



Self-tattooing of eyeball with inadvertent corneoscleral perforation: the implication of social media

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To the Editor

Body modification procedures are becoming increasingly popular, especially, in the social media generation where an easily accessible self-care or Do-It-Yourself (DIY) culture is common [1]. We report a case of inadvertent corneoscleral perforation following self-attempt of bilateral ocular tattooing guided by a YouTube video.

A 34-year-old Caucasian man presented to our eye casualty with an acute painful right eye after performing a DIY ocular tattooing procedure using a 31-gauge hypodermic needle, and Fibracolor white baby finger paint purchased online. After multiple prompting during the initial consultation, the patient disclosed a past history of bilateral laser epithelial keratomileusis (LASEK) for myopia, radical bilateral bulbar conjunctivalectomy for post-LASEK chronic bulbar conjunctival hyperaemia, consequent cosmetically unacceptable scleromalacia and self-ocular tattooing.

At presentation, the corrected-distance-visual-acuity was hand movement (right eye) and 6/5 (left eye). There were bilateral scleromalacia involving 360° of the bulbar

associated with overlying calcified plaques (Fig. 1a, b). Examination revealed a right flat anterior chamber with white pseudohypopyon (Fig. 1c) and an intraocular pressure (IOP) of 8 mmHg. Fundal examination was completely obscured by a hypermature cataract and ocular B-scan ultrasound revealed discrete, mobile echogenic intravitreal particles (Fig. 1d). Examination of the left eye showed a low-grade anterior uveitis, which was successfully treated with topical drops.

He underwent an emergency right primary repair of inferior corneal laceration followed by lensectomy, surgical posterior capsulotomy and vitrectomy, which revealed extensive contamination of the vitreous with paint particles (Fig. 1e). The vitreous sample was sent for histopathology analysis (Fig. 2a–e). A few weeks later, a progressive inferior corneoscleral melt was observed, necessitating further surgeries, such as allogeneic lamellar sclero-corneal patch graft, amniotic membrane graft and ultimately a penetrating keratoplasty. At final follow-up, his corneal graft remained clear with a normal IOP and corrected-distance-visual-acuity of 6/36 (Fig. 1f).

Ocular tattooing has been used to treat disfiguring corneal scar, intractable diplopia and glare [2]. However, these invasive procedures can potentiate sight-threatening complications, especially, when performed by non-medically trained personnel [3]. Episcleral or conjunctival tattooing was first described in 2007 and, so far, there are several reports highlighting the significant complications associated with this type of procedure, including severe intraocular inflammation, cataract, secondary glaucoma, orbital cellulitis, scleritis and globe perforation [3, 4]. These complications arise either from the direct injury of the injection or from the hypersensitivity reaction to the constituents or contaminants of the injected pigments [3]. In addition, patients may not readily disclose the entire history of self-tattooing complicating the diagnosis and management of the injury [3], as highlighted in our case.

The easy accessibility to social media in the current generation may act as a double-edged sword. With the rapid

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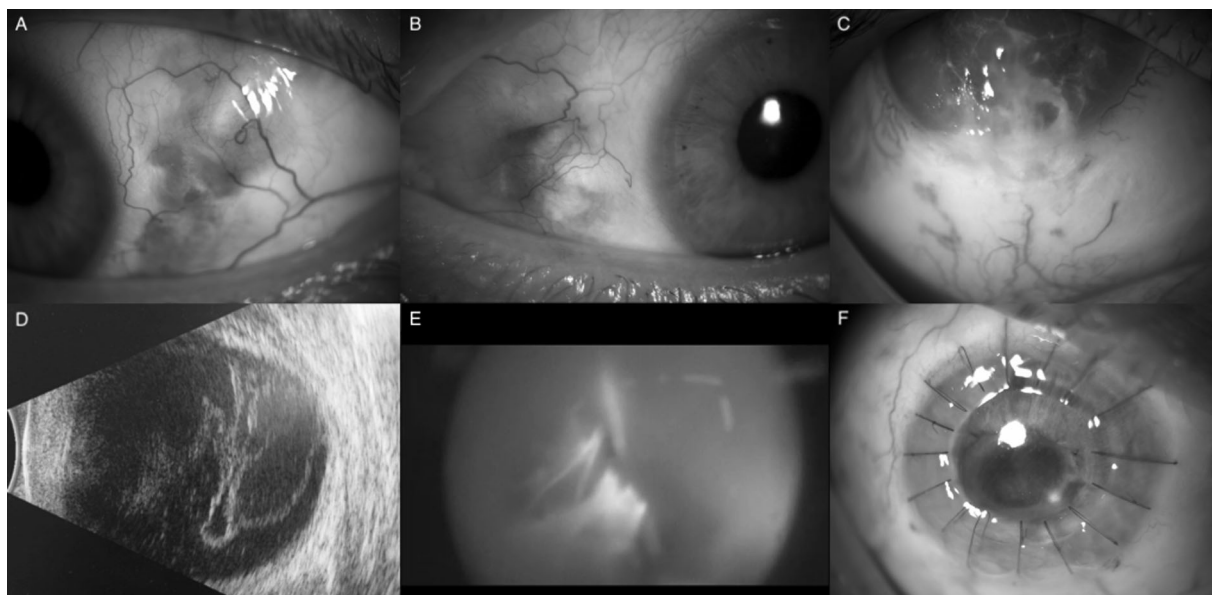
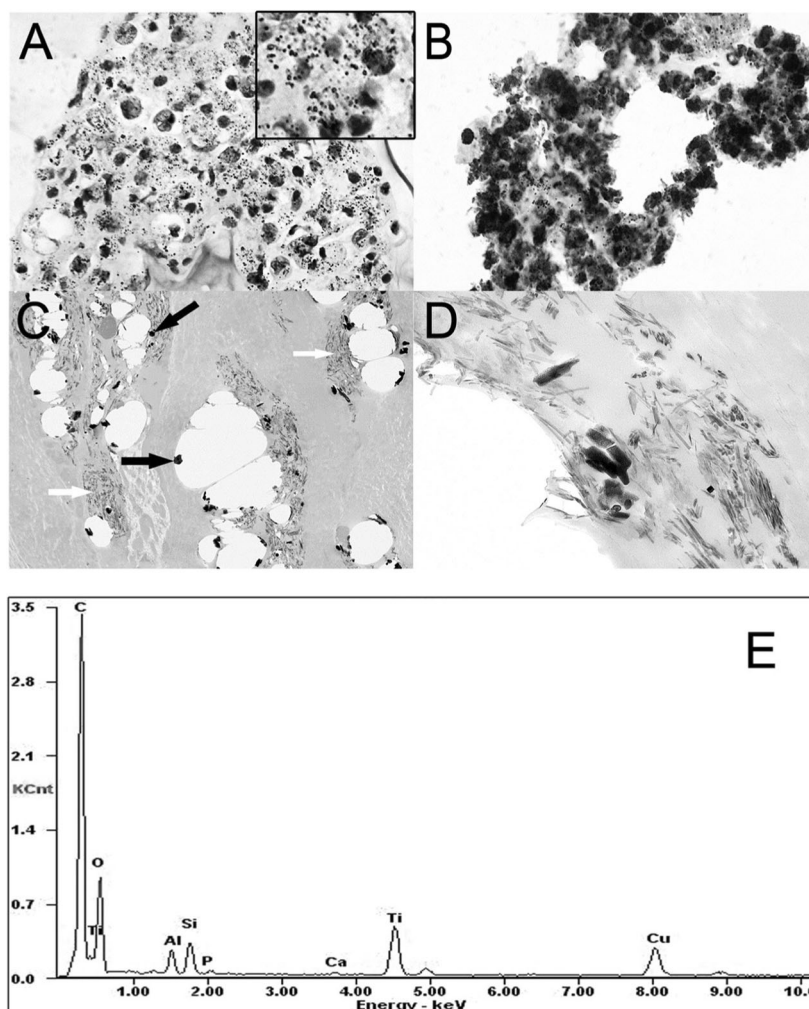


Fig. 1 **a** Slit-lamp photography of the right eye showing dark patches on the sclera related to scleromalacia. **b** Slit-lamp photography of the left eye showing white paint material in the sub-Tenon space and scleromalacia. **c** Slit-lamp photography of the right eye showing fibrinous material in the anterior chamber with hypermature white cataract

obscuring the fundal view. **d** Ocular B-scan ultrasound of the right eye showed discrete, mobile echogenic particles within the vitreous cavity. **e** Extensive contamination of the right vitreous with white paint material noted intraoperatively. **f** Slit-lamp photography showing a clear full-thickness/penetrating corneal graft with marked transpupillary membrane

Fig. 2 **a** Hematoxylin and Eosin (H&E) stained cell block preparation from the vitreous biopsy showing macrophages containing paint particles in their cytoplasm. This is clearly shown in the top right inset plate. **b** CD68 immunohistochemistry, confirming that the cells containing the paint particles are macrophages. Brown is positive staining. **c** Transmission electron micrograph (TEM) showing the larger electron dense paint particles (black arrows) and the smaller more crystalline paint particles (white arrows). The white holes are artefacts of tissue processing. **d** Higher power TEM showing the larger, more electron dense paint particles just below of centre and the accompanying, smaller, more numerous, less electron dense, more crystalline paint particles. **e** The energy dispersive microanalysis of X-ray read-out showing the various elements present in the white paint: C carbon, O oxygen, Al aluminium, Si silicon, P phosphorus, Ca calcium, Ti titanium Cu copper



proliferation of health information online, it is becoming a common culture where patients turn to the internet as their first source of information and guidance on self-care procedures [5]. Clinicians need to maintain a low index of suspicion for self-treatment when encountering unexplained injuries to enable timely recognition and intervention of the complications. Awareness of these sight-threatening complications needs to be raised amongst the health professionals, general public and regulatory bodies.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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