

A Case of Bilateral Electrical Cataract in Young Adult

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Abstract: *A Case Report and Management Outcomes. Electric cataract is a rare complication resulting from electrical shock. This report presents a case of bilateral electric cataract in a young adult. Methods: A 21 - year - old male experienced progressive vision loss in both eyes following an electrical shock two years earlier. Clinical evaluation revealed intumescent cataract in both eyes, accompanied by shallow anterior chamber. The patient underwent phacoemulsification with PCIOL implantation in both eyes. Results: Post - operative visual acuity improved significantly, uncorrected measuring 6/18 in the right eye and 6/9 in the left eye. The surgical outcomes were favorable, with no complications reported.*

Keywords: Electric cataract, phacoemulsification

Abbreviations

PCIOL - Posterior chamber intraocular lens

IOP - Intraocular pressure

OPD - Out patient department

HMCF - Hand movement close to face

RE - Right eye

LE - Left eye

1. Introduction

Electrical injuries to the human body can lead to a wide range of outcomes, from death to damage in various body parts. One of the potential consequences is ocular injuries, which can result in significant complications. Among these, electrical cataract can develop after a latent period and may progress rapidly. However, with proper surgical intervention, good and stable visual acuity can often be achieved, as demonstrated in this case. It is crucial to be aware of the possibility of this complication and to screen all patients who have experienced electrical injuries. While most cases respond well to surgery, the final visual acuity will largely depend on any other ocular damage caused by the electrical current. Electrical cataract are uncommon, and we are reporting a case of cataract caused by electric current.

2. Case Report

A 21 - year - old young male presented in Ophthalmology OPD at Rama Medical College and Hospital, Pilkhuwa, Hapur, Uttar Pradesh with blurring of vision in his both eyes since 2years due to electric shock. This blurring of vision is painless, progressive and gradual in onset due to electric shock injury. The boy and his family were natives to this place. There was no history of preceding febrile illness. There was no significant family history. No history of steroid intake.

On examination, uncorrected vision in both eyes is HMCF with no improvement with pinhole. Ocular movements were

full and painless in all gazes. Slit lamp examination showed intumescent cataract in both eyes. IOP OF RE - 16mmHg and LE - 14mmHg

On slit lamp examination No lid swelling or conjunctival congestion was noted. Bilateral cornea is clear, Anterior chamber of both the eyes was shallow, pupil – round, regular, reacting to light. Fundus examination was not done because of cataractous haze in both eyes, therefore B scan was done, which was within normal limits.

Systemic examination shows presence of burn marks on scalp, face, palm and angioedema.

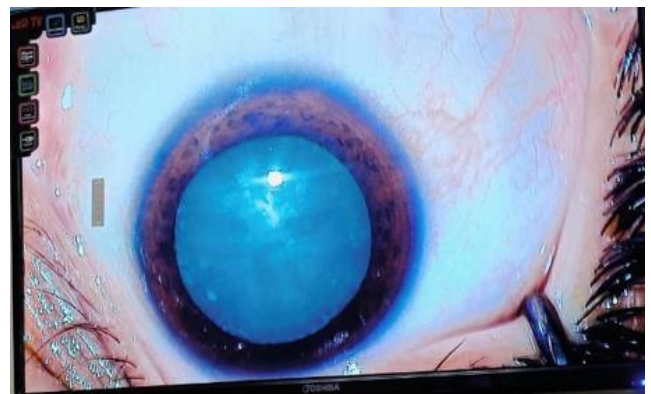


Figure 1: RE intumescent cataract



Figure 2: LE intumescent cataract



Facial image: showing scars marks of electric shock and plastic surgery.

Phacoemulsification with the implantation of a foldable hydrophobic posterior chamber intraocular lens (PCIOL) was successfully performed under peribulbar block in the both eyes at 2 weeks interval. Intraoperatively anterior chamber was noted to be shallow due to increase lenticular pressure and low scleral rigidity, considering the patient's young age.

The postoperative recovery was, with the patient achieving an impressive uncorrected visual acuity of 6/24 in right eye and 6/12 in left eye at post operative day 7.

3. Discussion

High - voltage electric burns can lead to a range of ocular injuries, which may present as conjunctival hyperemia, corneal opacities, uveitis, miosis, spasm of accommodation, cataract, retinal edema, papilledema, chorioretinal necrosis or atrophy, retinal detachment, and optic atrophy. In some rare cases, choroidal rupture and optic neuritis may occur. Macular edema can progress to the formation of macular cysts or holes.

Cataract associated with electric burns are thought to result from the coagulation of lens proteins, as well as osmotic changes following damage to the subcapsular epithelium, which typically develop 1 to 12 months after the electric shock. Opacities can form in the lens capsule and the anterior subcapsular cortex, with the posterior cortex also potentially

affected. The progression of cataract can vary significantly; some may remain stable for an extended period, while others may gradually develop into mature or hypermature cataract within six months. In rare cases, they may lead to phacomorphic glaucoma. Electric burns are sometimes identifiable as sharply defined marks at the point of contact, and the severity and speed of lens changes do not appear to correlate with the current's strength. Interestingly, younger patients' lenses are often more susceptible to damage than those of older individuals.

In most instances of cataract formation due to electric burns, the current has passed near the eye, typically through the head. Modern cataract surgery, including phacoemulsification followed by the implantation of a foldable posterior chamber intraocular lens, has resulted in stable and good visual outcomes in such cases. Therefore, appropriate surgical management of electric cataract can lead to successful visual rehabilitation, provided the eye has not sustained additional damage.

4. Conclusion

This case underscores the importance of prompt recognition and management of electric cataract. Phacoemulsification with PCIOL implantation proves to be an effective treatment option, leading to improved visual outcomes for patients with bilateral electric cataract. An incidence of 6.2% cataract is reported following electric injury, this type of injury of injury should have complete ophthalmological evaluation as soon as patient is stable. Generally these cases with good state of optic nerve and retina, uneventful elective surgery have good visual prognosis.

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