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Figure 1. Patient with proptosis and orbital dystopia, with the right eye lower than the left. There is also limitation of upward gaze.

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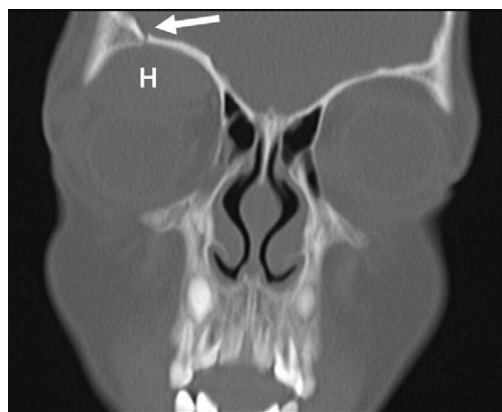


Figure 2. Coronal computed tomographic image.

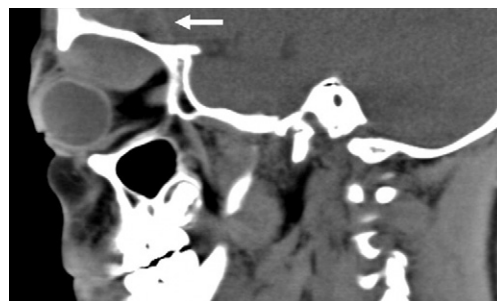


Figure 3. Sagittal computed tomographic image. Used with permission of Mark I. Neuman, MD, MPH, the Division of Emergency Medicine, Children's Hospital and Harvard Medical School, Boston, MA.

A 7-year-old presented to the emergency department (ED) with complaints of right eye pain and double vision. The patient had been involved in a sledding accident 1 week before, in which he crashed into a fence. There was no loss of consciousness. On examination in the ED, the right eye was proptotic and dystopic (Figure 1), although with normal visual acuity and no deficits during visual field testing. The pupils were equal, round, and reactive to light, without evidence of an afferent pupillary defect. Dilated funduscopic examination was normal. Extraocular mobility demonstrated limitation of upward gaze and adduction of the right eye. Computed tomographic imaging of the head including facial cuts was performed (Figures 2 and 3).

*For the diagnosis and teaching points, see page 481.
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DIAGNOSIS

Superior orbital wall fracture with retro-orbital hematoma. Limitation of upward gaze in the setting of trauma is most commonly associated with a fracture of the floor of the orbit, typically referred to as “blowout fracture.” Entrapment of the inferior rectus muscle within the orbital floor may lead to ophthalmoplegia and diplopia. In such cases, posterior displacement of the globe and prolapse of orbital contents into the maxillary sinus more commonly leads to enophthalmos (recession of the globe into the orbit), as opposed to proptosis.¹

This patient had limitation of upward gaze, with proptosis and orbital dystopia with the right eye lower than the left (Figure 1). Here, limitation of upward gaze was due to a mass lesion (retro-orbital hematoma) impinging on the globe (Figure 2), rather than extraocular muscle dysfunction. Orbital roof fractures are rare,² although they are more common in young children because of their high cranium-to-midface ratio.¹⁻⁴ Such fractures have a high association with intracranial injury, most commonly epidural hematoma, as was seen in our patient (Figure 3).

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DIAGNOSIS:

Ectopia lentis. Ectopia lentis, most commonly caused by trauma, occurs as a result of a rupture of the zonular fibers.¹ Common presenting symptoms include decreased vision, pain, accommodation loss, and monocular diplopia.² Iridodonesis (iris tremulousness) or phacodonesis (lens tremulousness) may be observed. In the absence of trauma, hereditary/systemic disease (eg, Marfan’s syndrome, homocystinuria) should be considered.³

Treatment is dictated by the cause of the dislocation, location of the displaced lens, and presence of any eye injury.⁴ If the lens displaces into the anterior chamber, glaucoma may result. In this case, one may consider reclining the patient until the lens falls back into place and then applying pilocarpine. If glaucoma does develop, emergency iridotomy is indicated. Posterior displacement of the lens may cause uveitis and retinal damage. Under these circumstances, vitrectomy and lens extraction are necessary. For stable refractive errors, visual correction with glasses may be an option. All instances require emergency ophthalmologic consultation.⁵

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