

Pearly white intraocular lens opacification – “Tertiary cataract”

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Key words: Cataract surgery complication, hydrophilic IOL, IOL opacification, phacoemulsification

A 60-years-old female presented with chief complaints of left eye diminution of vision since 6 months. Patient underwent both eyes cataract surgery 2 years back elsewhere. On examination, her best corrected visual acuity (BCVA) was 6/6 in right eye and 6/18 in left eye. On torch light examination, there was presence of white pupillary reflex in left eye appearing to be white cataract [Fig. 1a]. On careful slit-lamp biomicroscopic examination, both eyes were found to be pseudophakic with presence of white opacification over intraocular lens (IOL) in left eye [Fig. 1b]. On dilated examination, whole of the hydrophilic IOL (including optic and both haptics) was opacified in left eye, giving pearly white appearance to the IOL [Fig. 2]. Patient underwent IOL exchange with acrylic hydrophobic IOL. Postoperative

BCVA was 6/6. Explanted opacified IOL was sent for detailed light microscopy (including special staining) and scanning electron microscopy. Alizarin red [Fig. 3a] and von Kossa staining [Fig. 3b] was suggestive of presence of calcium deposition over the IOL surface. Scanning electron microscopy of the explanted IOL showed presence of calcium crystals over the surface of IOL [Fig. 4].

Discussion

The IOL opacification is a rare complication, usually occurring in the late postoperative period in hydrophilic IOLs. The exact causes and patho-mechanisms are still unknown^[1,2] It has also been proposed that supposed disturbance of the blood-aqueous-barrier caused by underlying conditions may contribute to the process.^[3] This condition of pearly white IOL opacification, can be easily mistaken with white cataract or posterior capsular

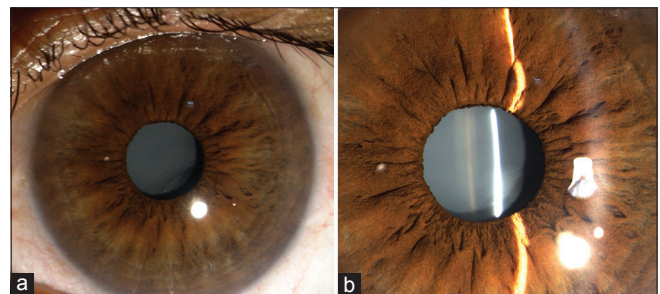


Figure 1: Anterior segment photographs of left eye, (a) on diffuse illumination, showing white pupillary reflex; (b) On slit examination, showing presence of pearly white opacification over intraocular lens (IOL)

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	DOI: 10.4103/ijournal.IJO_205_19

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Received: 29-Jun-2019
Accepted: 26-Aug-2019

Revision: 29-Jul-2019
Published: 19-Dec-2019

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Cite this article as: Gupta G, Goyal P, Bal A, Jain AK, Malhotra C. Pearly white intraocular lens opacification – “Tertiary cataract”. Indian J Ophthalmol 2020;68:188-9.

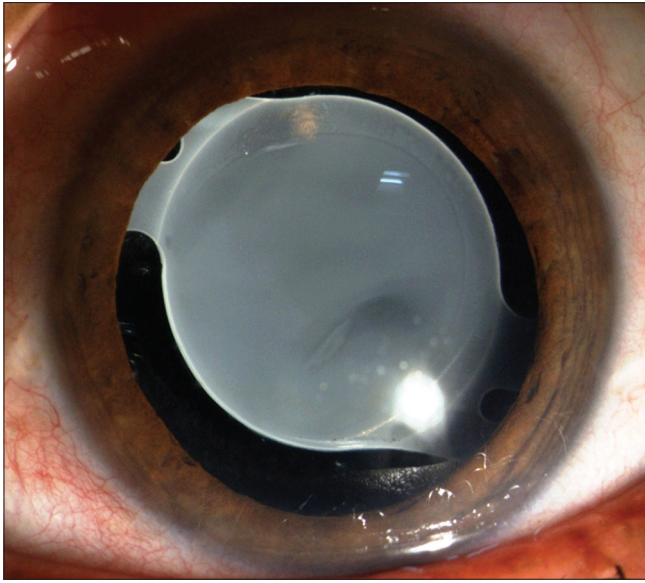


Figure 2: Anterior segment photograph on dilated examination, showing opacification of whole of the hydrophilic IOL (including optic and both haptics), giving pearly white appearance to the IOL

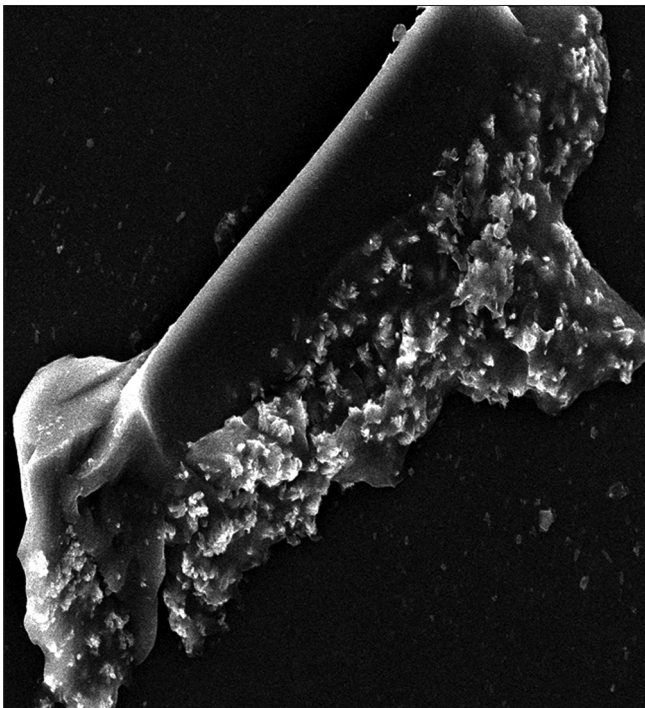


Figure 4: Scanning electron microscope scan of explanted IOL showing numerous crystalline deposits situated over the optical surface of IOL (SEM, $\times 3000$)

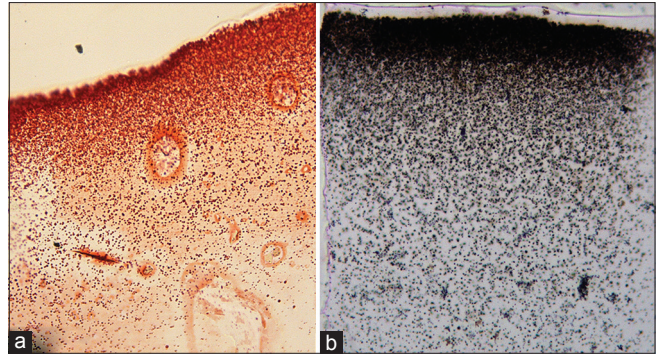


Figure 3: Analysis of explanted IOL: (a) Photomicrograph showing numerous granular calcium deposits (Red) beneath the edge of the optical surface (Alizarin Red, $\times 400$), (b) Photomicrograph showing numerous granular calcium deposits (Black) beneath the edge of the optical surface (von Kossa, $\times 400$)

opacification (secondary cataract), that is why the term, "Tertiary cataract." Therefore, detailed clinical evaluation including careful slit lamp examination and dilated examination is of paramount importance in diagnosis of this condition to prevent intraoperative surprises. These cases if visually significant require IOL exchange procedure for treatment, which is associated with good visual outcome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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