wound using sterile gauze. A player with a bleeding wound must be removed from the field of play immediately as there is concern that the presence of blood may increase the risk of hepatitis B or human immunodeficiency virus (HIV) infection for other players (Chapter 51).

After removing the athlete from the field of play, examine the laceration closely under good light. Further cleaning and removal of foreign bodies may be required. If necessary, infiltrate a local anesthetic agent to clean the wound adequately. The local anesthetic used should be 1% or 2% lignocaine (lidocaine) containing adrenalin (epinephrine) 1:100 000 to provide some vasoconstriction as well as analgesia.

Lacerations greater than 0.25–0.5 cm (0.1–0.2 in.) long should be closed if they appear clean. Closure may be obtained by suturing or by taping with adhesive strips (Steristrips). Steristrips are ideal for small wounds; however, persistent bleeding or excessive sweating may prevent adhesion. To overcome this, tincture of benzoin (friar's balsam) may be applied to increase adhesiveness. Adequate dressings will be required to keep the adhesive strips in place, especially if the player is returning to the field. Scalp wounds often bleed profusely. Small wounds can be controlled with local pressure but larger ones require suturing.

If facial lacerations require suturing, use 5/0 or 6/0 nylon. It is important that the skin edges are