

Migrated subconjunctival crystalline lens: a traumatic phacocele

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DESCRIPTION

A 48-year-old woman presented to the ophthalmology emergency department with a sudden diminution of vision in her left eye for the past 3 hours ([figure 1](#)). She gave a history of blunt trauma to her left eye with a water balloon before the onset of symptoms. There was no history of systemic illness or ocular surgery in the past.

On general examination, she was alert, conscious with stable vitals. On ocular examination, the vision of her left eye was a perception of light with accurate projection of rays. However, there was no obvious relative afferent pupillary defect and the intraocular pressure was 8 mm Hg. On slit-lamp examination, there was a subconjunctival intact crystalline lens present superiorly at 12 o'clock ([figure 2](#)). Anterior segment examination revealed diffuse corneal haze and multiple Descemet membrane folds. The anterior chamber was irregular in depth, there was dispersed hyphema, and there were multiple iris sphincter tears along with a superior iridodialysis. Clinically, there was aphakia, and vitreous strands were seen in the anterior chamber. Indirect ophthalmoscopy revealed vitreous haemorrhage. Her right eye was normal.

Ultrasound B-scan revealed the presence of vitreous haemorrhage in the left eye. The lens echoes were not detected anywhere.

A diagnosis of left eye post-traumatic phacocele was made and the patient was planned for surgical removal of the crystalline lens with the repair of the scleral wound. Under the strict aseptic condition, a localised superior limbal peritomy was made. The crystalline lens was meticulously dissected from the vitreous using a pair of vannas scissors. A juxta-limbal superior scleral perforation of 8 mm size was noted, prolapsed vitreous from the wound site was lifted gently using a cotton swab and trimmed flush to the sclera, and the perforation was repaired with a 6-0 vicryl suture.

On the first postoperative day, her unaided vision was hand movement close to the face which



Figure 2 Picture showing superiorly migrated crystalline lens in the subconjunctival space.

on putting a +10D lens improved to 6/36. On a visual evoked potential (VEP) test, the response was comparable in both eyes. The patient is being planned for a contact lens trial.

Traumatic dislocation of crystalline lens into the subconjunctival space or subtenon space is known as a phacocele. It is derived from the Greek word 'phaco' meaning lens and 'kele' meaning hernia and was first reported by Fejer.¹ Anterior phacoceles are more common as compared with posterior phacocele. Posterior phacoceles are usually associated with retinal tears and retinal detachments.²

There is limited literature on phacoceles as many authors believe that a rigid sclera and a hard-crystalline lens are prerequisites for it to occur.¹⁻³ The incidence is rare and happens because of either a direct or indirect impact from a blunt trauma.⁴ There is a ruptured scleral wound, most frequently between the limbus and the spiral of tillaux, through which the crystalline lens comes in the subconjunctival space.^{2,3} According to Arlt's theory, a blunt trauma decreases the diameter in the line of impact and secondarily increase the diameter of the equator to this line.¹ The most common site of impact is the temporal region, a result of projection of energy, the globe frequently ruptures in the superonasal quadrant. The second most common site is superotemporal.²

Symptoms typically include diminution of vision, pain and redness. While the signs seen are the presence of a subconjunctival crystalline lens, iris sphincter tears, iridodialysis, hyphema, aphakia with or without features of corneal decompensation like corneal oedema and haze.



Figure 1 Clinical picture of the patient at presentation.



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Images in...

Ultrasound B-scan is done to confirm the diagnosis. Lens echoes are absent, the scan also aids in detecting vitreous haemorrhages, retinal detachments, suprachoroidal haemorrhages and endophthalmitis. In case of a posterior phacocele, a well-defined oval mass with a high surface and a variable internal reflectivity are appreciated in the orbital space adjacent to the sclera with or without a retinal detachment.² Ultrasound biomicroscopy proves to be superior to B-scan and anterior segment optical coherence tomography in the diagnosis of phacocele. CT scan can be done for evaluation of orbital trauma, lens dislocation and orbital fractures.⁵

The primary goal in the management of a phacocele is the extraction of the displaced lens and maintenance of globe integrity.⁶ The wound should be meticulously explored; the crystalline lens should be separated from the underlying vitreous and the scleral wound should be repaired with or without an intraocular lens (IOL) implantation. Cohen reported that primary IOL implantation results in a difference of refraction of 4 dioptres on using biometry of the non-traumatic eye, whereas Chuang and Lai emphasised in deviation of refraction of only 1 dioptre in secondary IOL which concludes secondary IOL is much better

than primary IOL.^{7,8} Scleral fixation of IOL should be performed by creating scleral pockets⁹ as most of these cases have a corneal compromise and inadequate capsular bag support. The anterior segment should also be carefully examined for any retained nuclear fragment, which may later lead to inflammation and require surgical removal.¹⁰

In our case, we proceeded within toto crystalline lens extraction combined with scleral perforation repair using 6-0 vicryl and the eye was left aphakic.

The patient on follow-up has good response in VEP and is currently being planned for contact lens trial. Surgical options for secondary IOL in our patient include scleral-fixated IOL, iris-claw IOL and anterior chamber IOL.

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Patient's perspective

I hope I regain my vision. The balloon made me blind.

Learning points

- ▶ Phacocele can occur in any case of blunt ocular trauma, irrespective of age and sex, with previous ocular surgery and systemic illness predisposing to weak sclera being common predisposing factors.
- ▶ The most common site of phacocele is superonasal, because of projection of energy caused by the impact in the temporal region.
- ▶ Since phacoceles are associated with scleral perforation, surgery aims at the extraction of lens with scleral perforation repair with secondary intraocular lens implantation.
- ▶ Following the primary repair and phacocele extraction, the prognosis can be assessed with the help of plus 10 dioptre lens, refraction and visual evoked potential

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