

Oral and Facial Injuries in Urgent Care

Urgent message: For patients, cosmesis is often the top priority. But for clinicians, ruling out serious or life-threatening injury is paramount.

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Introduction

Patients with oral and related facial injuries often present to urgent care providers. Consider JT. He is a 25-year-old male who was taken to an urgent care clinic by his friends after falling while mountain biking near his Ohio home. His friends were concerned because the hill was steep, and although he was wearing a helmet, JT fell over his handlebars and landed face-first in a bush surrounded by rocks. JT, however, was concerned about his lacerations and the cosmetic outcome he could expect. As urgent care providers, we also are often concerned about cosmesis and the patient's reason for evaluation; however, it is important to consider other possibly more serious or even life-threatening injuries as well (see *Problems Not to Miss* on page 10). This article considers some of the oral and dental injuries that are commonly seen in the urgent care setting.

Patient Assessment

Patient assessment for oral and dental injuries includes a complete physical examination to rule out life-threatening injury, followed by a comprehensive oral and facial examination.

Physical examination

As with any patient, the best approach is to begin with the basics: airway, breathing, and circulation. Once you establish that the patient is stable, you should perform a complete exam, including visualization of any possible injury. Important considerations for patients with



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facial trauma include evaluation for neck or brain injury. While assessing the neck, evaluate for any cervical bone tenderness, decreased range of motion, or paresthesia, preferably by CT scan, because it has high sensitivity and specificity. Lower-risk patients can be screened with adequate plain-film radiography. These patients should also have a cervical collar placed until cleared. Evaluation for clinically important brain injury should take into consideration the need for CT scan of the brain. Patients with a Glasgow Coma Score (GCS) of less than 15 should be transferred to a trauma center. Those with a normal GCS should be considered carefully for use of a CT scan.

Oral and facial examination

Once life-threatening injuries are ruled out, a comprehensive oral and facial exam can be performed. The lips are the most obvious structure that must be evaluated. Under-

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Problems Not to Miss	
<ul style="list-style-type: none"> • Skull fracture • Intracranial injury • Cervical spine fracture • Spinal cord injury • Foreign bodies 	<ul style="list-style-type: none"> • Mandible fractures • Mandible displacements • Maxillary fractures • Ellis class 3 dental injury

standing their anatomy and healing potential is critical for the best results. Important anatomical considerations include the external skin, vermillion border, internal mucous membrane, and the muscles within the substance of the lip. From a cosmetic standpoint, the most important consideration is the vermillion border. Even a 1-mm variance in how it is closed will be readily visible.

Treatment of Oral Injuries

Oral injuries in the urgent care setting can include external lacerations, multilayer lacerations of the lip, buccal lacerations, tongue wounds, posterior pharynx and soft palate injuries, tooth injury, and mandible fractures.

External lacerations

External lacerations, particularly those that are gaping, should be closed. Shallow lacerations that are not under tension are often good candidates for dermal glue. Others often can be closed with 6-0 nylon or polypropylene. Lacerations that cross the vermillion border should be closed, starting with alignment of the border.

Multilayer lacerations of the lip

Providers should carefully weigh their skills against consideration for a plastic surgery consultation. This is of particular concern when a laceration splits the lip in a V-shaped pattern that involves the outside, muscle, and inner lip. Such multilayer lacerations usually are repaired by first closing the muscle with absorbable material, closing the outside with attention to the vermillion border, and then loosely approximating the inside.¹ Lacerations limited to the inner lip usually can be left to heal on their own as long as they are small (<2 cm), not open to the outside, and do not deform the lip. It is not uncommon to find missing pieces of teeth in a lip laceration.¹ Careful examination is needed. When deformity is present, consideration must also be given to the effect of swelling compared with the actual laceration. The deformity often is more related to swelling than to laceration. Laceration through the lip, such as a hole from the patient's own teeth, is best closed on the

outside, even if it is small. Most providers then leave the internal laceration to close on its own.

Buccal lacerations

Buccal lacerations are treated similarly to lip lacerations. External lacerations are usually closed with 6-0 suture, and occasionally, with dermal glue. Internal lacerations less than 2 cm are left to close on their own. Larger internal lacerations are loosely closed with absorbable suture. Before closing any oral laceration, thoroughly examine the wound, including searching for foreign bodies such as chips from the patient's teeth.¹

Tongue wounds

Tongue wounds are another common injury, often caused when a patient bites down at the time of impact. Like most of the oral cavity, the tongue heals quite quickly and is also difficult to anesthetize and stabilize during repair. For these reasons, careful consideration should be given to whether to repair a tongue laceration. Small wounds and puncture holes often heal quite well with dietary restrictions, including a soft diet that avoids items that might sting—such as spicy or salt-covered food—and a recommendation to rinse after eating. Lacerations that cause deformities, such as forking of the tongue, need to be closed. Lacerations greater than 1 cm also should at least be reapproximated. Often a quick, single stitch with an absorbable suture can accomplish this. Anesthesia of the anterior two-thirds of the tongue can be performed with a local field block or lingual nerve block.²

Posterior pharynx and soft palate injuries

Posterior pharynx and soft palate injuries most often are caused by foreign bodies in the mouth at time of impact. Even a straw or water bottle can be at fault. More important than closing soft palate injuries is controlling bleeding and risk of more significant unseen damage. Bleeding from the area of the tonsils can be life-threatening and should be completely controlled before discharge. Consideration for imaging once bleeding is controlled should include soft-tissue plain films and, if more serious trauma is suspected, CT. Although considered rare, dissection of the internal carotid has been reported. Antibiotic prophylaxis has not been well researched but generally is suggested.³ Discharge instructions, including risk of return of bleeding and infection, should be provided to the patient or a parent if the patient is a minor.

Tooth injury

Tooth injury, although not entirely a physician's spe-

cialty, is important to detect to at least begin the healing process. Dental trauma can span a spectrum from a tiny chip to complete avulsion. The most significant injury is complete tooth loss. Avulsed primary teeth should not be replaced. Permanent teeth need to be replaced as soon as possible. If a tooth is contaminated, gentle rinsing with normal saline should be performed before re-implantation.

If it is necessary to transport a tooth, a special transport device and media should be used. Lacking that, milk, normal saline, or the buccal mucosa are reasonable alternative transport media for teeth.⁴ A delay of more than 5 minutes greatly decreases the likelihood of long-term success with reimplantation. If more than 30 minutes have elapsed since avulsion, the patient should understand the low likelihood of success.

Teeth also can be subluxed. A subluxed tooth is loose but in the correct place. The etiology is loss of connection of the periodontal ligament. Treatment consists of splinting of the tooth in place. There are two types of luxation: extrusion and intrusion. Extrusion is similar to avul-

Important Facial Trauma Considerations	
<ul style="list-style-type: none"> • Airway • Bleeding • Vision • Sensation 	<ul style="list-style-type: none"> • Tenderness • Crepitus • Mechanism of injury • Best location for evaluation

sion. The tooth remains partially out of the socket but is not loose. Replacement without removal to the original location with splinting is the best treatment. Intrusion occurs when a tooth is pushed into the socket. Intrusions less than 3 mm often will heal on their own. A tooth that has been intruded 3 to 6 mm should be moved back into place and splinted. Intrusion of more than 6 mm carries a poor prognosis because of severe compression of periodontal ligament and surrounding structures. Whether a tooth is avulsed, extruded, or intruded, dental consultation should be obtained as soon as possible.

Damage to a tooth itself is classified based on the depth of the injury. An Ellis class 1 dental fracture is

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damage to only the outermost layer: the enamel. This is just a cosmetic problem and can be smoothed and fixed at the patient's convenience. Ellis class 2 injuries involve the dentin as well. These injuries cause pain, and the dentin will be visible as a brownish-orange color. These injuries should be covered with dental cement, such as calcium hydroxide paste, and the patient should be sent to a dentist for follow-up within 24 hours. Ellis class 3 injuries involve the enamel, dentin, and pulp, where the blood vessels and nerve roots are found. Urgent dental consultation is best for these.

Dental fracture also can occur when a tooth is separated into two pieces at all three layers. This is often subtle and best seen on true dental films, but not an urgent matter because fractured teeth cannot be repaired and eventually will have to be extracted.

Other Facial Trauma

Facial lacerations unrelated to the mouth are also common. As stated before, all facial lacerations are complicated by the patient's expectations. Most such injuries bleed heavily at first but respond well to pressure. The risk of infection is usually less and therefore the commonly used 6- to 8- hour window for primary closure is often extended to improve cosmetic outcome. Uncomplicated forehead, lateral face, and chin lacerations usually can be repaired in an urgent care setting. Topical mixtures of lidocaine, epinephrine, and tetracaine often can be used on these areas with great success, particularly in children. Non-absorbable 6-0 sutures are most commonly used to close these wounds. Dermal glue also works well for closing low-tension wounds without anesthesia. Some physicians even use deep sutures to reduce tension and then glue the area above them. (This is an off-label use of the glue.) Lacerations of the eyelids, nose, and external ear often are complex, and therefore, beyond the scope of this article.

Facial trauma also can lead to damage to the bones of the face including the nose, orbit, maxilla, and mandible. When entertaining the possibility of a facial fracture, you should also consider the airway, bleeding, vision, sensation, and other related trauma. Palpation for tenderness, crepitus, and deformity combined with mechanism of injury should be used to guide decisions for imaging. Patients with multiple injuries are best treated at a trauma center, if possible.

Nasal fractures

Nasal fractures are the most common facial fracture.

Examination of the nose begins with external visualization to identify for swelling, bruising, lacerations, or visible deformity. Periorbital ecchymosis usually indicates nasal fracture. Palpation may reveal crepitus, excessive movement, or other deformities. Internal exam for septal deviation, lacerations, septal hematoma, and presence of cerebral spinal fluid should be performed next. Plain films rarely change the management of nasal fractures but often are done because of patient expectations. Clinical exam alone should reveal the need for emergent treatment. Patients with uncomplicated nasal fractures, and particularly those who have significant swelling, should be referred to an ear, nose, and throat specialist for treatment in 6 to 10 days. Results are better when swelling does not obscure the cosmetic result of reduction. After 10 days, reduction becomes more difficult because the healing process has begun. Septal hematomas should be treated emergently with incision and drainage by an experienced physician with necessary tools, including suction. Treatment of septal hematomas prevents septal necrosis and eliminates a nidus for infection.^{5, 6}

Mandible fractures

Mandible fractures are the second most common facial fractures.⁷ Mandible alignment is best assessed by having the patient open and close the mandible and testing alignment of the bite. Causes of bite misalignment include subluxation or displacement of the temporomandibular joint and fracture of the mandible. Fractures tend to cause pain with minimal movement and are best seen on panorex films or CT scan.⁸ Most maxillary fractures are a result of significant trauma, such as motor vehicle accidents and severe beatings. They usually are not subtle and require referral to a specialist. If you note or suspect a fracture, perform a careful intra-oral examination to rule out an open fracture. Patients with open fractures should be considered for admission. Because small mucosal tears are common with mandible fractures, antibiotics should be prescribed for patients with such injuries.

Midface fractures

Midface fractures are uncommon in urgent care practice, but they are important to recognize when present. They usually result from significant impact and can be life threatening. The LeFort classification represents the most common maxillary fractures. With a Type I fracture (the least serious) the maxillary teeth are separated from the remainder of the face. On physical exam, the upper

teeth and hard palate are loose, similar to an upper denture. LeFort II fractures extend into the nasal portion of the face, forming a pyramid. Extension into the orbits and through the zygomatic suture lines describes a LeFort III fracture. These are the most significant injuries and usually compromise the airway and sometimes cause blindness. All midface fractures are best identified with CT scan.⁶

Isolated zygomatic fractures present in two types: tripod and depressed. Depressed fractures are less common and usually palpable as a depression. Tripod fractures can be non-displaced (10%) and require only observation, or they can be displaced or depressed fractures and require urgent expert consultation.⁹

Orbital floor fractures usually present with infraorbital anesthesia and often result in muscle entrapment. Orbital blowout fractures usually occur when an object smaller than the eye sends forces through the eye to the orbit. Patients who have isolated orbital fractures but no globe, eye muscle, or nerve damage often can be sent home with antibiotics such as amoxicillin/clavulanate and decongestants. They should also be instructed not to blow their noses. Expert consultation is suggested before discharge.

Most other orbital fractures are not isolated. Significant trauma to the nose also can cause naso-orbito-ethmoid fractures. Patients with these injuries present with the proximal upper nose pushed backward. Serious complication include possible CSF leakage, ocular injury, and damage to the lacrimal apparatus.⁷ Orbital and other complex facial fractures are best managed with expert consultation and possibly transfer to the emergency department, particularly if CT scan and appropriate personnel to monitor the patient are unavailable.

Conclusion

With the few exceptions described above, most common oral injuries can be managed in an urgent care setting. Midface fractures other than to the nose are uncommon in an urgent care setting, but you should consider them in any patient who has significant facial trauma. Your initial evaluation must include the patient's overall condition, severity of other injuries, and consideration of head and neck trauma. Once life-threatening conditions are ruled out, a comprehensive oral and facial exam will help guide the care provided next. ■

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