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CASE REPORT

Bilateral Macular Lesions Following Electrical Injury

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HIGH-VOLTAGE electrical injuries can result in a variety of ocular complications. Cataract and macular edema are the most common injuries.¹ Other injuries include punctate keratopathy, uveitis, macular hole, subretinal macular haemorrhage, and choroidal atrophy.¹⁻⁴ We report a case that optical coherence tomography (OCT) and multifocal electroretinogram (mfERG) clearly demonstrated the bilateral macular lesions following electrical injury, while the fundus examination was nearly normal.

CASE DESCRIPTION

In October, 2013, a 47-year-old man presented with a 3-month history of visual decline in both eyes. Four months before the presentation, he had exposed to approximately 10 000 volts of electricity, which touched his head by accident. He lost consciousness for approximately 5 minutes after the injury, and had burns on the left hand and the left side of his waist. On presentation, the

best-corrected visual acuity (BCVA) was 20/40 in both eyes. The slit lamp examination showed multiple, irregular, snowflake-like anterior subcapsular lenticular opacities (Fig. 1). Fundus examination showed bilateral loss of the foveal light reflex and a small yellow spot at the fovea in the right eye (Fig. 2A and B). OCT (3D OCT-2000, Topcon, Japan) revealed bilateral vertical hyper-reflective band extended from the outer segments of the photoreceptors to the inner layer of the retina, and slight interruption of the external limiting membrane and of the inner segment/outer segment junction at the fovea (Fig. 2C and D). His mfERG (RetiPort ERG system; Roland Consult, Wiesbaden, Germany) demonstrated central reduction of retinal responses in both eyes (Fig. 3). Fundus autofluorescence (FAF, Spectralis-HRA, Heidelberg, Germany) showed no abnormality. He reported no previous history of cataract. Treatment with vitamin C and calcium dobesilate was administered.

During the follow-up visit, the patient reported vision deterioration of the left eye, while the right eye remaining the same. However, a significant increase in mfERG responses was observed two months later after the treatment (Fig. 3). At his last clinical examination, in June, 2014, BCVA was 20/40 in the right eye and 20/70 in the left eye. Slit lamp examination revealed the cataract progression. Fundus

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examination was similar to the initial presentation. OCT (Spectralis OCT; Heidelberg, Germany) showed complete resolution of the vertical hyper-reflective band, while only a hyper-reflective spot of the internal limiting membrane could be seen at the fovea (Fig. 2E and F). Based on the examination we considered that the macular function was

sufficient and cataract extraction could improve his vision. Phacoemulsification and posterior chamber intraocular lens implantation in the left eye were performed without complication. During postoperative follow-up, his visual acuity improved to 20/20.

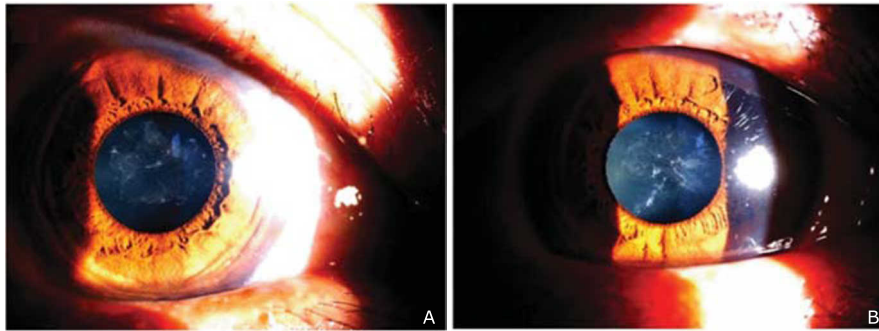


Figure 1. Slit lamp examination shows cataract of the lens.
A. right eye; B. left eye.

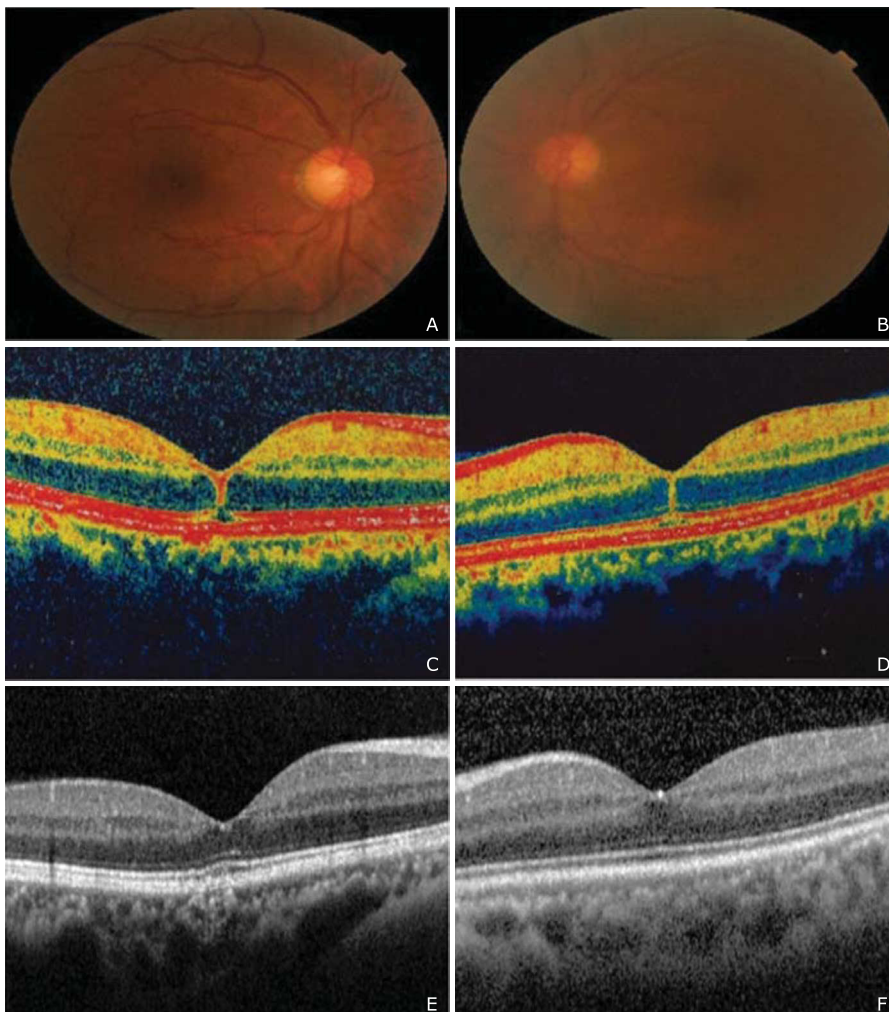


Figure 2. Colour photos of the fundus show bilateral loss of the foveal light reflex and a small yellow spot at the fovea in the right eye (A, B). Optical coherence tomography shows the hyper-reflective band (C, D) and complete remission of the hyper-reflective band after eight months of follow-up (E, F).

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