

# A Rare Case of Bilateral Electric Cataract Post High-Voltage Electric Injury

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## Abstract

Electric burn-related injury occurs when high-voltage electric current passes through the human body with the extent of injury depending on intensity and duration of electric current. High-voltage shock can cause deeper injury to the internal organs. Ocular complications result from electric injury to head, neck, or scalp region with cataract being the most common ocular manifestation. We report a case of bilateral cataract after 8 months of injury with high-voltage electric current. Both entry and exit wound on scalp and foot, respectively, were discernible. The patient underwent phacoemulsification and foldable intraocular lens implantation with good post-operative outcome.

**Key words:** Electric cataract, Electric injury, Phacoemulsification

## INTRODUCTION

Electric current-related injuries present with a variety of ocular manifestations. Most common complication is bilateral cataract formation, whereas others such as corneal opacity, uveitis, anisocoria, macular edema, macular cyst, macular hole, chorioretinal atrophy, and retinal detachment are also known to occur. The exact pathogenesis of cataract formation is not well understood with coagulation of lens protein proposed as the main mechanism.<sup>[1]</sup> It takes several days to months to develop cataract after electrical injury.<sup>[1,2]</sup> Here, we report a case of high-voltage electric injury in a young male who developed bilateral cataract.

## CASE REPORT

A 25-year-old male came to our eye clinic 8 months following electric injury with high-tension wire (11,000 volts) falling over his head. Chief ocular complaints of gradual, painless, progressive diminution of vision in the left eye were elicited. On general examination, there

was circular raw area with superficial burn of entry wound on scalp and angle of mouth [Figure 1a]. An exit wound was seen in the right foot with amputated little toe [Figure 1b].

There was a history of the right eye cataract extraction with posterior chamber intraocular lens (PCIOL) elsewhere 3 months back. On ocular examination, best-corrected visual acuity (BCVA) of the right eye was 6/9, N/6 and in the left eye hand movements close to face with accurate projection of rays in all quadrants. Both pupils were round, regular, and reactive. Slit-lamp examination showed mature cataract in the left eye [Figure 2a]. On fundoscopic examination of the right eye media was clear, disc margin was well defined with cup-to-disc ratio of 0.4, and the foveal reflex was well made out. The left eye ultrasound B scan revealed attached retina with anechoic vitreous cavity.

Routine blood investigations were unremarkable. Ocular biometry was within normal limits with an intraocular lens power of +23D. Subsequently, the left eye phacoemulsification with foldable PCIOL implantation under peribulbar anesthesia was performed. Postoperatively, BCVA was 6/6 at 1 month follow-up [Figure 2b].

## DISCUSSION

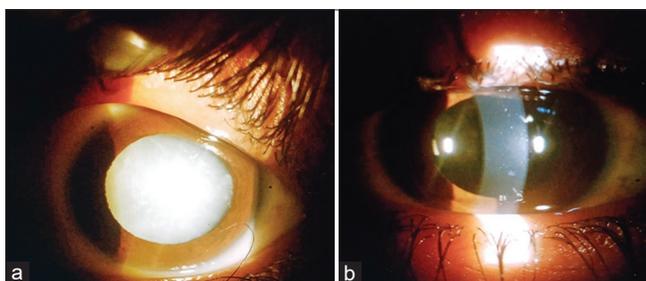
High-voltage electrical burn and injury are known to cause many ocular complications such as corneal opacity, uveitis,

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**Figure 1: (a) Facial profile showing entry wound site on scalp and angle of mouth (yellow arrows). (b) Exit wound was seen at area of little toe which underwent amputation due to necrosis post-electric injury**



**Figure 2: (a) Pre-operative and post-operative slit-lamp photograph showing total cataract and (b) posterior chamber intraocular lens**

anisocoria, macular edema, macular cyst, macular hole, chorioretinal atrophy, and retinal detachment. Cataract

formation is the most commonly seen ocular finding in eyes with electric injuries and may take month to year to develop cataract.<sup>[1-3]</sup> The incidence of electrical cataract ranges from 0.7% to 8.0%.<sup>[4]</sup> The type of cataract and rate of progression vary from patient to patient. In a subset, the cataract may remain stationary for a long period, whereas in another group, there may be progression to mature cataract within months.

The presence of an entry and exit wound made the diagnosis of electric cataract likely especially considering the young age of the patient.

## CONCLUSION

Prompt diagnosis and timely surgical intervention in eyes with cataract related to electric injury helps in good visual outcomes and early visual rehabilitation.

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