Ocular perforation by an acupuncture needle

A 67-year-old male presented with decreased visual acuity (VA) and tenderness in the right eye after experiencing sudden vision loss during periocular acupuncture therapy earlier that day. The patient had a history of advanced glaucoma and present treatment was a combination of timolol and brimonidine to both eyes and acupuncture therapy. VA one year prior to presentation was 20/40 OD and 20/200 OS.

On examination, VA was 20/50 OD and 20/400 OS. Intraocular pressure (IOP) was 9 OD and 10 OS. Trace anterior chamber cells and mild nuclear sclerosis were found in the right eye and there were no external signs of ocular penetration. Dilated fundoscopy revealed a vitreous hemorrhage in the right eye. There were 2 suspect full-thickness posterior wall holes along the superior arcade with a vertical retinal laceration extending into the fovea (Fig. 1).

Retinal injury was suspected; therefore, a 23-gauge pars plana vitrectomy was performed that intraoperatively confirmed that there were 2 adjacent full-thickness injuries in the posterior pole. A retinal laceration or tear extended from 1 of the perforations inferiorly to a juxtafoveal location. Vessels crossing this laceration or tear were intact suggesting that the superficial retina was spared. Laser photocoagulation was administered around the retinal breaks sparing the foveolar region. An air–fluid gas exchange was performed with 12% C3F8.

One month postoperatively, the gas was gone and the visual acuity was 20/40 OD (Fig. 2). The retina remained flat with no postoperative complications.

Acupuncture has been used for centuries to treat a variety of ocular conditions including glaucoma.1 It is estimated that 5% of glaucoma patients in a tertiary referral glaucoma practice use complementary or alternative medicine to treat glaucoma; 2% of these patients report using acupuncture.2,3 The effectiveness of acupuncture as a treatment for glaucoma could not be established by a Cochrane review;4 it has only been studied in animal models and a few small case series with no definite benefits for IOP, vision, or visual field.5

To date, our patient has experienced a relatively good outcome although the exact mechanism of injury remains questionable. The acupuncture sites were adjacent to the orbital rim. Common periorbital acupuncture sites are indicated in Figure 3.6 There appeared to be 2 separate posterior full-thickness wounds with no obvious anterior wound. There may have been 2 separate perforations of the globe with hidden anterior wounds or 1 perforation of the globe with the eye rotated upwards (with one of the posterior wounds being an entry site and the other wound being an exit site) although the configuration and proximity of the wounds makes this unlikely. Alternatively, the 2 wounds may be entry sites for 2 separate penetrations, with no visible exit wound; the eye would have had to be rotated upwards for this to occur.

Fig. 1—Fundus photograph of right eye 1 day after injury. Two wounds are seen along superior arcade with a retinal laceration or tear tracking from the inferior wound to the fovea. Note that the crossing vessels remain intact.

Fig. 2—Fundus photograph of right eye 2 weeks post-operatively. Laser scars surround the 2 wounds. Retina remained flat.

Fig. 3—Common periorbital acupuncture sites.
Another report in the literature described a patient with a cervical epidural abscess who developed an endogenous endophthalmitis following acupuncture.\(^7\) Despite aggressive therapy with intravitreal antibiotics and vitrectomy, the resulting vision was no light perception. We believe that the use of acupuncture in and around the eye is an extremely risky procedure, with no solid evidence of its benefit, and advise against its use.

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REFERENCES