An 85-year-old active and healthy Asian woman presents with marked reduction in vision in the right eye over the past 6 months. According to her history, she has had no injuries or previous surgery in the right eye; she had successful cataract surgery in the left eye 20 years earlier.

Examination shows the following: corrected distance visual acuity, hand movements at 3 feet in the right eye and 20/25 (spectacle corrected) in the left eye; intraocular pressure (IOP), 17 mm Hg and 16 mm Hg, respectively; and pachymetry, 532 μm and 540 μm, respectively.

As can be seen in the clinical photograph (Figure 1), a Morgagnian cataract is present in the right eye. There is accurate 2-point light discrimination and a seemingly full visual field. B-scan ultrasonography of the right eye is unremarkable. The anterior chamber is fully formed and quiet, and the corneal endothelium appears normal for the patient’s age.

What is your approach in this situation?

The classic Morgagnian cataract has a liquefied center and a smaller, but very hard nucleus. The primary challenge is the capsulorhexis and the emulsification of this mobile “ball bearing.”

The traditional approach involves staining the anterior capsule with trypan blue followed by the injection of a highly retentive, cohesive ophthalmic viscosurgical device (OVD). A small central or paracentral puncture is made with a bent 27-gauge needle, at which time the typical smokestack escape of liquefied cortex may be observed. If this is prevented by the OVD, a 27-gauge cannula can be inserted in the bag and liquefied cortex can be aspirated and replaced with a dispersive OVD, which elevates and stabilizes the nucleus. Although I usually prefer to make the capsulorhexis with a bent 22-gauge needle, a forceps is easier when there is no underlying cortical support. It is best to err on a smaller capsulorhexis, which can be enlarged if necessary.

The hard nucleus is emulsified with torsional phacoemulsification and slow-motion parameters, stabilizing and separating the nucleus with a longer chopper with a tapered inner edge and a protective terminal bulb. Additional OVD can be injected behind and in front of the nucleus as needed. There is usually minimal cortex, although if present, it is compacted into the equator and should be carefully aspirated. The remainder of the case is routine unless weaker zonules require a capsular tension ring (CTR).

Although I do not yet have experience using a femtosecond laser for capsulorhexis, it would seem like an excellent indication. If the unsupported capsulorhexis and emulsification of the hard, mobile nucleus are well managed, these rare but challenging cataracts can leave the surgeon with a great feeling of accomplishment.

Robert H. Osher, MD
Cincinnati, Ohio, USA

My safest approach for restoring vision to this patient with a Morgagnian cataract is sutureless extracapsular cataract surgery. Such cases will usually be very straightforward and quick with the small-incision cataract surgery (SICS) technique. In my hands, these cases are more prone to complications with phacoemulsification.

Eyes with hypermature cataract often have fragile capsular bags, weakened zonules, and high pressure in the capsular bag from liquefied cortex. The nucleus is usually very hard, smooth, and difficult to engage with a phacoemulsification tip.