

# Emergency Care of Dento-Facial Injuries

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When emergency medical personnel are confronted with traumatic injuries to the teeth, jaws and associated structures, they are not usually life threatening but are almost always accompanied by severe pain, bleeding and emotional distress.

Many such injuries occur in motor vehicle accidents. A report on automotive crash injuries indicates that 72.1% of automobile accident victims suffer injuries to the facial structures (1). Sports injuries are another major cause of dento-facial injuries. An injury due to a fist may be limited to a specific area such as the zygoma, mandible or teeth. However, an explosive injury such as that caused by an automobile crash or gunshot is likely to involve multiple anatomic areas such as both jaws or contiguous structures of the nose, soft tissues and neck. The more violent the force, the greater likelihood of multiple concomitant injuries to other systems. This underscores the importance of a thorough physical examination and consideration of injury potentials (2,3). The potentials for cervical spine injury and/or airway obstruction must be considered during the initial moments of care. If potentials for cervical injury are significant, immobilization of the head and neck must be instituted as soon as possible. The mouth is very vascular and copious bleeding may collect in the oral cavity and pharynx, thereby obstructing the airway. This is especially true when the victim is unconscious or unable to swallow. With a severe fracture of the mandible, the tongue may be displaced posteriorly, blocking the airway. Avulsed teeth may also obstruct and become aspirated into the airway.

Dento-facial hemorrhage is best controlled by elevation of the head and application of local pressure to the wound with clean or sterile gauze. Point pressure over the temporal, facial or other superficial arteries may also help slow the bleeding.

## AVULSED AND BROKEN TEETH

When a tooth is traumatically avulsed, an effort should be made to recover it from the scene of the accident. Picking the tooth up by the crown will avoid damage to the tiny fibers on the roots that are necessary for re-implantation. If the tooth is dirty, gentle rinsing with water, without scrubbing, is helpful before reimplantation into its socket. If this is not possible in the field, the patient may hold the tooth in their mouth (if able to do so safely) or the EMS crew may transport the tooth in a container of milk (4). Time is critical - if a patient can receive dental care within thirty minutes, there is a 90% chance for successful reimplantation. Note that if a traumatically avulsed tooth cannot be found at the scene, then possible aspiration of the tooth must be ruled out by appropriate chest and gastrointestinal radiographs.

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If a tooth has been broken, an attempt should be made to locate the fragments. With modern bonding techniques, the fragments can often be reattached. A broken tooth is usually not an emergency unless the nerve (pulp) has been exposed. This is usually a very painful situation and dental consult should be sought immediately. With endodontic (root canal) therapy, such a tooth can almost always be saved. Any tooth that has been loosened should also receive immediate attention from a dentist. The tooth often requires splinting to prevent further trauma and subsequent loss.

## FRACTURED JAW

Initial treatment for a fracture of the mandible or maxilla will depend on the severity of the trauma. As mentioned, the accident may lead to obstruction of the airway by teeth, tongue, blood and/or dental prostheses. The airway must be cleared and maintained. In severe trauma, serious head injury or injury to other organ systems should receive treatment priority over mandibular and maxillary fractures.

If a fractured jaw is suspected following a more minor accident, it should be immobilized by any means possible and a cold pack applied for thirty minutes on, thirty minutes off until emergency department care. With a broken jaw, the patient will usually state that the bite feels off and the lip may feel numb. This injury mandates emergency department care with consultation of an oral/maxillofacial surgeon or other specialists trained in the treatment of such injuries.

## SUMMARY

In conclusion, thoughtful emergency care of dento-facial injuries can at least spare the patient from a lasting dental deformity and on occasion, may save a life. Proper attention first to the airway, cervical spine and potential head trauma is essential. Dentists and oral surgeons can prove very helpful to emergency personnel in the treatment of such patients.

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