Blowout Fracture

What is a “blowout” fracture?

The most common symptoms are bruising, tenderness and swelling around the eye; redness of the eye; double vision, or diplopia (seeing two images at the same time); numbness of the cheek, nose or teeth; and nose bleeds (epistaxis) [See figure 1].

Symptoms that typically indicate a more serious injury are pain on eye movement, nausea or vomiting, double vision, air under the skin around the eye, and numbness of the cheek/mouth/nose on the side of the injury. Severe trauma may cause facial bone fractures, injury to the eye itself, and/or injuries to the skull/brain. A blowout fracture is a fracture of one or more of the bones surrounding the eye. Commonly the bony floor of the orbit is fractured and is referred to as an orbital floor fracture.

Fig. 1: Bruising around the eye is a common symptom of a blowout fracture.

What is the orbit?

The orbit consists of the bones surrounding the eye. When looking at a skull, the orbit is the hole in the skull encompassing the eye.

What is the “floor” of the orbit?

The bones on the bottom of the orbit are the floor. The bones on the top are the roof and the bones on the side are the walls.

What is the function of the orbit?
The orbit holds the eye in the correct position. The orbit also protects the eye. Because the bones surrounding the eye “stick out” further than the eye, objects tend to hit the orbit and not the eye.

**What causes a blowout fracture?**

Blowout fractures result from trauma to the orbital bones. When an object hits the orbital bones (usually the eye brow and upper cheek bone) the force is transmitted to the bones. If the force is great enough, the bones buckle and break.

**What are common causes of blowout fractures?**

Any large object with force or speed can cause a blowout fracture. Typical causes include motor vehicle accidents, baseballs, softballs, fists, and elbows.

**What are the symptoms of an orbital blowout fracture?**

The most common symptoms are bruising, tenderness and swelling around the eye; redness of the eye; double vision, or diplopia (seeing two images at the same time); numbness of the cheek, nose or teeth; and nose bleeds (epistaxis) [See figure 1]. Symptoms that typically indicate a more serious injury are pain on eye movement, nausea or vomiting, double vision, air under the skin around the eye, and numbness of the cheek/mouth/nose on the side of the injury. Severe trauma may cause facial bone fractures, injury to the eye itself, and/or injuries to the skull/brain.

**How do you know if there is a fracture?**

X-rays and CT scans of the orbit and face are used to make the diagnosis [See figure 2].
Are there different types of blowout fractures?

Blowout fractures are classified on several features including:

- size (big or small)
- location (front or back)
- bone in place or displaced
- tissue/muscle entrapped in fracture
- accompanying symptoms (double vision, pain, eye position)

A “simple” fracture is one with minimal or no double vision, minimal or no interference with eye movements, and minimal fracture size.

What can be done for a simple blowout fracture?

Most simple blowout fractures usually heal without lasting problems. Treatment consists of:

- ice to decrease swelling
- decongestants to aid in the drainage of blood and fluid accumulating in the sinuses
- avoidance of nose blowing to prevent pressure from propelling the sinus contents into the orbit
• oral steroids in some cases to decrease swelling and scarring
• sometimes oral antibiotics

**When should surgical repair of blowout fractures be considered?**

Fractures with persistent symptoms (typically double vision or pain) are usually candidates for surgical repair. Timing of the repair varies, but most often is within two weeks of the injury. Initial repair may consist of any of the following:

• exploration of fracture site and repositioning of bone
• release of trapped tissue from fracture site
• covering of fracture site with synthetic material

**What long-term problems may develop following blowout fractures?**

Most fractures heal without long-term effects. However, strabismus surgery (eye muscle surgery) is sometimes necessary for persistent double vision. Occasionally, persistent double vision can be treated with non-surgical methods (prism glasses or botulinum toxin injections).

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