TRAUMA TO THE FACE AND MOUTH

Bailey & Love’s
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Injuries to the orofacial region are common, but the majority are relatively minor in nature. A few are major and complex, requiring exacting technique and meticulous care in management. It must always be remembered that an intact and unscarred face is important to the well-being of the individual, and thus all injuries, should be treated thoughtfully and sympathetically, with every effort made to produce an optimal outcome.
The mouth and nasal passages form part of the upper airway and lacerations and fractures of the facial skeleton may give rise to immediate or delayed respiratory obstruction.

Immediate obstruction may arise from inhalation of tooth fragments, accumulation of blood and secretions, and loss of control of the tongue in the unconscious or semiconscious patient. To avoid this, the patient should always be nursed in the semiprone position with the head supported on the bent arm, and never lying on their back.

Damaged teeth, blood and secretions can then fall out of the mouth, and gravity pulls the tongue forward.
Facial injuries
■ Are potentially life-threatening (can compromise the airway)
■ Can distract the clinician from other injuries
■ May be associated with injuries to the brain and cervical spine
■ Are cosmetically very important
The examination of the patient should be under a good light with consideration of the airway and other collateral injuries in mind.

The rapid onset of oedema may make examination of the face difficult occasionally, it is impossible to prise the eyelids apart to examine the pupils.

Lacerations should be explored first and, if necessary, cleaned using sterile saline.

Gentle palpation, using both hands and wearing surgical gloves, gives the most information in searching for step deformities.
A suitable system is to examine from above downwards, the supraorbital and infraorbital ridges, the nasal bridge and the zygomas, including the arches. The mandible should then be examined starting at the condyles bilaterally and then following the posterior and lower border of the mandible as far as the midline.

The majority of middle third injuries are accompanied by some degree of epistaxis (except isolated zygomatic arch fractures), and Le Fort II and III injuries frequently have a cerebrospinal fluid (CSF) leak with anterior or posterior CSF rhinorrhea.
Fractures of the zygoma may often be associated with subconjunctival haemorrhage. This example shows no posterior border to the haemorrhage as the patient looks away from the side of the fracture.
The patient should then be examined intraorally with good illumination. The lips should be parted and the occlusion of the teeth examined. The maxillary and mandibular dentition normally fit together even if the occlusion is naturally irregular if they do not, a fracture of the jaws may be suspected.

A haematoma in the floor of the mouth is a good indication of a fracture of the mandible, particularly in edentulous cases.

Alignment of the teeth should be noted, and any missing or broken teeth and dental restorations/prostheses should be carefully recorded. The occlusal plane must be examined for the presence of step defects, often indicative of a fracture of the underlying bone. The patient should be asked to bring the teeth together,
If a fracture of the maxilla is suspected, the maxillary dental arch should be grasped between the index finger, middle finger and thumb of one hand in the incisor region, while the other is placed on the forehead. If the maxilla is fractured, gentle movement forward and backward, or side to side, will reveal movement between the examining hands.

Soft-tissue injuries within the oral cavity should be identified and recorded. Lacerations of the oral mucosa may occur independently of hard-tissue injuries, and can often involve the buccal mucous membrane and tongue.

tongue lacerations may be a source of potential haemorrhage, which may be delayed on occasion. Palatal lacerations tend to occur in young children who fall onto objects held in the oral cavity,
Fractures of the facial skeleton may be divided into those of the upper third (above the eyebrows), the middle third (above the mouth) and the lower third (the mandible). Fractures tend to occur through points of weakness, the sutures and foramina and in thin bone.

**The upper third**

The patterns of fracture of the skull tend to be random, but there are points of weakness, mainly involving the frontal sinuses and the supraorbital ridges.

**The middle third**

In 1911, René Le Fort classified fractures into:

The Le Fort I fracture effectively separates the alveolus and palate from the facial skeleton above. The fracture line runs through points of weakness from the nasal piriform aperture through the lateral and medial walls of the maxillary sinus, running posteriorly to include the lower part of the pterygoid plates.
The Le Fort II fracture is pyramidal in shape. The fracture involves the orbit, running through the bridge of the nose and the ethmoids, whose cribriform plate may be fractured, leading to a dural tear and CSF rhinorrhoea. It continues to the medial part of the infraorbital rim and often through the infraorbital foramen.

By definition, the orbital floor is always involved. It continues posteriorly through the lateral wall of the maxillary antrum at a higher level than the Le Fort I fracture to the pterygoid plates at the back.
The Le Fort III fracture effectively separates the facial skeleton from the base of the skull – the fracture lines run high through the nasal bridge, septum and ethmoids, again with the potential for dural tear and CSF leak, and irregularly through the bones of the orbit to the frontozygomatic suture. The zygomatic arch fractures, and the facial skeleton is separated from the bones above at a high level through the lateral wall of the maxillary sinus and the pterygoid plates.

The Le Fort fractures are seldom confined exactly to the original classification, and combinations of any of the above fractures may occur.
Blow-out fractures of the orbit

Direct trauma to the globe of the eye may push it back within the orbit. The globe as it is thrust backwards, the pressure increases within the orbit, and the weaker plates of bone may fracture, without necessarily fracturing the bones of the orbital rim. Such injuries can occur when a blunt object strikes the globe. The weakest plate of bone, most commonly the orbital floor, fractures, and the orbital contents herniate down into the maxillary antrum. This soft-tissue herniation may lead to muscular dysfunction, Enophthalmos and diplopia can follow, although both may initially be concealed by oedema.

Paraesthesia in the distribution of the infraorbital nerve may be an important clue to the blow-out fracture or any fracture that involves the orbital floor (Le Fort II and zygomatic complex).
Fractures of the mandible

The condylar neck is the weakest part of the mandible and is the most frequent site of fracture, while other fractures tend to occur through unerupted teeth (the impacted wisdom tooth) or where the roots are long (the canine tooth). The mandible may fracture directly at the point of the blow, or indirectly where the force from the blow is transmitted and the mandible fractures at a point of weakness distant from the original blow. The latter is characteristically seen in the so-called, where a blow to the chin point may cause a fracture of the symphysis or parasymphysis of the lower jaw, and indirect transmission of the kinetic energy causes a unilateral or bilateral fracture of the mandibular condyles. Blows from below may cause the mandible to be thrust upwards, fracturing the alveolus and teeth as they strike the maxillary dentition.
Thank you