Facial trauma remains a common reason for visits to the emergency department or urgent care facility. The ear remains susceptible to trauma given its delicate anatomy and position in the maxillofacial region. Understanding the anatomy and recognizing the circumstances regarding the mechanism of injury help dictate treatment. The goals of treatment should remain to restore the physiologic form and function of the ear. Middle ear injuries should also be addressed during the process. Although primary repair remains feasible in most cases, there are instances when delayed and staged reconstruction is necessary to achieve successful results.

Facial trauma often involves injuries to the eyelid and periorbital region. Management of these injuries can be challenging because of the involvement of multiple complex anatomic structures that are in close proximity. Restoration of normal anatomic relationships of the eyelids and periocular structures is essential for optimum functional and aesthetic outcome after trauma. This review provides an overview of the current literature involving soft tissue trauma of the eyelid and periorbital tissue and highlights key steps in patient evaluation and management with various types of injuries.

Facial trauma can have long-lasting physical and mental consequences. Trauma to the nose is commonly seen in the emergency department. Nasal lacerations account for 7% of all facial lacerations. Thorough examination and documentation including photographs is important for documentation and creating a reconstruction plan. Underlying damage to cartilage or bone must be reconstructed initially or in a delayed fashion to recreate the pretrauma anatomy and function. There are several options for soft tissue nasal reconstruction, including local flaps, skin grafts, pedicle flaps, and free flaps. At present there is no standard of care for postoperative facial trauma wound care.

Although a rare sequela of soft tissue injury, salivary gland trauma may result in significant morbidity. Salivary gland injury can involve the major as well as the minor glands. Because of the proximity of adjacent vital structures, a thorough history and physical examination are mandatory during patient evaluation. Trauma to the major salivary glands may involve the parenchyma, duct, or neural injury. Treatment
requires adherence to primary principles of soft tissue management. Ductal and neural injury should be repaired primarily. Sialocele and fistula are potential complications of repaired and unrepaired salivary gland injury.

**Soft Tissue Trauma: Management of Lip Injury**

Ashley Houle, Michael R. Markiewicz, and Nicholas Callahan

Repair of soft tissue trauma to the lips requires careful attention to both function and esthetics. This article outlines basic lip anatomy, goals in managing lip injury, and appropriate workup and ultimate treatment of various types of trauma to the lips.

**Updates in Management of Craniomaxillofacial Gunshot Wounds and Reconstruction of the Mandible**

Baber Khatib, Savannah Gelesko, Melissa Amundson, Allen Cheng, Ashish Patel, Tuan Bui, Eric J. Dierks, and R. Bryan Bell

This article includes updates in the management of mandibular trauma and reconstruction as they relate to maxillomandibular fixation screws, custom hardware, virtual surgical planning, and protocols for use of computer-aided surgery and navigation when managing composite defects from gunshot injuries to the face.

**Management of Human and Animal Bites**

James Murphy and Mohammed Qaisi

Dogs are the animal most frequently implicated in causing bite injuries to the human face. Dog bite injuries are most prevalent in younger patients. Pasteurella species are commensals of the oral microbiome of dogs and cats and are frequently implicated in infections resulting from dog and cat bite injuries. HIV, hepatitis B, and hepatitis C need to be considered in bites inflicted by humans. All animal bite wounds should be washed out. Most animal bite injuries can be managed in an outpatient setting. Given the cosmetically sensitive nature of the face, bite wounds generally merit suturing, even in delayed presentations.

**Management of Traumatic Trigeminal and Facial Nerve Injuries**

Michael R. Markiewicz, Nicholas Callahan, and Michael Miloro

In the area of craniomaxillofacial trauma, neurosensory disturbances are encountered commonly, especially with regard to the trigeminal and facial nerve systems. This article reviews the specific microanatomy of both cranial nerves V and VII, and evaluates contemporary neurosensory testing, current imaging modalities, and available nerve injury classification systems. In addition, the article proposes treatment paradigms for management of trigeminal and facial nerve injuries, specifically with regard to the craniomaxillofacial trauma setting.

**Management of Scalp Injuries**

Joshua Yoon, Joseph S. Puthumana, and Arthur J. Nam

Soft tissue wounds in the scalp are a common occurrence after trauma or resection of a malignancy. The reconstructive surgeon should strive to use the simplest reconstructive technique while optimizing aesthetic outcomes. In general, large defects with infection, previous irradiation (or require postoperative radiation), or with
calvarial defects usually require reconstruction with vascularized tissue (ie, microvascular free tissue transfer). Smaller defects greater than 3 cm that are not amenable to primary closure can be treated with local flap reconstruction. In all cases, the reconstruction method will need be tailored to the patient’s health status, desires, and aesthetic considerations.

Management of Laryngeal Trauma

Nadir Elias, James Thomas, and Allen Cheng

The larynx is a complex anatomic structure and a properly functioning larynx is essential for breathing, voice, and swallowing. Laryngeal trauma is often associated with other injuries, including intracranial injuries, penetrating neck injuries, cervical spine fractures, and facial fractures. Although uncommon, laryngotracheal injuries may lead to life-threatening airway emergencies. Because laryngeal injuries are rare, even surgeons with a great deal of experience in managing maxillofacial trauma have limited exposure to management of laryngeal and tracheal injury. This article reviews a protocol for the evaluation, management, and treatment of these injuries in the trauma patient.