

Sir,  
**Bilateral scotomas associated with retinal hemorrhages following endoscopic spinal surgery**

Fiberoptic epidural endoscopy to visualize the spinal cord and subarachnoid space has been considered a safe procedure to lyse adhesions or to inject steroids into inflamed tissues that could contribute to the low-back pain associated with persistent lumbar radiculopathy.<sup>1</sup> Acute bilateral visual loss associated with retinal haemorrhages after epiduroscopy has been documented in only two cases so far.<sup>2,3</sup> This report describes acute bilateral central scotomas with relatively spared visual acuity in a patient following endoscopic spinal surgery.

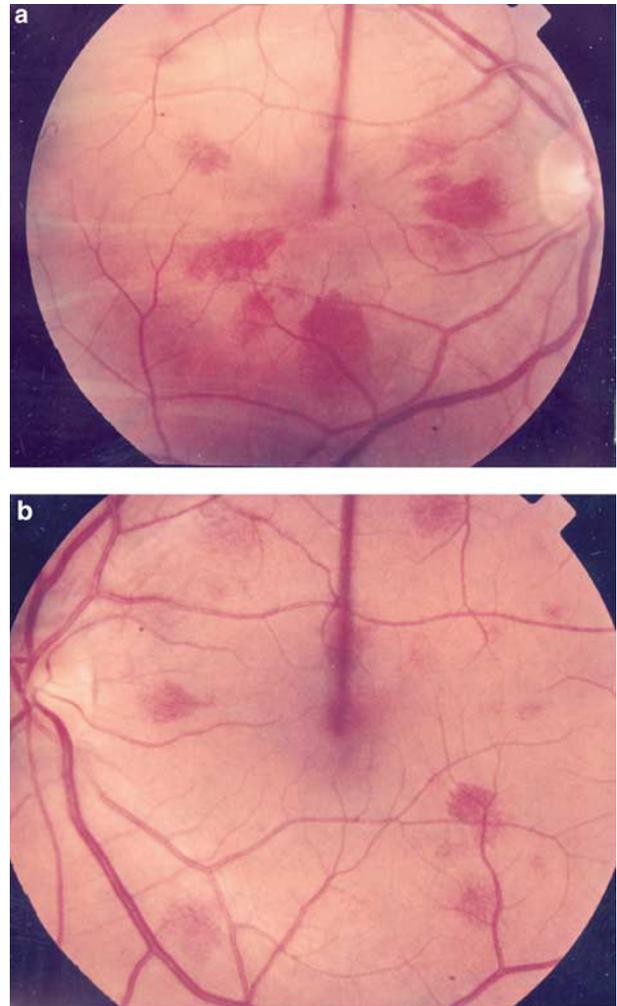
#### Case report

A 41-year-old woman who had a 2-year history of lumbar postlaminectomy syndrome with left lumbar radiculopathy unresponsive to medical management, underwent an endoscopic spinal surgery for adhesiolysis under intravenous sedation. Her vital signs remained stable throughout the procedure. Immediately after the procedure, she noted blurry vision with bilateral central scotomas.

Ocular examination at that time revealed a best-corrected visual acuity of 20/80 OU. Intraocular pressures and pupils were within normal limits. Amsler grid examination revealed bilateral absolute central scotomas. Anterior segment examination revealed a deep anterior chamber and no cells. Dilated funduscopy examination was remarkable for bilateral perimacular subretinal petaloid hemorrhages (Figure 1). Fluorescein angiography revealed blockage of choroidal fluorescence corresponding to these areas of retinal hemorrhages. After 2 months, her best-corrected visual acuity was 20/20 OU and her bilateral scotomas and retinal hemorrhages resolved spontaneously.

#### Comment

It has been hypothesized that sudden increased cerebrospinal fluid (CSF) pressure transmitted through the optic nerve sheaths to the retinal veins may cause retinal hemorrhages if the dura is inadvertently punctured and fluid is infused into the subarachnoid space.<sup>3</sup> In this patient, spinal endoscopy was performed through the anterior epidural compartment. This space is considered less expansile than the posterior epidural compartment. Injection of fluid with a higher viscosity, such as Hespan in this case, into the subarachnoid space could contribute to a hydrostatic pressure high enough to cause immediate bilateral retinal hemorrhages. In

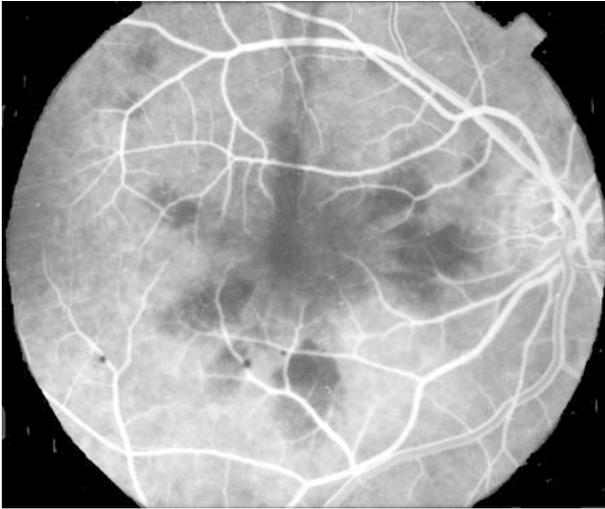


**Figure 1** Ocular fundus photographs of the right (a) and left (b) eyes demonstrate multiple retinal haemorrhages involving the posterior pole.

addition to higher viscosity, increased injection rate and volume may contribute to the risk of developing these ocular complications.<sup>4</sup>

Other similar cases in the literature have demonstrated the presence of hemorrhages in no particular configuration in all layers of the retina, suggestive of extravasation of blood within the subretinal, intraretinal, preretinal, and subhyaloid planes.<sup>3,5</sup> This patient had retinal hemorrhages in a petaloid configuration (Figure 2) that appears to be subretinal.

Unlike the two previously reported cases of severe visual loss after epiduroscopy, this report demonstrates that its visual complications do not always result in immediate blindness. This patient presented with blurry vision and bilateral scotomas. Her good visual outcome of 20/20 OU provides further evidence that patients with such complications may have an excellent visual prognosis. Her spontaneous recovery is also consistent



**Figure 2** The petaloid configuration of the retinal haemorrhages resemble the spokes of a wheel in this fluorescein angiogram of the right eye.

with the clinical course of her more superficial retinal hemorrhages.

#### References

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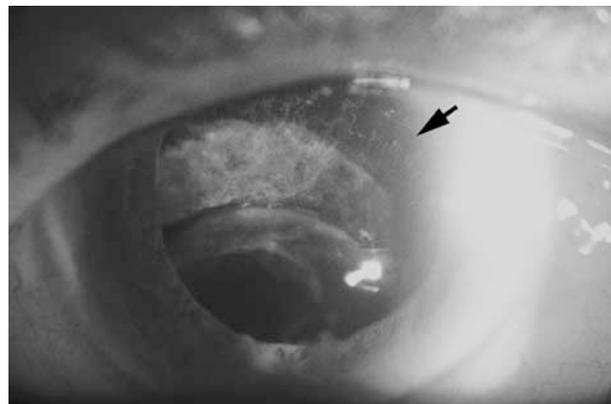
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#### Sir, Subluxation of intraocular lens within the capsular bag following a contusion injury

#### Case report

An 85-year-old healthy man sustained a contusion injury on the left eye by a speedy badminton while playing the game. He had undergone uneventful phacoemulsification with manual continuous circular capsulorhexis (CCC) and implantation of an intraocular lens (IOL) (Alcon® MZ30BD, 22.0 D) in the left eye in our hospital more than 5 years ago. The CCC was performed by using a bended 26-gauge needle as described by Gimbel and Neuhann.<sup>1</sup> The IOL was made of PMMA with an optic/overall size of 5.5 mm/12.5 mm. There was no history of laser capsulotomy. According to the patient and the ophthalmologist who examined this patient 3 days after injury, the uncorrected visual acuity was 6/15 OS with 2+ cells in the anterior chamber, the intraocular pressure (IOP) was within normal limit, and the IOL was in good position. After 4 weeks, the patient was referred to us for deteriorating visual acuity and high IOP despite being treated with carteolol hydrochloride 2% and dorzolamide hydrochloride 2%.

On examination, the best-corrected visual acuity was 6/6 OD 2/60 OS and the IOP was 16 mmHg OD 24 mmHg OS. Slit-lamp biomicroscopy showed inferior subluxation of the IOL (Figure 1). Gonioscopy showed widening of the ciliary body from 0300 to 0430 and from 0830 to 1030 clock hours. Fundus examination was unremarkable. Combined surgery of IOL explantation, implantation of a new scleral-fixated IOL and trabeculectomy was then performed. During the surgery, the subluxated IOL within the intact capsular bag spontaneously floated out of the eye upon opening of the limbal wound (Figure 2). The postoperative course was



**Figure 1** Inferior subluxation of the IOL with the optic's superior edge below the visual axis. Disruption of the superior zonules (arrow) is also noted.