Case Report: Orbital Blow Out Fracture From a Soccer Injury in an Adolescent Male

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Background

• Sports related head and eye injuries occur frequently in the pediatric population, and these patients often seek medical care at local urgent cares or emergency departments.
• Nationally, it has been estimated that an average of 19,000 children are treated in the ED each year for a sports related eye injury. (1)

Case Report

Chief Complaint: 14 year old boy presented to the Urgent Care with a chief complaint of head injury.

HPI: Patient had been playing soccer, when he sustained a blow to his left orbit by another players cleat.
• There was no loss of consciousness but he was complaining of persistent headache, dizziness, nausea and left eye pain.

Physical Examination:
•Significant left periorbital swelling with associated ecchymosis and ptosis.
• His pupils were equal and reactive to light
• No evidence of hyphema or enophthalmos
• Pain with eye movement but no gaze limitations were noted.
• Marked tenderness to palpation over inferior aspect of orbital rim.
• Normal visual acuity

Treatment Course
• The patient was transferred to the ED for further imaging due to suspected orbital fracture and concussion.
• A computed tomography scan was performed and showed an orbital floor fracture with entrapment of infraorbital fat and inferior pulling of inferior rectus muscle.
• Plastic surgery and ophthalmology were consulted and recommended conservative management with close outpatient follow up.

Imaging

Discussion

• Orbital fractures are often the result of significant trauma, and therefore can be associated with intracranial or intracranial injuries.
• Orbital floor fractures often known as “blowout fractures” occur with direct impact to eye.
• It is imperative to perform a complete neurologic and eye examination to rule out other serious injuries.
• Compared to adults, children with orbital floor fractures are prone to entrapment of intracranial muscles. (2)
• Entrapment can present with persistent nausea, vomiting, eye pain, diplopia or limited upward gaze, and is considered a surgical emergency due to potential ischemia of the muscle involved.
• There is a well documented oculovagal reflex associated with orbital injuries (3), which can explain bradycardia and nausea or vomiting following a fracture.
• Computed tomography is the imaging modality of choice with thin cuts through the orbits, as plain radiographs have only a 50% sensitivity in detecting orbital fractures.(4)
• Typically nonoperative management is recommended in the absence of entrapment, enophthalmos and vertical ocular dystopia.

References

Take Home Points

• Orbital floor fractures often known as "blowout fractures" occur with direct impact to eye: such as a baseball

• Fracture of orbital floor can cause muscle entrapment of inferior rectus and/or orbital fat, sensory loss of CN V and epistaxis

• Symptoms of orbital fracture: diplopia, pain with eye movement, nausea, bleeding from nose or mouth, facial numbness
Take Home Points

• Diagnostic imaging: CT scan of orbits without contrast is preferred method of imaging for patients with traumatic eye injuries

• Sensitivity of plain radiographs for detecting orbital fractures is poor (about 50%)

• A specialist (ophthalmologist or plastic surgeon) should be consulted if muscle entrapment from orbital floor fracture

• Patients with orbital floor fractures with persistent nausea/vomiting, eye muscle dysfunction, diplopia may require surgery