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CT Appearance of a Traumatic Cataract

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Summary: We describe a case of a traumatic cataract that presented on CT as a hypodense lens with a hyperdense rim. The finding reflects the pathogenesis of this entity: a capsular tear and consequent entry of fluid into the lens.

Index terms: Eyes, cataracts; Eyes, injuries

The diagnosis of cataract is usually clinically obvious and does not need the support of imaging. The usual senile cataract is not apparent on computed tomographic (CT) scans. We report a patient with a traumatic cataract that had a distinct and probably specific appearance on CT images.

Case Report

A 53-year-old man was first examined by us 3 months after sustaining perforating trauma to his right eye. At that time, he underwent suturing of corneal perforation in another hospital. On admission to our hospital, visual acuity was 20/800 and intraocular pressure was normal. Slit-lamp examination revealed a peripheral corneal scar, a deep anterior chamber, and a mature cataract. The fundus could not be seen.

In order to exclude an intraorbital foreign body before surgery, a CT study was performed. Adjacent 2.5-mm axial sections along the meatoinfraorbital plane and reformatted coronal images were obtained. No intraocular foreign body was observed. However, the swollen cataractous lens was evident (Fig 1). Its center was hypodense and surrounded by a hyperdense rim. A similar appearance was seen on the coronal reformatted view. The ocular borders were intact, and the intraocular density was normal. Mild swelling of the preseptal tissue was observed.

Discussion

In perforating trauma, there is a tear in the anterior capsule of the lens and a consequent

entry of fluids. The increased fluid contents within the lens causes the hypodense appearance of the lens on CT.

The pathophysiology of an osmotic cataract is similar to that of a posttraumatic cataract. Osmotic cataracts occurring bilaterally are well recognized in diabetes (1). In hyperglycemia, the elevated glucose concentration in the aqueous humor results in glucose diffusion into the lens (2–4). An osmotic gradient develops and draws fluid into the lens. Accumulation of fluid in the interepithelial and interfibrillar spaces causes opacification of the lens, usually bilaterally (5).

The presence of a unilateral hypodense lens on CT scans may indicate a specific diagnosis of traumatic cataract. We hypothesize that a similar unilateral or bilateral appearance might be suggestive of osmotic cataract, but this should be confirmed by further studies.

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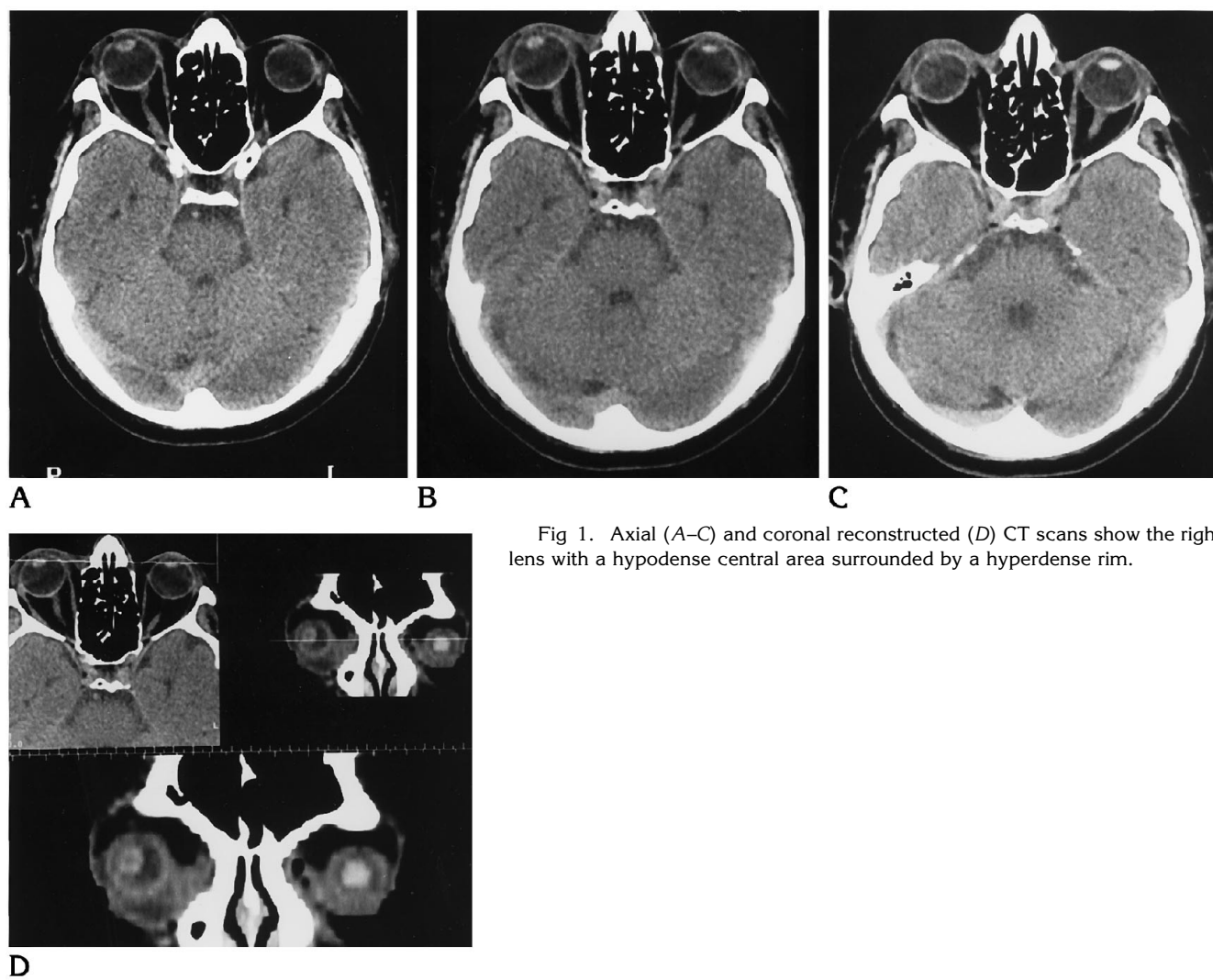


Fig 1. Axial (A-C) and coronal reconstructed (D) CT scans show the right lens with a hypodense central area surrounded by a hyperdense rim.