Eyelid and Periorbital Soft Tissue Trauma

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KEYWORDS

• Ocular trauma • Periocular trauma • Facial trauma • Eyelid laceration • Canalicular laceration • Facial degloving • Foreign bodies

KEY POINTS

- In periocular soft tissue injuries, the globe must be assessed for the possibility of rupture and conditions that are contraindications to periocular manipulation.
- Lacerations of the canaliculus must be repaired and stented to prevent tearing after injury.
- Lacerations of the eyelid margin must be repaired in a multilayered fashion to prevent eyelid malpositions and cosmetic defects after injury.

INTRODUCTION

Soft tissue trauma to the face is a common injury and comprises roughly 10% of all emergency room visits.[1–3] Because of the potential for posttraumatic functional and cosmetic sequelae, reconstructive expertise is required in the repair of any facial soft tissue injury, especially to the eyelids and periorbital soft tissues. Injuries to the periocular region are often complex and involve multiple anatomic structures. Soft tissue repair with optimal aesthetic and functional outcome can be achieved through meticulous planning and knowledge of facial reconstructive techniques. This article highlights key steps in patient evaluation and management of various types of injuries, and provides a review of current literature involving facial soft tissue trauma.

PATIENT ASSESSMENT

After stabilization of the patient, a detailed history of the mechanism of trauma and patient presentation is obtained. A full survey of the face and scalp is then performed, paying attention to signs of surface or penetrating wounds, foreign bodies, and avulsed or missing tissue. Often these wounds are difficult to visualize due to obscuration by debris and dried or coagulated blood, especially in areas that contain hair, such as the scalp and eyebrows. If present, cleaning the affected areas is indicated by irrigation with sterile saline and gentle debridement with gauze. If there is a marked amount of swelling, visualization can be aided by first applying ice to the affected area. If necessary, patient tolerance of the examination can also be helped by injection of lidocaine or moderate sedation in the emergency room. Photographs of the patient with multiple angles should be obtained for medical-legal documentation.

Ocular Assessment

A ruptured ocular globe is one of the few ophthalmic emergencies that warrant immediate surgery. Signs of a ruptured globe include

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decreased vision, focal bullous or 360° subconjunctival hemorrhage, an irregularly shaped pupil, ocular hypotony, and the presence of blood in the anterior chamber. If any of these signs are noted on the initial examination, prompt ocular protection by an eye shield and evaluation by an ophthalmologist is indicated.[4,5] Further periocular manipulation, such as examination of the eyelids or surrounding periorbital tissues, should be avoided or conducted with extreme caution to avoid pressure on the ocular globe that may lead to extrusion of intraocular contents.

In cases of significant injury to periorbital soft tissue and bony structures, the potential for concurrent eye damage should be assessed. A ruptured globe is an absolute contraindication to periocular and periorbital manipulation (**Fig. 1**). Additional ocular conditions that place the globe at high risk during periocular and periorbital manipulation, and possible future permanent decrease or complete loss of vision, include the following: hyphema, dislocated intraocular lens, intraocular foreign body, and retinal detachment. If any of these additional conditions exist, consultation should be obtained from the ophthalmology service to determine optimum time for surgical repair of other facial injuries.

Eyelid Assessment

In the initial assessment of the eyelids, any abrasions, ecchymosis, and lacerations should be noted. The presence of a traumatic ptosis can be assessed by looking for motility deficits while having the patient follow an object in upgaze and downgaze. Oftentimes swelling will limit the motility of the eyelid, and the eyelid motility will need to be reexamined at a future date.

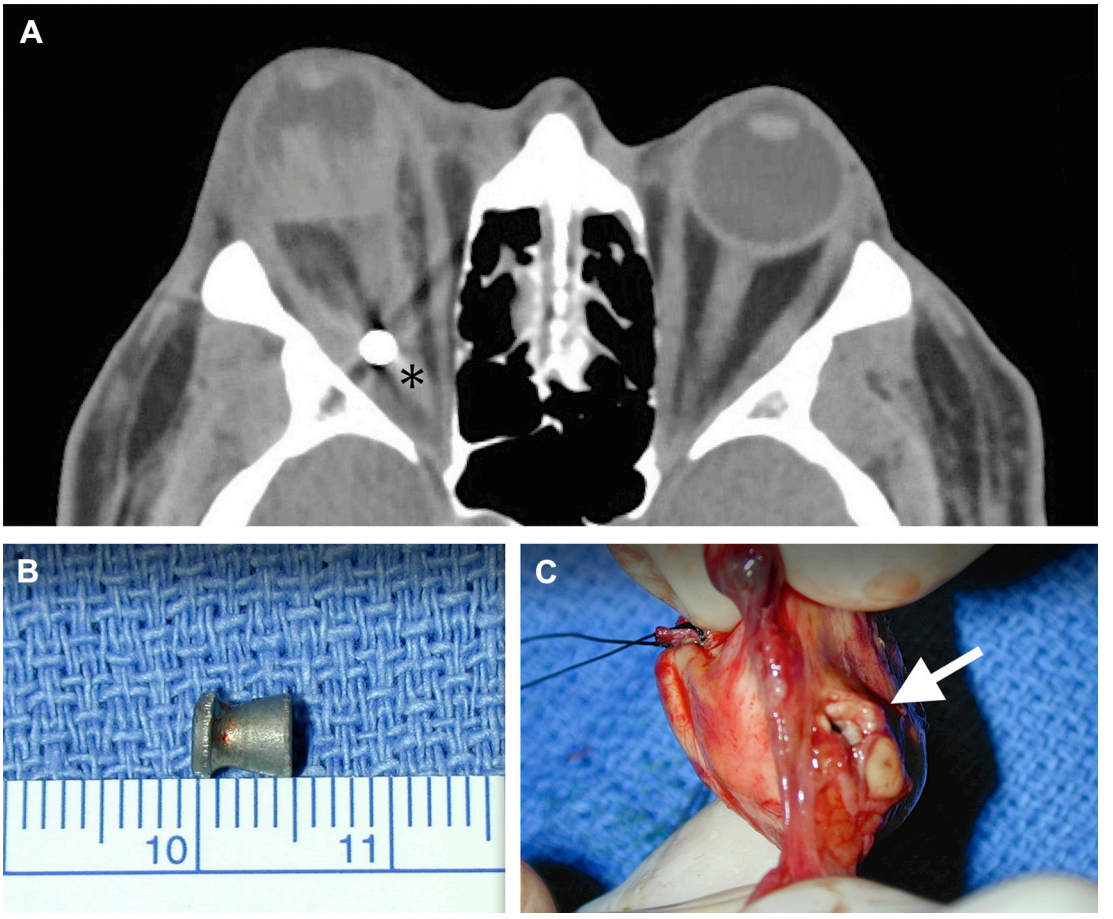

Fig. 1. A 60-year-old man was assaulted, sustaining a BB gun blast and blunt trauma to the face. The patient's vision was no light perception with a ruptured globe. The globe was found to be unsalvageable and was removed along with the pellet. This delayed treatment of his associated facial fractures. (*A*) CT-orbit demonstrating globe disruption and intraorbital foreign body (*asterisk*). (*B*) Removed pellet. (*C*) The ruptured globe and scleral exit wound (*arrow*).