

## PHACOCELE FOLLOWING FIST PUNCH: A RARE CASE REPORT

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### ABSTRACT

#### AIM

A subconjunctival or a sub-Tenon's dislocation of natural crystalline lens is termed as phacocele, mostly due to blunt force impact on previously thinned and weakened sclera as in high myopes, previous ocular surgery, rigid sclera or hard crystalline lens. Here, we report a 40-year-old woman with phacocele due to fist punch on her eyeball with no associated surgical or myopic history. Phacocele in itself is rare and in our knowledge this is the first reported case of phacocele following fist punch.

#### KEYWORDS

Phacocele, Scleral Rupture, Traumatic Phacocele, Blunt Trauma, Lens Dislocation, Fist Punch Phacocele.

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**INTRODUCTION:** A blunt trauma can result in a scleral rupture with subsequent dislocation of the crystalline lens through the ruptured sclera into the subconjunctival or Tenon's space termed as phacocele. Most of the cases of phacocele are due to high impact blunt trauma. The eyeball behaves like a fluid filled incompressible structure and whenever a blunt force sufficient enough in magnitude hits the eyeball, it can either cause a scleral rupture at the site of impact (direct injury) or somewhere else (indirect injury) associated rarely with dislocation of lens into the subconjunctival or Tenon's space. Here, we report a case of phacocele due to fist punch with no previous history of any ocular surgery or myopia.

**CASE REPORT:** A 40-year-old woman presented with complaints of sudden diminution of vision in her left eye following a blunt injury. Thorough history revealed that she was hit by her husband and was hit in her left eye by a fist punch. Vision was 6/9 in her right eye and projection of light (PL) positive and projection of rays (PR) negative in superior and nasal quadrants in left eye. Intraocular pressure was non-recordable in her left eye and 18.2 mmHg in her right eye. Interpalpebral fissure was narrow with subconjunctival haemorrhage and a firm, well-circumscribed subconjunctival mass superiorly about 2 mm from the limbus beneath the upper eyelid. No abrasion, laceration or black eye was seen in the periorbital region. Cornea was hazy with total hyphaema in the anterior chamber. Lens and iris details could not be assessed. A B-scan ultrasonography revealed echogenic debris in the vitreous suggestive of vitreous haemorrhage and associated retinal detachment.

Patient was scheduled for surgery, a nick was made and extended from 2 to 10 o'clock around the subconjunctival mass. An in-toto crystalline lens was found and removed. Scleral rupture of about 6 mm was noted and sutured with 6-0 Vicryl suture. Anterior chamber wash along with anterior vitrectomy was done and patient was left aphakic. Post-operatively, patient was kept on injectable steroid (Dexamethasone) and antibiotics (Cefoperazone-sulbactam) with topical steroid cover and oral serratiopeptidase. Patient was scheduled for re-surgery after resolution of inflammation but was lost to followup.



**Fig. 1: Patient with Superior Phacocele. (Note the Well-delineated Mass)**



**Fig. 2: Nick given from 2 to 10 'o' clock Position on the Conjunctiva with Spontaneous Extrusion of Phacocele**

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**Fig. 3: The Crystalline Lens after in-Toto Removal**

**DISCUSSION:** Phacocoele refers to subconjunctival or sub-Tenon's dislocation of crystalline lens. It was first reported by Fejér in 1928.<sup>[1]</sup> Phacocoele has been reported to comprise 13% of all lens luxations.<sup>[2]</sup> The eye has been described to behave like an incompressible sphere because of its liquid contents.<sup>[3]</sup> Therefore, a blunt force of sufficient magnitude will result in a transient rise in intraocular pressure thereby rupturing the sclera, and in rare cases a dislocation of crystalline lens through the defect into the subconjunctival or Tenon's space. In our case, the fist punch would have acted like a closed globe injury suddenly increasing the intraocular pressure and giving away the sclera with associated lens dislocation.

The rupture site can be due to direct or indirect injury away from the actual site of impact. Bhattacharjee et al found in their study of 8 cases where males predominated in a ratio of 3:1.<sup>[4]</sup> Most of the dislocation with scleral rupture occurs supero-nasally,<sup>[5]</sup> followed by superior and supero-temporal quadrant. It is seen most commonly due to scleral rigidity, hard crystalline lens, thinned sclera as in myopes or any previous surgeries. Intraocular pressures are always unrecordable to low at presentation. Phacocoele is uncommon in children because of soft lens and elasticity of outer layers and occurs frequently in elderly aged >40 years as was observed by Fejér. Phacocoeles have been reported after various types of blunt trauma impacts like by wood piece, coconut leaf, metallic rod,<sup>[4]</sup> own finger,<sup>[6]</sup> post surgeries like goniotomy,<sup>[7]</sup> trabeculectomy,<sup>[8]</sup> or systemic conditions.<sup>[9]</sup> Spiral of Tillaux is the most common site of scleral rupture.<sup>[3]</sup>

It is the imaginary line joining the site of insertion of four recti muscle on sclera.

**CONCLUSION:** Any case of blunt injury; however trivial it may be, with the absence of crystalline lens in its natural place should be suspected for phacocoele. Complete ocular examination, intraocular pressure measurement and investigation like B-scan ultrasonography comes handy. In our knowledge, this is the first reported case of phacocoele following fist punch.

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