



# Diagnostic imaging techniques in patient with liquefied aftercataract imitating intraocular lens opacification

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## ABSTRACT

An 81-year-old patient was referred for an intraocular lens (IOL) exchange surgery because of a presumed IOL opacification. Using diagnostic imaging techniques such as anterior segment optical coherence tomography (OCT) and Scheimpflug imaging, we revealed that the presumed IOL opacification was in fact a liquefied aftercataract. As a result, an intraocular surgery was avoided and the patient was successfully treated with a neodymium-doped yttrium aluminum garnet (Nd:YAG) laser capsulotomy.

## 1. Case report

An 81-year-old female patient was referred for IOL exchange surgery due to IOL opacification. The patient reported a gradual vision loss in her right eye for two years. Cataract surgery was performed 19 years ago and the IOL model was unknown. Corrected distance visual acuity (CDVA) in the right eye was 20/100. The left eye was totally blind (no light perception) due to a glaucomatous optic atrophy. Slit lamp examination of the right eye revealed a homogenous opacification appearing to be behind the IOL as well as posterior capsule opacification. We performed slit lamp imaging (Fig. 1), Scheimpflug imaging using Pentacam AXL Wave (OCULUS Optikgeräte GmbH, Wetzlar, Germany) (Fig. 2), as well as anterior segment OCT imaging using ANTERION (Heidelberg Engineering GmbH, Heidelberg, Germany) (Fig. 3). The accumulation of a milky substance in the capsular bag could be demonstrated. The Nd:YAG laser capsulotomy was performed without complications (Fig. 4). A slight inflammatory reaction not requiring treatment was observed on the follow-up examination. Five days after the treatment, CDVA was 20/32.

## 2. Discussion

Liquefied aftercataract occurs when the anterior capsular bag opening becomes occluded by the IOL optic.<sup>1</sup> The liquid contains high concentrations of alpha-crystallin and beta-crystallin.<sup>2</sup> Due to its milky appearance, liquefied aftercataract is sometimes confused with IOL opacification.<sup>3</sup>

## 3. Conclusion

Diagnostic imaging techniques aid the differentiation of liquefied aftercataract from IOL opacification. The correct diagnosis is crucial when choosing the treatment approach, as liquefied aftercataract can be successfully treated with Nd:YAG laser capsulotomy, while an IOL opacification would require an IOL exchange.

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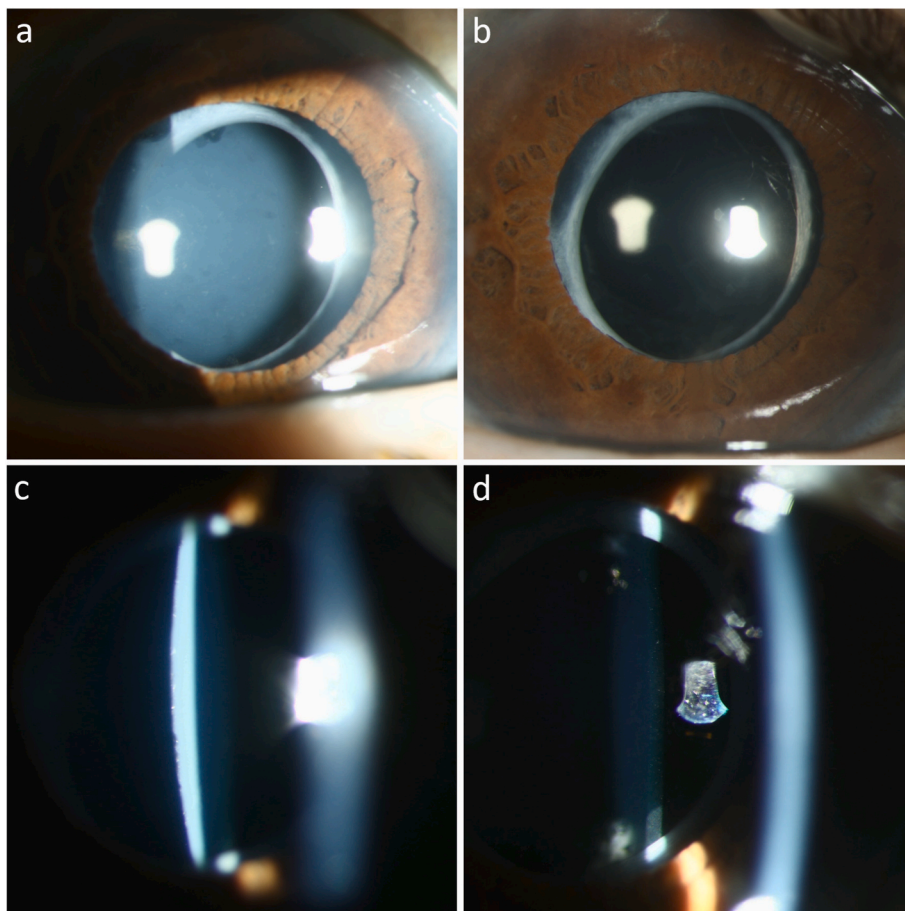
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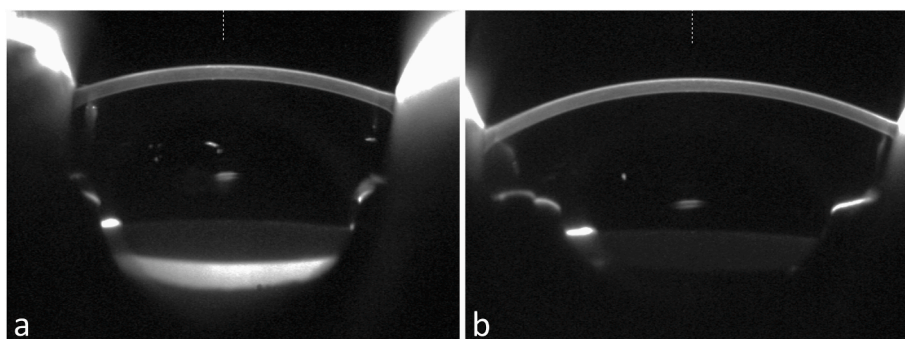
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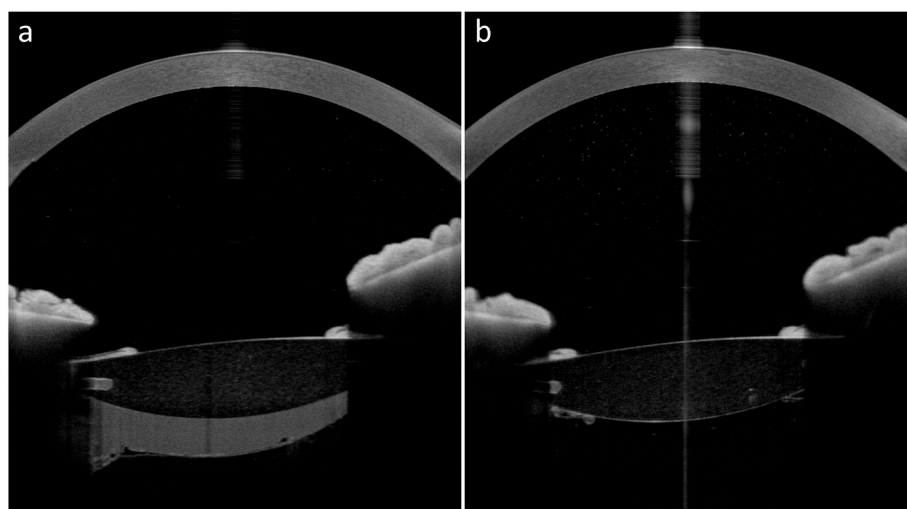
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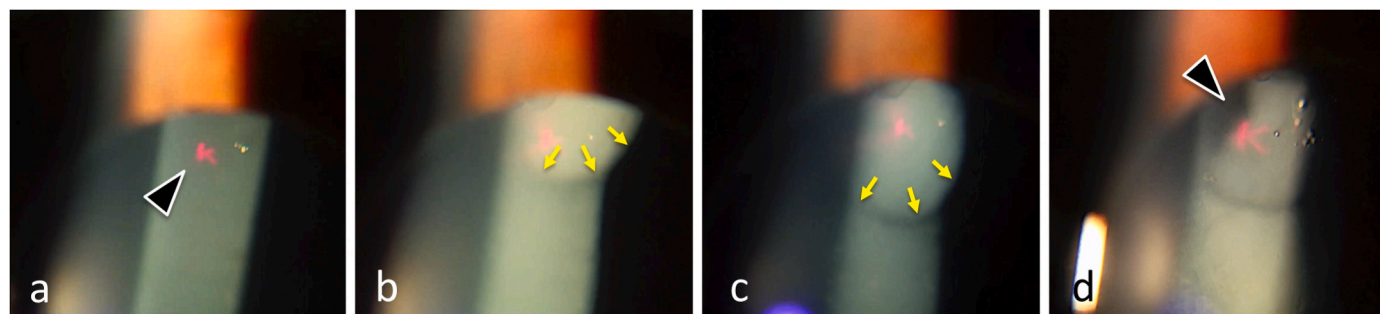
**Fig. 1.** Slit lamp imaging before (a) and after (b) the treatment. Homogenous opacity behind the IOL (c) is no longer present after the treatment (d).



**Fig. 2.** Scheimpflug imaging before (a) and after (b) the treatment.



**Fig. 3.** Anterior segment OCT imaging before (a) and after (b) the treatment.



**Fig. 4.** Nd:YAG laser capsulotomy: a – focusing the aiming beam (arrowhead); b, c – arrows indicate the dense opaque mass descending after the initial shots; d – the view into the vitreous chamber is clearing up (arrowhead).

#### Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

#### Declaration of competing interest

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