

## Is This Déjà Vu?

**R**is Brown\* is an 85-year-old woman who enjoyed perfect vision in both eyes following routine, bilateral cataract surgery 7 years ago. However, she came to our clinic complaining of a slowly progressing, painless decrease in vision in her left eye over the last year. She had a history of pseudoexfoliation glaucoma.

### What We Saw

On examination, Mrs. Brown's best-corrected visual acuity was 20/20 in the right eye and 20/40 in the left. Her intraocular pressure was 16 mm Hg in the right eye and 18 mm Hg in the left.

The optic nerve's cup-disc ratio was 0.5 in both eyes, and the rest of the fundus exam was normal. On slit-lamp examination, the right eye had a well-centered posterior chamber intraocular lens (PCIOL). In contrast, the left eye caught our attention—posterior to the IOL, which was difficult to visualize, she had a white-yellow opacity in a lenticular shape. Its appearance was very similar to that of a nuclear sclerotic cataract (Fig. 1). Is this déjà vu? It definitely could not be a cataract! After all, she had previously undergone phacoemulsification and PCIOL implantation in both eyes.

### Differential Diagnosis

What caused Mrs. Brown's decreased vision 6 years after cataract surgery? Macular disease can, of course, cause

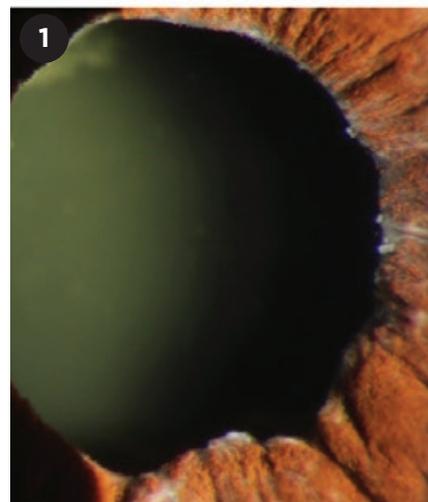
visual loss after cataract surgery, but we found no retinal abnormalities in our patient.

Before examining Mrs. Brown, we had considered posterior capsular opacification (PCO), which is very common following phacoemulsification.<sup>1</sup> Although PCO presents as an opacity that will obscure vision, this case involved much more than an opacified capsule. Our patient had yellow-white material that looked like a cataract but was actually turbid material between the lens implant and the posterior capsule.

Capsular distension syndrome (CDS) was another possibility; this less common complication of cataract surgery has an occurrence of 0.3%-1.0%.<sup>2</sup> But CDS usually presents soon after cataract surgery, not 6 years later. It typically is caused by retained viscoelastic material posterior to the lens and involves shallowing of the anterior chamber associated with anterior vaulting of the IOL, distension of the posterior capsule, and a postoperative myopic shift.

### Making the Diagnosis

High-resolution optical coherence tomography (HR-OCT) was used to visualize and confirm the morphologic changes: an anteriorly displaced PCIOL and a posterior capsule distended far behind the surface of the implant. We noted turbid/hyperreflective fluid pos-



**WE GET A LOOK.** At the slit lamp, we noted a distended capsular bag with a yellow/milky suspension, which appeared similar to a cataract.

terior to the lens. In addition, bright white material was seen in the fornices of the capsular bag (Fig. 2). Based on these clinical and imaging findings, a diagnosis of CDS due to retained and sequestered liquefied cortex was made.

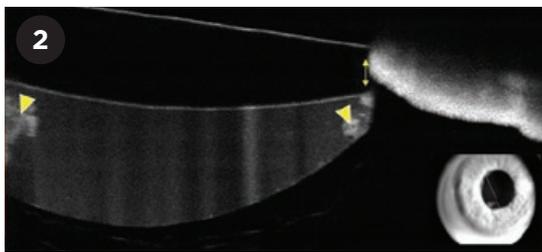
### Discussion

Our patient had an unusual presentation of CDS 6 years following cataract surgery. An accumulation of sequestered, retained cortical material—which had become turbid over time—was present posterior to the PCIOL. The accumulation had a yellow coloration and looked remarkably similar to a nuclear cataract.

**Classification.** CDS, also described in the literature as capsular block syndrome, can be classified as intra-

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**HR-OCT BEFORE TREATMENT.** We observed a distortion of the posterior capsule and sequestered material between the IOL and the posterior capsule. Note the residual cortical material (arrowheads) and anteriorly displaced IOL (vertical arrow).

operative, early postoperative, or late postoperative depending on its time of onset. A classic finding is the presence of an opaque fluid trapped between the PCIOL and the posterior capsule.<sup>3</sup> Many theories have surfaced about the origin of this suspension.

**Etiology.** One theory is that trapped viscoelastic material is responsible for CDS, as a group in Japan found that the trapped fluid was analogous to sodium hyaluronate (assessed by high-performance liquid chromatography). The researchers found that parameters such as elution time and density were very similar to those observed with Healon, suggesting the retention of this material was consistent with the whitish solution found in CDS.<sup>4</sup> Nishi et al. speculated that lens epithelial cells undergo fibrous proliferation through contact with the IOL.<sup>5</sup> As the anterior capsular opening is oftentimes in full contact with the IOL, these accumulated collagens are confined to the space behind the IOL.

**Imaging.** HR-OCT has been helpful in identifying ocular surface pathologies, such as ocular surface squamous neoplasia, pterygium, and melanoma, among others.<sup>6</sup> It can also confirm the diagnosis of CDS. It provided us with excellent images of the anterior segment. In addition, HR-OCT made it easier to capture the lens capsule than Scheimpflug imaging,<sup>7</sup> which has been used in the past to diagnose CDS.

We were able to confirm the opacified turbid material and were also able to see the densely hyperreflective residual cortical material, which presumably was the source of the turbid

material. On biomicroscopy, the sequestered liquefied cortex looked very much like a cataract, with a yellow/white color and a convex posterior shape. It was not déjà vu!

**Sometimes missed.** Since this delayed presentation of pathology is relatively uncommon, it is not often included in the differential diagnosis for late visual decline after cataract surgery.

### Treatment

Mrs. Brown underwent Nd:YAG laser capsulotomy in the left eye. Multiple shots were directed toward the posterior capsule, and an abrupt release of opaque fluid into the vitreous cavity was noted immediately following disruption of the capsule. Straightaway, the patient reported clearer vision but described persistence of some haziness. As we were concerned that she might experience an inflammatory response

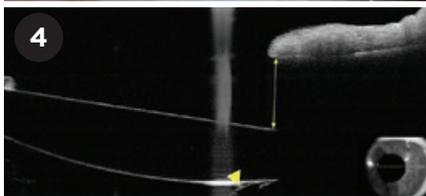
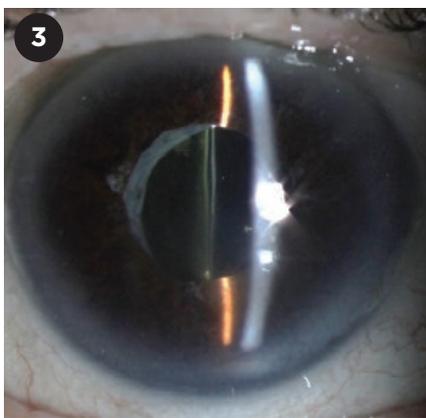
to the newly released cortical material, prednisolone acetate 1% was initiated every 2 hours.

Two weeks later, Mrs. Brown returned with subjective clear vision without haziness, uncorrected visual acuity of 20/25 in the left eye and resolution of the milky suspension on exam (Fig. 3). The topical steroid was tapered off.

### Conclusion

CDS is a reversible complication of phacoemulsification with IOL implantation. Although it usually presents in the early postoperative period from retained viscoelastic material, it may—albeit rarely—present in a delayed fashion, as in our case, in which retained cortical material resulted in the formation of sequestered turbid material. The rarity of late-onset CDS may pose a diagnostic challenge for clinicians, but the availability of tools such as HR-OCT can facilitate the proper identification of this entity.

\* Patient name is fictitious.



**IMAGING AFTER TREATMENT.** (3) This slit-lamp photograph, taken after Nd:YAG laser posterior capsulotomy, shows resolution of the sequestered material posterior to the IOL. (4) HR-OCT imaging disclosed a well-centered IOL, which was a normal distance from the iris (vertical arrow), and a nondistended open capsular bag. The arrowhead indicates the edge of the capsular bag.

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