Sir,

Spontaneous hyphaema: blunt trauma and cocaine abuse

Hyphaema is the presence of blood in the anterior chamber. It can result from trauma, ophthalmic surgery, rubeosis iridis, perforating injuries and others.

Traumatic hyphaema is more common in children and young adults (70% under 20 years of age) with males being more frequent than females.

A patient, who developed hyphaema 4 days after an episode of blunt trauma but a few hours after the use of cocaine is discussed here.

Case report

An 18-year-male patient presented to the emergency eye clinic with a history of injury to his left eye with the blunt end of a chisel. On examination his visual acuity was 6/6 in his right eye and 6/9 in his left eye. No hyphaema or vitreous haemorrhage was evident, intraocular pressure was normal, and commotio retinae was seen in the posterior pole region. He was managed conservatively.

After 4 days, he presented to the emergency eye clinic again with sudden onset of reduced vision in his left eye. On examination, his visual acuity was 6/18 in his left eye, with no relative afferent pupillary defect. Anterior segment examination revealed hyphaema and a blood clot on the iris. Intraocular pressure was normal. Gonioscopy revealed hyphaema, with no angle abnormality. Posterior segment examination revealed commotio retinae. On further questioning the patient revealed that he had snorted cocaine the previous night, slept, and had woken up with blurred vision.

There was no history of further injury or eye rubbing involved. The hyphaema was managed conservatively with topical drops and bed rest. On follow-up the hyphaema had resolved, no angle injury or recession or abnormal blood vessels was evident on gonioscopy. His visual acuity had improved to 6/9.

Comment

Cocaine is a powerful addictive stimulant that directly affects the brain.[1] Cocaine can be snorted through the nose, smoked, rubbed onto mucous tissues, or injected.

The effects of cocaine appear almost immediately after a single dose, and disappear within a few minutes or hours. It makes the user feel euphoric, energetic, increases heart rate and blood pressure, constricts blood vessels, and causes dilated pupils.

Ophthalmic complications described in literature include, bilateral internuclear ophthalmoplegia,[2] and central retinal artery occlusion,[3] there has been no report in the literature about hyphaema. There have been several case reports indicating onset of subarachnoid haemorrhage,[4,5] stroke, and other neurological disorders following cocaine use. In these cases, temporal association suggests a causative role for cocaine. Although a direct cause effect relationship is difficult to prove in our patient, the time of occurrence of hyphaema suggests a definite relationship with cocaine use.

Hyphaema is usually evident at initial presentation either as microscopic or manifest bleeding. Secondary hyphaema can occur within 24 h to a week and tends to be worse than the initial haemorrhage.[6]

In our case blunt trauma may have resulted in tissue damage which was not enough to cause hyphaema, but the use of cocaine is likely to have precipitated the hyphaema by a sudden rise in blood pressure. Another theory might be the transient dilation of the pupil after cocaine usage; which has been postulated in the past for rebleeds after traumatic hyphaema, which is why some ophthalmologists still advocate prescribing long-acting mydriatics in patients with traumatic hyphaema.

We would like to highlight this problem as an issue in the management of hyphaema and education of patients who use this substance.

References

1 Cocaine abuse and addiction. http://www.focusas.com/Cocaine.html. (Accessed 29 June 2005).
2 Diaz-Calderon E, Del Brutto OH, Aguirre R, Alarcon TA. Bilateral internuclear ophthalmoloplegia after smoking 'crack' cocaine. *J Clin Neuroophthalmol* 1991; **11**(4): 297–299.
3 Wallace RT, Brown GC, Benson W, Sivalingham A. Sudden retinal manifestations of intranasal cocaine and methamphetamine abuse. *Am J Ophthalmol* 1992; **114**(2): 158–160.
4 McEvoy AW, Kitchen ND, Thomas DG. Intracerebral haemorrhage and drug abuse in young adults. *Br J Neurosurgery* 2000; **14**(5): 449–454.
5 Conway J E, Tamargo RJ. Cocaine use is an independent risk factor for cerebral vasospasm after aneurysmal subarachnoid haemorrhage. *Stroke* 2001; **32**: 2338–2343.
6 Kanski JJ. Trauma. In: Kanski JJ (ed). *Clinical Ophthalmology-A Systematic Approach*. Butterworth Heinmann: Stoneham, MA, 2003, 667p.

BV Kumar, S Dhir and SD Prasad

Department of Ophthalmology, Arrowe Park Hospital, Wirral, UK

Correspondence: BV Kumar, Department of Ophthalmology, Arrowe Park Hospital, Wirral, CH49 5PE, UK
Tel: +44 151 604 7193;
Fax: +44 151 604 7152.
E-mail: drvineeth@yahoo.com

Eye (2006) **20,** 1377. doi:10.1038/sj.eye.6702216; published online 20 January 2006