

A series of acupuncture-related ocular injuries in Malaysia

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Abstract

Introduction: Acupuncture is a complementary medicine that has gained popularity in treating various systemic illness including the eye. However, there are few reported complications following acupuncture to the eye structures.

Purpose: To create awareness regarding the potential complications following acupuncture involving the eye and orbit.

Study design: Case series.

Materials and method: We report six cases of ocular complications related to acupuncture procedures in Malaysia, from August 2019 until December 2019. The cases were compiled from a group of ophthalmologists who encountered the patients.

Results: The magnitude of the severity of complications ranges from non-sight-threatening complications to sight-threatening complications requiring evisceration. The complications compiled in this case series include preseptal cellulitis, subconjunctival haemorrhage, traumatic cataract, vitreous haemorrhage, macular hole, globe rupture, and panophthalmitis. Following the complications, patients who sustained sight-threatening complications required further surgical interventions.

Conclusion: Acupuncture has significant ocular morbidity if performed incorrectly in the eye or orbital area, ranging from mild to total loss of the eye.

Keywords: acupuncture, intervention, ocular injury, threatening complications

Kes bersiri kecederaan mata berkaitan dengan akupunktur di Malaysia

Abstrak

Pengenalan: Akupunktur merupakan perubatan komplementari yang semakin popular dalam merawat pelbagai penyakit sistemik termasuk bahagian mata. Namun, terdapat laporan mengenai komplikasi akibat akupunktur di bahagian mata.

Tujuan: Untuk memberi kesedaran tentang komplikasi yang boleh berlaku berikutan akupunktur di bahagian orbit dan mata.

Reka bentuk kajian: Siri kes.

Bahan dan kaedah: Kami melaporkan enam kes di Malaysia mengenai komplikasi selepas prosedur akupunktur pada bahagian mata, bermula pada bulan Ogos 2019 sehingga Disember 2019. Kes-kes ini dikompilasi oleh sekumpulan pakar oftalmologi yang merawat pesakit-pesakit tersebut.

Keputusan: Tahap keterukan komplikasi adalah di antara yang tidak mengancam penglihatan kepada yang boleh mengancam penglihatan, yang memerlukan pengeluaran isi kandungan mata (*evisceration*). Komplikasi yang dikompilasi di dalam siri kes ini adalah termasuk selulitis pre-septal, pendarahan subkonjunktiva, katarak traumatik, pendarahan vitreus, lubang macula, kebocoran bola mata dan panoftalmitis. Berikutan komplikasi tersebut, pesakit yang mengalami komplikasi yang mengancam penglihatan memerlukan pembedahan lanjutan.

Kesimpulan: Akupunktur boleh menyebabkan komplikasi yang signifikan jika dilakukan secara tidak betul di kawasan mata atau orbit, sama ada komplikasi ringan sehingga boleh menyebabkan kehilangan mata.

Kata kunci: akupunktur, intervensi, kecederaan mata, komplikasi terancam

Introduction

Acupuncture is a form of complementary medicine in which fine needles are inserted via skin to specific acupoints on the body to treat various types of health conditions and to relieve pain. Acupuncture was believed to originate in China following the discovery of five silver needles in the tomb of Han Dynasty Prince Liu Sheng in Hebei Province, China.¹ According to the principles of acupuncture, Qi (which means “energy”) flows in the vessels and is manipulated by the acupuncturist to restore balance, thus ensuring the success of acupuncture. Over time, acupuncture practices have spread worldwide and assimilated with the modernization of complementary medicine.

Acupuncture treatment, which should be performed by a trained acupuncturist, is purported to treat various systemic illnesses, including eye-related problems such as dry eye syndrome, glaucoma, myopia, squint, and optic nerve problems. Fine needles are introduced to specific acupoints on the periorbital area such as Jingming (UB-1), Zanzhu (UB-2), Yuyao, Sizhukong (SJ 23), and Tongziliao (GB 1), and Qiuhou and Chengqi (ST 1). These acupoints are believed to balance the Qi and improve blood circulation around the eye and ocular structures.

There have been a number of reported cases on acupuncture-related injuries worldwide, especially in China, where acupuncture started and is widely practised.² In Malaysia, the establishment of the Traditional and Complementary Medicine Act 2016 (Act 775) regulated traditional and complementary services, including acupuncture.³ The “Good Practice Guideline in Acupuncture” is published as a guide for complementary medicine practitioners in their daily practice.⁴ However, as in many nations around the world, adequate control and monitoring of complementary and alternative medicine is lacking in Malaysia, raising the possibility of complications following acupuncture. Here, we report six patients who presented with various eye complaints following recent acupuncture treatment in the orbit and eye.

Materials and methods

We conducted a retrospective review of six cases of ocular complications following acupuncture procedures to the orbit and ocular structures in Malaysia. We compiled the list of cases from a group of ophthalmologists who encountered such patients presenting from April 2019 to October 2019. The cases were collected from August 2019 to December 2019.

Results

Case 1

Worried about developing glaucoma, a 54-year-old, acupuncture-naïve Chinese male sought acupuncture treatment for slightly reduced vision in both eyes. The acupuncture treatment involved both eyes in the periorbital region. One day after the procedure, he noticed worsening of vision in his right eye, but sought treatment from the ophthalmologist 2 months later. On examination, his visual acuity was hand movement (HM) OD and 6/9 OS. Relative afferent pupillary defect (RAPD) was negative. Anterior segment examination showed hypermature cataract with liquefied lens material and inferiorly sunken nucleus. The anterior capsule was intact. B-scan showed poorly defined lens capsule with suspicion of posterior capsule rupture, opacities in the vitreous, and posterior vitreous detachment (Fig. 1). Combined phacoemulsification with lens aspiration and pars plana vitrectomy was

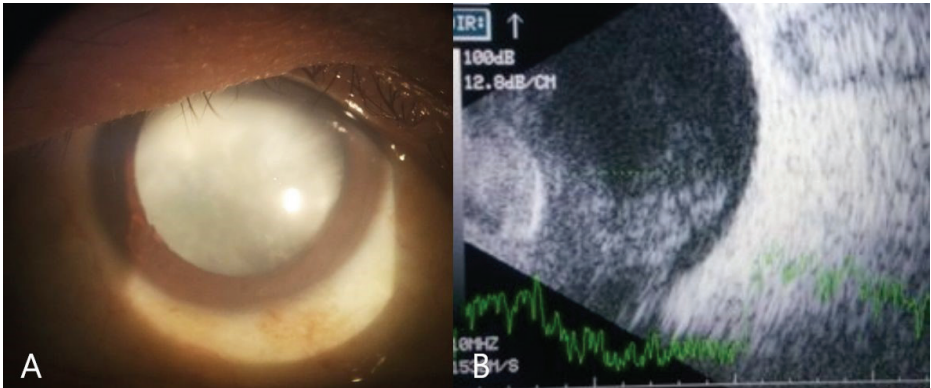


Fig. 1. Case 1. (A) Traumatic cataract post-acupuncture. (B) Inferiorly sunken lens nucleus with ill-defined posterior capsule (arrow).

performed, during which the leaked lens material was removed and no retinal break was observed. Since the posterior capsule was not intact, the intraocular lens was implanted in the sulcus. Postoperatively, he was prescribed with routine topical antibiotics and steroids. No intravitreal antibiotic was given pre- or intraoperatively. One month postoperatively, his vision improved to 6/9 OD and the retina was flat.

Case 2

A 42-year-old male had acupuncture treatment in his right eye for floaters. He presented to the ophthalmologist 2 weeks later complaining of slightly reduced vision in his right eye since the procedure. On examination, his visual acuity was 6/7.5 OD and 6/6 OS. There were no anterior segment findings of note. There was evident globe perforation inferior to the macula with subretinal haemorrhage and localised retinal detachment. The injury appeared consistent with perforation from a sharp, small object. He was treated with oral moxifloxacin to prevent endophthalmitis. At the 2-week follow-up, the haemorrhage had reduced and there was no evidence of endophthalmitis or retinal detachment. Early epiretinal membrane formation was noted on optical coherence tomography of the macula. However, examination 2 months later found a large macular hole, retinal detachment, and visual acuity of 6/60 (Fig. 2). He then underwent pars plana vitrectomy and internal limiting membrane peel with gas tamponade. One month after surgery, his visual acuity remained at 6/60, but the macular hole had decreased in size. Subjectively, the patient stated that scotoma had decreased postoperatively.

Case 3

A 40-year-old female underwent acupuncture treatment for myopia. She sought ophthalmological treatment 1 week after the procedure, complaining of blurring of vision in her right eye since the acupuncture treatment. There was globe perforation

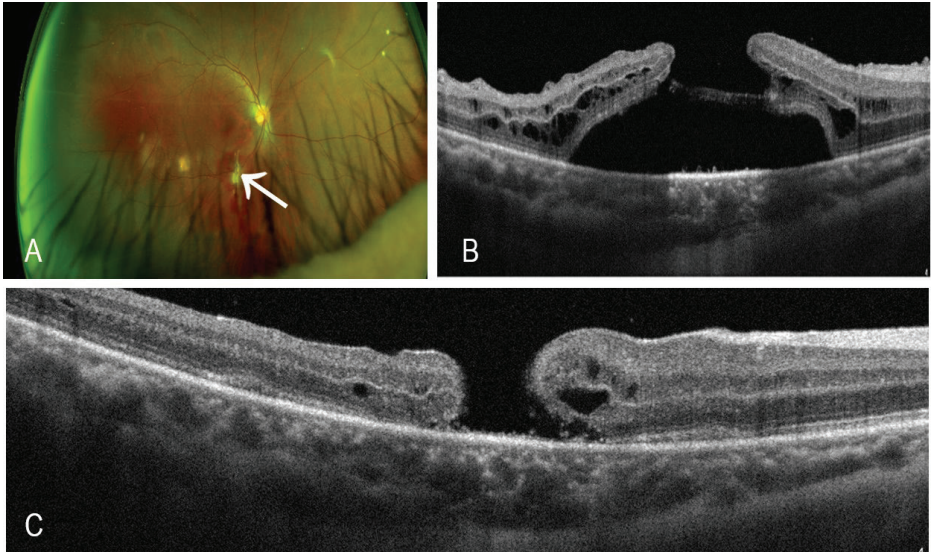


Fig. 2. Case 2. (A) Posterior globe perforation near inferotemporal arcade. (B) Macular hole formation 2 months after acupuncture treatment. (C) Improvement of macular hole size 1 month after surgery.

at the superior aspect of the right eye, with vitreous haemorrhage obscuring the macula. Her preoperative visual acuity was 6/36 OD and 6/6 OS. After pars plana vitrectomy with endolaser and gas tamponade for the vitreous haemorrhage in the right eye, the patient recovered well and regained a visual acuity of 6/6.

Case 4

A 65-year-old woman sought acupuncture treatment for her cataract. Ten days after the procedure, she presented with a complaint of bilateral eyelid swelling, and associated pain and redness. She was afebrile. On examination, her visual acuity was 6/24 OU. RAPD was absent. There was bilateral erythematous periorbital swelling with multiple punctate needle spots around the periorbital area. Extraocular muscle movements were full. Anterior and posterior segment were unremarkable. A diagnosis of preseptal cellulitis was made. She was admitted for intravenous antibiotics and recovered well.

Case 5

A 76-year-old Chinese male with advanced glaucoma in the right eye and absolute glaucoma in his left eye decided to try alternative acupuncture to treat his glaucoma. He had cataract surgery and trabeculectomy a few years prior. According to the patient, four needles were inserted in the periorbital area. Immediately after the procedure, he developed right eye pain associated with swelling and eye discharge.

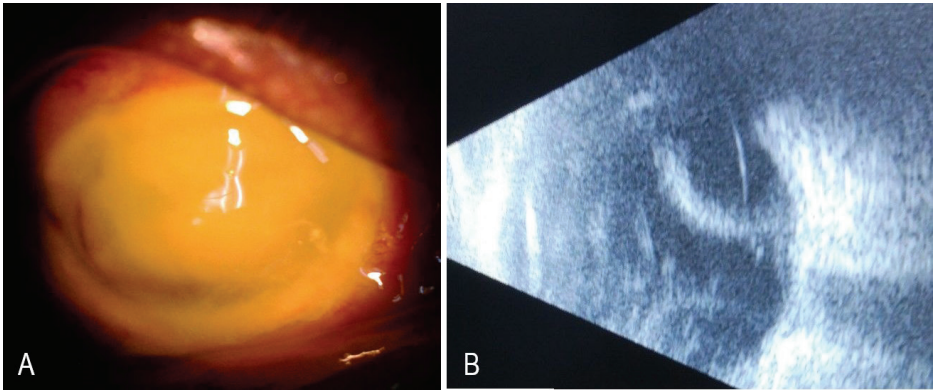


Fig. 3. Case 5. (A) Total corneal opacity with melting. (B) B-scan showing loculations in the vitreous cavity.

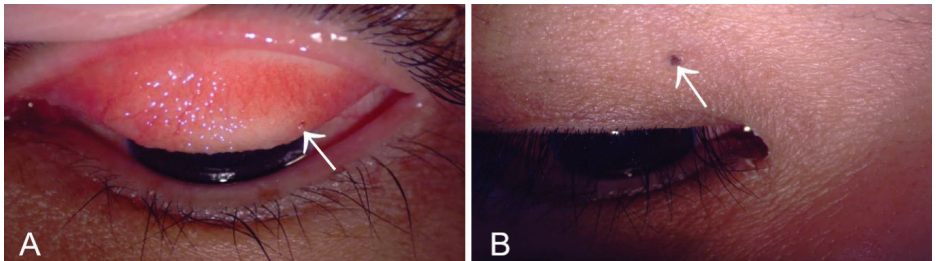


Fig. 4. Case 6. (A) Punctate spot from acupuncture needle on the palpebral conjunctiva. (B) Puncture mark on external eyelid (white arrows in A and B).

Vision in his right eye worsened and he developed fever soon after. After 8 days, his symptoms got worse and he presented to the eye casualty. On examination, there was no light perception in the left eye and slight light perception in his right eye. The right eyelid was swollen with conjunctival congestion. His extraocular muscle movement was limited in all quadrants. The cornea had melted completely, with formation of descemetocele. The Seidel test was negative. B-scan showed vitreous opacities with choroidal detachment (Fig. 3). He was admitted for impending corneal perforation and exogenous endophthalmitis in the right eye. Vitreous tapping and conjunctival swab cultures grew *Pseudomonas aeruginosa*. Intravitreal ceftazidime 2 mg and vancomycin 1 mg were given and he was started on intensive topical ceftazidime 5%, topical gentamicin 0.9%, and intravenous ciprofloxacin. Despite intensive treatment, his right eye deteriorated and had to be eviscerated at day 10 of symptom onset.

Case 6

A 38-year-old Chinese male had been newly diagnosed with bilateral advanced glaucoma and prescribed two antiglaucoma medications. His initial visual acuity was 6/36 bilaterally. Six weeks after his glaucoma diagnosis, he was noted on examination to have bilateral diffuse subconjunctival haemorrhage. Upon further questioning, he admitted to undergoing acupuncture treatment in both eyes. The haemorrhage started after the last session of a five-day daily treatment. He claimed his vision had improved after the treatment, although objective visual testing failed to demonstrate this. Six weeks after that, he had a similar episode following a similar acupuncture procedure. There was no globe injury (Fig. 4).

Discussion

Despite its global practice in complementary medicine to treat various illnesses, serious adverse events involving systemic and local complications have been reported following acupuncture treatment. Most complications are due to improper acupuncture technique and infections.⁵ The reports found that acupuncturists who practice in rural areas were more prone to cause needle injury, which is probably related to a lack of formal education and employment of non-standard techniques among these practitioners.⁵ In relation to infection, most cases occurred in rural areas where hygiene was lacking and non-disposable needles were used.⁵⁻⁶ Diabetic patients are at higher risk of contracting infection-related complications after acupuncture procedures.

In the eye, complications related to penetrating trauma, such as traumatic cataract, retinal detachment, retinal hole, and globe perforation, have been previously reported.⁷⁻¹¹ In our report, four of the patients presented with penetrating eye trauma. We postulate that globe penetration occurred during the introduction of needles to the acupoints at inappropriate depths into the orbital cavity. The orbital cavity is a closed and compact compartment containing the globe and optic nerve as well as multiple fine nerves and vessels. The minute size and close proximity of these structures makes them prone to injury. Eyeball rotation can also occur during the procedure, increasing the likelihood of ocular trauma. Compounding the risk, acupuncture is a blind procedure in which the practitioner's knowledge of anatomical structures and experience are crucial to performing the procedure successfully.

Infections following acupuncture procedures range from simple local infections to life-threatening ones with devastating consequences, such as tetanus.¹²⁻¹³ Infections may develop as early as the same day of the procedure.^{9,10} Single-use needles are highly recommended to prevent infections following this procedure. Poorly controlled diabetic patients are not recommended to undergo acupuncture procedures.

Conclusion

We suggest that clear guidelines and safety precautions should be available for acupuncturists treating the eye and surrounding areas. Patients with ocular diagnoses should be advised caution when seeking alternative medical treatments which utilise instruments applied to the ocular region. We also recommend that proper health advisory and certification be made mandatory for any kind of acupuncture involving the ocular area, requiring practitioners to have adequate knowledge of ocular and orbital anatomy and to follow sound hygiene practices to prevent infections in order to minimize the risk of complications, be they mild or potentially sight-threatening.

Acknowledgements

Informed consent to use the clinical information and photographs contained in this report has been granted by the patients via phone calls.

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