

- 4 Oetting TA. Preventing and managing cataract complications: it takes a village. *Insight (Am Soc Ophthalm Registered Nurses)* 2003; **28**(1): 18–23.
- 5 Kenyon TA, Lenker MP, Bax TW, Swanstrom LL. Cost and benefit of the trained laparoscopic team. *Surg Endosc* 1997; **11**: 812–814.
- 6 Watson ME, Fine IH. The first assistant's role in managing phacoemulsification complications. *J Ophthalmic Nurs Technol* 1991; **10**(4): 172–176.
- 7 Cataract Surgery Guidelines. Scientific Department, The Royal College of Ophthalmologists, 2004.
- 8 Desai P, Minassian DC, Reidy A. National cataract surgery survey 1997–8: a report of the results of the clinical outcomes. *Br J Ophthalmol* 1999; **83**(12): 1336–1340.
- 9 Vajpayee RB, Sharma N, Dada T, Gupta V, Kumar A, Dada VK. Management of posterior capsule tears. *Surv Ophthalmol* 2001; **45**(6): 473–478.

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Sir,  
**Benign episodic unilateral mydriasis**

A unilaterally dilated pupil is often viewed as an ominous sign. However, a majority of patients with a neurologically isolated unilateral mydriasis have a benign process.<sup>1</sup> Detailed history and examination can help avoid referral for an expensive neurological work-up. We present a patient with intermittent dilation of the pupil with no apparent cause.

#### Case report

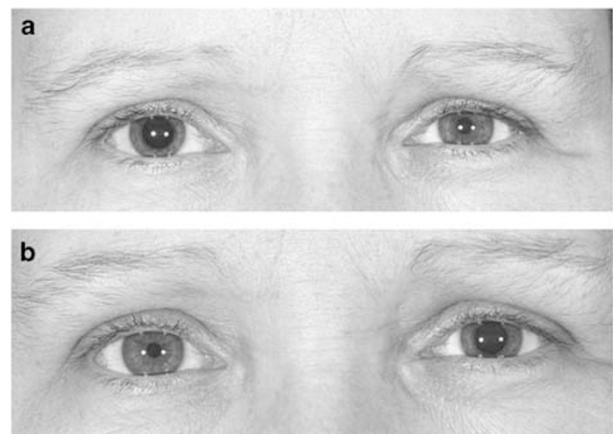
A 39-year-old lady presented to the casualty with a traumatic corneal abrasion to the left eye. She was systemically well, except the occasional classical migraine. Vision was 6/12 in the right eye and 6/36 in

the left. Examination revealed bilateral congenital cataracts. No other abnormality was found. The abrasion healed in 2 days with vision improving to 6/18. The right pupil, however, remained dilated (Figure 1a). This was interpreted as an abnormally prolonged response to tropicamide drops. The patient was discharged. Six months later, she was referred to us with a dilated left pupil. A detailed history revealed no trauma and no possibility of pharmacological dilation. Her vision was unchanged from her last visit to the department. The anisocoria was more marked in light. There was no ptosis and full ocular motility. There was no other ocular abnormality, except for the previously noted cataracts. It was observed that 0.125% Pilocarpine did not constrict the pupil, whereas 1% Pilocarpine constricted both pupils well. The anisocoria spontaneously disappeared in 3 days. Over the next 2 years, this patient presented four times with similar episodes of unilateral mydriasis, twice affecting the left eye (Figure 1b). Three of these episodes were accompanied by headache and two by ocular pain. Each time there were no other significant findings and pharmacological tests were negative.

#### Comment

The features of our patient were consistent with a rare but innocuous condition termed 'benign episodic unilateral mydriasis'.<sup>2</sup> The affected individuals, usually women, often have a history of migraine.<sup>2</sup> The episodes may be accompanied by blurred vision, orbital pain, headache, or photosensitivity.<sup>2</sup> The dilated pupil is the only ocular finding. The cataracts in our patient were an incidental finding.

Anisocoria is often viewed as a worrying sign. A systematic approach is required to examine and investigate this condition.<sup>3</sup> In the absence of any other



**Figure 1** Episodic unilateral mydriasis. Either pupil may be dilated during an episode.

ocular abnormality, unilateral mydriasis is rarely due to an intracranial cause.<sup>1</sup> We found only one report of an intracranial aneurysm causing internal ophthalmoplegia without extraocular muscle involvement.<sup>4</sup>

Pharmacological blockade is the most common cause of such a presentation. These pupils can be identified by their refusal to constrict with 1% Pilocarpine.<sup>1</sup> Adies pupil and trauma are other common causes. Once these are systematically excluded, benign episodic unilateral mydriasis should be considered a possibility.

## References

- 1 Thompson HS, Newsome DA, Loewenfeld IE. The fixed dilated pupil: sudden iridoplegia or mydriatic drops? A simple diagnostic test. *Arch Ophthalmol* 1971; **86**: 21–27.
- 2 Jacobson DM. Benign episodic unilateral mydriasis: clinical characteristics. *Ophthalmology* 1995; **102**: 1623–1627.
- 3 Thompson HS, Pilley SFJ. Unequal pupils. A flow chart for sorting out the anisocorias. *Surv Ophthalmol* 1976; **21**: 45–48.
- 4 Payne JW, Adamkiewicz Jr J. Unilateral internal ophthalmoplegia with intracranial aneurysm. *Am J Ophthalmol* 1969; **68**: 349–352.

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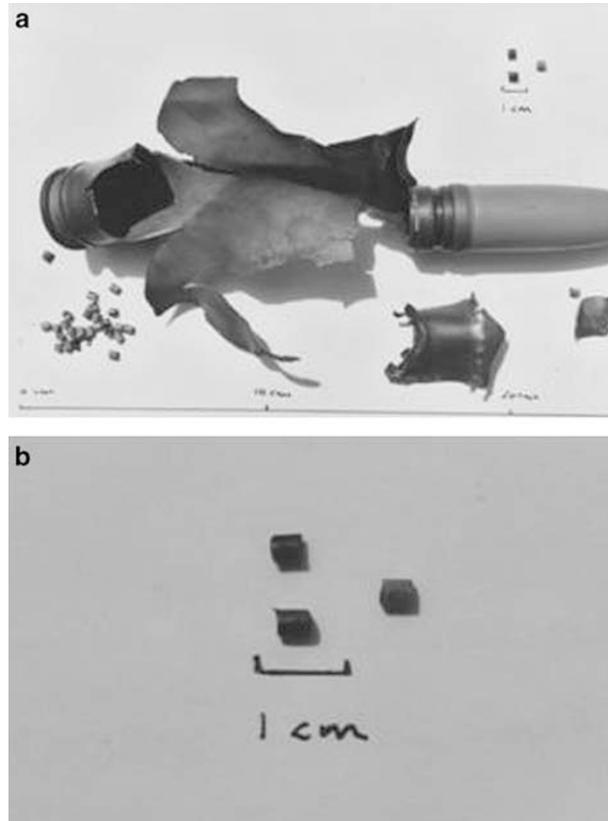
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## Sir, Ocular gunpowder injury

Gunpowder has been used for several years in firearms, explosives, cannons, and fireworks; however, there have been few reported cases of ocular injuries resulting solely from gunpowder. We treated a patient with penetrating ocular injuries caused by particles of smokeless gunpowder, the modern form of gunpowder.

### Case report

A 47-year-old licensed firearms dealer suffered an explosion to his face and body while deactivating a cannon shell of the type used by UK Tornado jet aircrafts in on-board cannons (Figure 1a).



**Figure 1** (a) The exploded cannon shell. (b) Gunpowder particles similar to the one removed from the eye.

He presented with a visual acuity of hand movements in the right eye and 6/18 best-corrected snellen VA in the left eye. A corneoscleral laceration was noted in the right eye at the 3 o'clock meridian associated with iris prolapse and a 4-mm hyphaema. The lens was opaque, obscuring the view of the retina. In the left eye, the cornea was mildly oedematous, there were multiple corneal abrasions, but fundal examination was grossly normal.

Orbital X-rays showed no radiopaque foreign bodies (Figure 2a). Primary repair of the right corneoscleral laceration was performed and, during examination under anaesthesia, a cylindrical particle was removed from the right inferior fornix (Figure 1b). As this was not visible on the original X-rays, the particle alone was X-rayed and was found to be radiolucent.

Postoperatively, a B-scan and CT scan of the orbits were performed. The B-scan showed a hyperechogenic area in the vitreous, which was presumed to be a vitreous haemorrhage. The CT scan showed an intraocular foreign body in the right globe in close proximity to the retina (Figure 2b). The patient was referred for vitreoretinal surgery and underwent a vitrectomy, lensectomy, removal of foreign body, and endolaser to a tear