

Answer to Ophthalmproblem continued from page 605

1. Retrobulbar hemorrhage

Retrobulbar hemorrhage (RH) is an ocular emergency resulting from arterial bleeding in the orbital cavity behind the eye. Because the orbit is a relatively fixed space, increasing volume will increase orbital and intraocular pressure, resulting in compression of orbital structures and ischemia of the eyeball and optic nerve.¹ Left untreated, this can progress to permanent vision loss and even blindness.

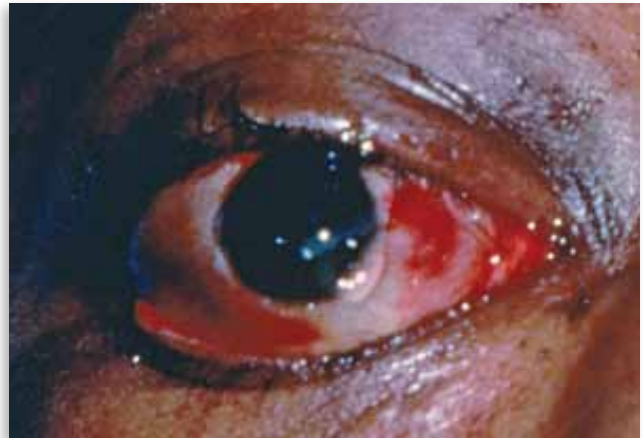
Most commonly, RH occurs following facial trauma, orbital surgery, or retrobulbar injections.²⁻⁴ It can also occur spontaneously owing to hematologic abnormalities with bleeding diathesis, although this is rare.⁵ Bleeding typically occurs from the infraorbital artery or the anterior or posterior ethmoidal artery.⁶ In all cases, prompt recognition of the condition is imperative to prevent severe vision loss.⁷

The clinical features of RH are related to increased orbital and intraocular pressure; symptoms include decreased vision, orbital pain, diplopia, and reduction of ocular motility.⁷ Signs upon examination are proptosis, eyelid ecchymosis, decreased visual acuity, ophthalmoplegia, relative afferent pupillary defect, blunting of the red reflex, loss of direct pupillary response, increased intraocular pressure, a tense, hard eyeball, and papilledema.^{7,8} In later stages, fundoscopy might reveal a pale optic disk and a cherry-red spot.⁷

Management

Prompt recognition of RH is imperative, given that a delay in surgery of as little as 90 to 120 minutes can result in permanent vision loss.^{6,9} Retrobulbar hemorrhage should be considered in any patient with signs of orbital trauma. If suspected, emergent consultation with an ophthalmologist is required; a computed tomography scan to verify diagnosis is rarely performed, as it delays treatment.⁷ For patients with orbital trauma without signs of RH, visual acuity should be monitored frequently, as an abrupt decrease in visual acuity might signify the onset of a hemorrhage.¹⁰


Management of RH consists of a combination of medical and surgical treatment.⁷ Medical treatment should be initiated immediately and typically involves an osmotic agent, a carbonic anhydrase inhibitor, and a high-dose steroid.⁷ Osmotic agents, such as intravenous mannitol, shrink the vitreous body and reduce orbital volume; carbonic anhydrase inhibitors, such as intravenous acetazolamide, reduce intraocular pressure by inhibiting aqueous production; and steroids decrease inflammation.⁶ Pressure-lowering drops, such as timolol, might also be used.⁷ In mild cases, pharmacotherapy can be used as the sole treatment¹¹; however, if



improvement is not noted in 30 to 45 minutes, surgery should be performed.¹

Surgical treatment involves lateral canthotomy and inferior cantholysis.⁷ This can be performed under local or general anesthesia and might involve evacuating the hematoma and decompressing the orbit.⁷ Medical treatment should be continued for several days afterward.⁶

Recommendations

Prompt recognition of RH by the primary care physician is crucial, as even a small delay in treatment can result in permanent vision loss. Features suggestive of RH include recent trauma or surgery to the area, reduced visual acuity, proptosis, eyelid ecchymosis, ophthalmoplegia, increased intraocular pressure, loss of red reflex, loss of direct pupillary response, and a tense, hard eyeball. 

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Competing interests

None declared

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