Clinical

Anterior chamber gas bubbles in open globe injury

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Abstract

We present a case of a 40-year-old soldier who was in close proximity to the detonation of an improvised explosive device (IED). Bubbles of gas were visible within the anterior chamber of his left eye. The authors propose that intraocular gas, present acutely after trauma, is diagnostic of open globe injury and is of particular importance in remote military environments.

Case Presentation

A 40 year old soldier was assessed at a military hospital after being in close proximity to the detonation of an IED. He had fragmentation wounds to his face and complained of pain and loss of vision in his left eye. On examination his left eye had a visual acuity of perception of light, a small corectopic pupil, subconjunctival haemorrhage, a 4mm hyphaema and gas bubbles in the anterior chamber (Figure 1). Direct ophthalmoscopy was suggestive of vitreous haemorrhage with an absent red reflex and no view of the fundus. Computed tomography (CT) of his left globe revealed gas in the anterior segment and a high-density intraocular foreign body in the posterior segment (Figure 2). An oral fluoroquinolone was prescribed to reduce the risk of endophthalmitis (1-3) (a serious complication of open globe injuries (OGI)). Before aeromedical transfer to an ophthalmic surgeon the eye was protected with a shield to prevent further injury. No further information was available after transfer.
Discussion
Iris sphincter tears, traumatic mydriasis and hyphaema are common in ocular trauma but are not specific to OGI.(4,5) Intraocular gas is rare except after surgery.(6) Intraocular gas has been previously described in OGI, days after injury, as a hallmark of endophthalmitis caused by gas-forming organisms (6,7). Intraocular gas immediately after injury, however, can only be present secondarily to a breach in the globe, and therefore indicates an OGI. Gas is easily visible on CT but less commonly observed on examination of the eye; however, when present acutely after trauma, the authors propose that it is diagnostic of OGI. This sign, which identifies OGI without the need for magnification, formal ophthalmological examination or CT, is of particular importance in remote military environments.

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References

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This case was seen and treated at Role 3 Medical Treatment Facility, Camp Bastion, Afghanistan in 2012. Written consent for publication has been obtained and is available from the corresponding author.