Two cases of episcleral tattooing presenting to the acute ophthalmic clinic

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Episcleral tattooing is a form of body modification, involving subconjunctival injection of pigment for cosmetic purposes.¹⁻³ This procedure is frequently performed by artists without formal ophthalmic training, in the absence of surgical instrumentation, microscopy and sterilisation,¹⁻³ and can be associated with numerous complications.¹⁻⁵ In this report, two cases of episcleral tattooing with short-term complications presenting to an acute ophthalmic clinic in Auckland, in the same week, are presented. Both cases were performed by a visiting artist with no formal medical qualifications.

**Case report**

In the first case, a 22-year-old female, with no significant past medical history, presented 20 hours following bilateral episcleral tattooing with Intenze Ink Grape, a copper-containing pigment. The patient noticed immediate ocular irritation, oedema and epiphora post-procedure, but reported no visual symptoms. At presentation, the conjunctival swelling had increased to the extent of preventing eyelid closure. Best-corrected visual acuity (BCVA) was 6/6 bilaterally, pupillary reflexes and intraocular pressures (IOP) were normal. Diffuse chemosis with mucus strands and leakage of the grape-coloured ink was observed in both eyes (Figure 1). There was no evidence of globe breach, and extra-ocular movement, cornea, anterior chamber, lens, vitreous and fundus examination were normal. A clinical diagnosis of bilateral chemosis secondary to presumed hypersensitivity to the injected pigment was made. The patient was commenced on intensive topical lubrication with hourly application of preservative-free artificial tears. Conjunctival swabs demonstrated no microbial growth. At two-week follow-up, substantial resolution of chemosis was observed, although ongoing mild ocular irritation was reported. Conjunctival folds were present and remained fixed on manipulation. These were considered to result from pigment deposition (Figure 2). No obvious signs of conjunctival ischaemia or other abnormalities were identified, but the patient was subsequently lost to follow-up.

The second case was a 27 year-old male, with no significant past medical history, presenting two days after bilateral episcleral tattooing with an unidentified green pigment. The patient reported subconjunctival haemorrhage bilaterally immediately post-procedure and progressive spreading of pigment, but denied any visual symptoms or discomfort. BCVA was 6/6 bilaterally, with normal IOP, pupillary reflexes and extra-ocular movements. Almost 360° of subconjunctival haemorrhage was observed in both eyes, with areas of mild chemosis, and superior spread of the green pigment (Figure 3). No other abnormalities were identified on slit-lamp and fundus examination. The patient was commenced on topical lubrication, but also lost to follow-up.
Figure 1: The first case at presentation (top two panels) showing diffuse chemosis with mucus strands and leakage of the grape-coloured ink in both eyes. Mild improvement and reduction of chemosis was observed following two days of intensive topical lubrication treatment (lower two panels). Pupil dilation in the lower two panels is pharmacological.
Figure 2: The first case following two weeks of intensive topical lubrication treatment showing substantial resolution of chemosis, but conjunctival folds which remained fixed on manipulation in both eyes, thought to be due to pigment deposition. The pupils are pharmacologically dilated.

Discussion

To our knowledge, this is the first report of acute complications following episcleral tattooing in New Zealand. Episcleral tattooing has gained growing popularity worldwide since being first described in 2007.1–5 These procedures are frequently conducted in the absence of relevant ophthalmic expertise or instrumentation.1,3 Numerous complications have been previously reported, including headache, photophobia, ocular irritation, pigment migration, chemosis, orbital cellulitis and infections, peri-ocular haemorrhage, scleritis, uveitis, globe penetration, secondary glaucoma, capsular lens opacity and retinal detachment.1–3 The possibility for endophthalmitis and traumatic cataract has also been raised.1–3 Inadvertent intraocular injection of copper-containing pigments, such as those used in the first case, might lead to severe ocular inflammation and toxicity associated with acute chalcosis.2,4 The potential for delayed hypersensitivity and granulomatous reactions, and the development of long-term scleral thinning or malignancy would warrant careful follow-up.1,3,4

Raising public awareness of the potential complications and risks of blindness associated with episcleral tattooing is required.1–4 There have been calls internationally for increasing regulation,1,3 and the procedure has been outlawed in the US states of Indiana, Nebraska and Oklahoma, and the Australian state of New South Wales.5,7 Locally, the Auckland Council has prohibited episcleral tattooing performed by non-medically trained personnel,8 although corresponding legislative action has yet to occur in other regions of New Zealand.
Figure 3: The second case at presentation (both panels) showing almost 360° of subconjunctival haemorrhage, with areas of mild chemosis, and superior displacement of the green pigment. The pupil is pharmacologically dilated.
Competing interests: Nil.

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