Acute angle closure in a pseudophakic eye: a diagnostic challenge

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**Purpose**
To present a case of acute angle closure in a pseudophakic eye.

**Results**
A report of one case, a 64 year-old Chinese Singaporean male, came with sudden onset of right-eye pain, blurring of vision and redness accompanied by right-sided headache, nausea and vomiting. Visual acuity was hand movement on the right, and 6/9 on the left. Intraocular pressure (IOP) was 61 and 13 mmHg in right and left-eye, respectively, using Goldmann tonometry. Conjunctiva injection and corneal edema were noted. Anterior chamber on the right-eye was shallow, angles were closed. Anterior segment-OCT (AS-OCT) and ultrasound biomicroscopy (UBM) were done. Vitreous was seen in the pupillary margin. Both eyes were pseudophakic, with history of cataract surgeries done 20 years ago. A diagnosis of secondary acute angle closure was made, and patient was given mannitol and acetazolamide intravenously, eye drops (timolol, pilocarpine 1%, brimonidine, and prednisolone). The acute angle closure attack was broken 48 hours later, IOP went down to 5 mmHg. One week after, he underwent an Ahmed tube implantation with vitrectomy. Two-weeks post-operatively, IOP was 10 mmHg, with 6/7.5 visual acuity on the right eye.

**Methods**
This is a case report from The Eye Surgery Centre, National University Hospital.

**Conclusions**
The unusual presentation of this case poses a challenge in finding the underlying mechanism of acute angle closure. Potential causes entertained were pupil block, angle crowding, rotation of ciliary body with uveal effusion, and aqueous misdirection, with the latter as the most plausible mechanism for this case. The misdirected aqueous trapped behind the vitreous had caused the vitreous to move in front of the intraocular lens pushing the iris forward leading to the block. This scenario showed that aqueous misdirection may still occur several years after surgery.