A 56-year-old woman presented with blurred vision in both eyes. She had a history of acute bilateral visual loss immediately after an indirect lightning accident 25 years earlier, but visual acuity had gradually improved to normal within 2 years of the accident. Ophthalmological examinations revealed typical posterior lenticular opacities and subtle retinal pigment epithelium alterations of the macula in both eyes. Although cataract is a common complication of lightning injury, lightning-induced cataract formation appears to be a slowly progressing process that might take many years.

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Lightning injuries are rare but commonly life threatening, and most survivors suffer from burns, hearing loss, and ophthalmic and neuropsychiatric pathologies. Ophthalmic complications include thermal keratopathy, cataract, iridocyclitis, hyphema, vitreous hemorrhage, macular edema, retinal detachment, macular hole, retinal vascular occlusions, and optic neuropathy.

Cataract is a common ocular complication of lightning injury and tends to be bilateral; however, visual deterioration usually manifests months or years after the injury. It has been suggested that impaired metabolism of the lens, mechanical damage, and protein coagulation lead to cataract formation. We present ophthalmologic features of a patient who had an indirect lightning accident 25 years earlier.

CASE REPORT

A 56-year-old woman presented with bilateral decreased visual acuity for 2 years. She described a period of bilateral visual loss immediately after an indirect lightning accident 25 years earlier while she was ironing at home. She reported that the impaired visual acuity gradually improved to normal within 2 years of the accident and no other systemic damage had been present. The ophthalmological examinations included slitlamp biomicroscopy, intraocular pressure measurement (applanation tonometry), and dilated fundus examination (+90 diopter). She had no history of systemic disease such as diabetes. On initial examination, the corrected distance visual acuity was 0.4 in the right eye and 0.5 in the left eye (Snellen charts). Slitlamp biomicroscopy revealed bilateral cortical and posterior dense lens opacities (Figure 1). Intraocular pressure measurements were normal, and bilateral retinal pigment epithelium (RPE) changes in the macula were noted on dilated funduscopy. However, optical coherence tomography and fluorescein angiography revealed no active pathology.

DISCUSSION

Cataract is the most common ocular complication of lightning injury. Decreased permeability of the lens capsule, protein coagulation, nutritional alterations of the lens, and mechanical damage are proposed mechanisms of cataract formation. Lightning-induced cataracts can occur months or years after the accident and tend to be bilateral. Lens opacities are typically located in the anterior and posterior subcapsular areas. Keratopathy, macular edema, posterior vitreous detachment, retinal tears, macular hole, and optic neuropathy are other ocular manifestations of lightning injury.
In our case, the history of acute bilateral visual loss immediately after the lightning accident could be associated with iritis, corneal damage, or vitreoretinal pathologies; however, no data were available. Anterior segment examination was normal except for typical posteriorly located snowflake dense lens opacities in both eyes. Localization and morphology of lenticular opacities were not consistent with senile cataract, but the lenticular changes were characteristic of lightning-induced cataract described in previous studies. Moreover, the patient had no family history and no other secondary causes of cataract such as trauma, systemic disease, systemic or intraocular inflammation, and medications. Indirect ophthalmoscopy revealed subtle bilateral RPE changes in the macula, but there was no active pathology.

Our report might support previous descriptions of the morphology of lightning-induced cataract. In addition, pathological processes that lead to cataract formation after lightning injury might take many years, as in this case.

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