

Elschnig Pearls

BY WILLIAM J. FISHKIND, MD; ASIM PIRACHA, MD; R. BRUCE WALLACE III, MD;
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CASE PRESENTATION

A 72 year-old female underwent extracapsular cataract extraction (ECCE) with the placement of a PCIOL in her left eye approximately 15 years ago. She enjoyed good spectacle-corrected vision until approximately 1 year ago when her visual function began to decline gradually. An examination in a darkened room shows a BCVA of 20/50 with a manifest refraction of $-1.25 +2.00 \times 180$. Slit-lamp findings include a prominent frond of Elschnig pearls emanating from under the iris' margin and obscuring the visual axis (Figure 1). The fundus-related findings are unremarkable.



Figure 1. Shown is the anterior segment of an eye that underwent ECCE 15 years ago.

What are your options for managing this patient?

WILLIAM J. FISHKIND, MD

The formation of Elschnig pearls on the posterior capsule before and after an Nd:YAG posterior capsulotomy is a regular occurrence. In a study by Kurosaka et al,¹ they appeared by 32 months postoperatively in 69% of 201 eyes. Elschnig pearls resolve spontaneously due to several possible causes, including (1) the pearls' fall into the vitreous through the capsulotomy, (2) phagocytosis of the pearls by macrophages, and (3) cellular death by apoptosis.²

If left alone, the pearls in this case would likely disappear. They are interfering with this patient's vision, however, so treatment is necessary.

I would simply perform an Nd:YAG laser lysis of the pearls with the pupil undilated. I would treat only the visual axis to minimize the volume of pearls that might fall into the chamber angle. I would amputate a small volume and then, with low-powered Nd:YAG pulses, attempt to nudge the free-floating pearls through the pupil to drop behind the iris. If the pearls would not pass behind the iris, I would break the pieces into the smallest fragments possible to aid their removal by phagocytosis. I would then repeat the process until the visual axis was clear.

Postoperatively, I would use steroidal and nonsteroidal

anti-inflammatory drops and observe the patient for uveitis and a rise in IOP.

ASIM PIRACHA, MD

The initial postoperative refraction, the type and position of the PCIOL, and the status of the posterior capsule or previous Nd:YAG treatment are not known. Elschnig pearls are present at the superior margin of the iris, and there appears to be fibrosis of the iris stroma with associated irregularities of the pupil. The findings of the anterior chamber and dilated examination are not given.

The patient's history of gradually declining vision leads me to believe that hers is a progressive condition. I therefore would not expect the Elschnig pearls to regress spontaneously. Nor would I expect them to resolve with an Nd:YAG laser treatment. Also, simply removing the pearls from the visual axis would not correct her irregular pupil.

If only Elschnig pearls were present, I would consider removing them with I/A or bimanual anterior vitrectomy depending on the posterior capsule's status. If a dense Soemmering's ring were also present, then I would surgically excise it by carefully freeing it from the capsular fornix. This maneuver could lead to the IOL's decentration and vitreous loss, and the surgeon would need to be prepared to fixate the PCIOL to the iris with a McCannel suture.

The patient's refractive error could be due to progressive against-the-rule astigmatism from a superior ECCE incision, or the Elschnig pearls or Soemmering's ring may be tilting the PCIOL. Topographic and dilated examinations would help to determine the cause of this patient's astigmatism.

R. BRUCE WALLACE III, MD

This slit-lamp photograph suggests a faulty material that emanates from the pupillary margin into the visual axis, a finding indicating coalesced, loose cortical material that will likely continue to expand. Although treatment with an Nd:YAG laser may be an option, there will still be a fair amount of debris left in the anterior chamber. I therefore would probably recommend a bimanual irrigation and aspiration of the material, in an effort to get out into the capsular fornix as much as possible to reduce the possibility of a recurrence. Pupillary dilation would be helpful for visibility, and it might be necessary to break any iris synechiae in order to improve visualization. I would also consider a limbal relaxing

incision at the 180° axis, with the degree of astigmatic correction to be verified preoperatively by corneal topography.

DAVID S. ROOTMAN, MD, FRCSC

If the proliferated remnants of the lens epithelium are interfering with the patient's vision, obviously, something must be done. The patient could try using a long-acting mydriatic agent such as atropine once daily or every 2 days to dilate her pupil pharmacologically so that she could see around the obstruction. If this measure did not help or if the woman wanted a long-term solution, the surgeon could use the Nd:YAG laser to fracture the lenticular material, which would be absorbed by the aqueous humor. The ophthalmologist should watch for a pressure spike and treat the inflammation with topical steroids.

If those measures did not work, then I would recommend dilating the pupil. By using a bimanual technique, a 23-gauge Simcoe single-barreled needle, and an infusion line, the surgeon might be able to aspirate the softened lenticular material. If it were recalcitrant, then a vitrector might help. The surgeon should ensure the removal of any cortex remaining superiorly. It might be necessary to manipulate the iris with a Kuglin hook or even iris retractors to get a good look at the area and not have to come back again to fix the problem. ■

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 2. Caballero A, Salinas M, Marin JM. Spontaneous disappearance of Elschnig pearls after neodymium:YAG laser posterior capsulotomy. *J Cataract Refract Surg.* 1997;23:1590-1594.