Spontaneous unilateral hyphema from a strand of persistent pupillary membrane

Vineet Agarwal, Arijit Mitra, Sumit Choudhury, Suchanda Sar, Debarpita Chaudhury

Key words: Persistent pupillary membrane, spontaneous hyphema, tunica vasculosa lentis

A 48-year-old female presented to us with sudden onset dimness of vision in her right eye (RE). There was no history of trauma. Her best corrected visual acuity (BCVA) was 6/9 (partial) (Snellen’s) in her RE and 6/6 in her left eye (LE). Her RE showed strands of PPM crossing the pupil. There was active bleeding seen from a point source on one of the strands of PPM resulting in hyphema formation, 3 mm in height [Fig. 1]. The patient was seen and pupillary dilatation had been done at a local clinic and thus her RE was pharmacologically dilated at presentation. Both eyes had nuclear sclerosis grade II cataract and the intraocular pressures (IOPs) were 16 mmHg and 14 mmHg in the RE and LE, respectively. Gonioscopy showed wide open angles without any new vessels at the angle in both eyes. Fundus examination of both eyes was normal.

Her systemic examination was normal with normal blood pressure and random blood sugar levels. Gentle compression of the right eye with a pinkie-ball for 3 min was done and the bleeding stopped completely. She was prescribed topical steroids (Loteprednol etabonate 0.5% w/v) four times daily and a mydriatic/cycloplegic eye drop twice daily in the RE for 7 days. She was advised routine blood tests: complete hemogram, fasting and post-prandial blood sugar, serum urea and creatinine, lipid profile and coagulation profile and advised follow-up after 1 week with the reports. At her follow-up after 1 week her BCVA was 6/6 in both eyes and there were no signs of hyphema or active bleeding. PPM in RE was noted as fine strands crossing the pupillary axis [Fig. 2]. Her blood work-up was normal. She refused to undergo an iris angiography since it was an invasive procedure. At her next follow-up visit after 1 month she was asymptomatic with no recurrence of bleeding from the PPM.

The pupillary membrane is a transitory vascular connective tissue covering the anterior surface of the lens during embryonic development. By eight and a half months, the central arcades gets fragmented and disappear. Clinically the remnants of the pupillary membrane are often seen as white strands, in 17.6–31.9% of the cases, but persistent functional vessels are found in only 0.3% which may very rarely bleed.[1-4]

Our case presented with active bleeding from such a PPM strand.

Spontaneous hyphema in the anterior chamber is rare and can occur due to certain reasons like intraocular neoplasms, blood disorders (leukemia, hemophilia), uveitis, ruboesis iridis, fibrovascular membranes in retrolental or zonular area (retrolental fibroplasia, persistent primary vitreous, retinoschisis), juvenile xanthogranuloma, occult trauma or

Disha Eye Hospitals Pvt. Ltd., Kolkata, West Bengal, India

Correspondence to: Dr. Arijit Mitra, Disha Eye Hospitals Pvt. Ltd., 88 (63 A) Barrackpore Barasat Road, Ghoshpara, Barrackpore, Kolkata - 700 120, West Bengal, India. E-mail: jeet2712@yahoo.co.in

Received: 23-Sep-2019 Revision: 27-Oct-2019 Accepted: 23-Dec-2019 Published: 25-May-2020

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

Cite this article as: Agarwal V, Mitra A, Choudhury S, Sar S, Chaudhury D. Spontaneous unilateral hyphema from a strand of persistent pupillary membrane. Indian J Ophthalmol 2020;68:1158-9.
trauma with late effect, hydraphthalmos, vascular anomalies of the iris, histiocytosis X, post-glaucoma surgery and very rarely from PPM.\(^{[4]}\)

Literature search revealed that there are very few cases of bleeding from a strand of PPM in adults and it is extremely rare.\(^{[1-4]}\) Some case reports have documented an iris angiography which showed the anomalous vasculature or aneurysmal dilatation within the PPM strand.\(^{[2-5]}\) In most of the previously reported cases a predisposing factor, either strenuous effort immediately preceding the bleeding\(^{[1,2]}\) or systemic hypertension\(^{[3,4]}\) contributed in the causation of hyphema; however, Kotamarthi et al. reported the only case of truly spontaneous hyphema similar to our case.\(^{[5]}\)

This case illustrates that spontaneous bleeding may occur from a strand of PPM. To our knowledge, this is the first case of truly spontaneous bleeding from a strand of PPM being reported from India.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References
1. McLean DW. An unusual case of intra-ocular haemorrhage. Br J Ophthalmo 1946;30:758.
2. Laidlaw DA, Bloom PA. Spontaneous hyphaema arising from a strand of persistent pupillary membrane. Eur J Ophthalmol 1993;3:98-100.
3. Rydberg M. Haemorrhage from remnants of prepupillary membrane. Acta Ophthal 1965;43:160.
4. Brusini P, Beltrame G. Spontaneous hyphaema from persistent remnant of the pupillary membrane. A case report. Acta Ophthalmo (Copenh) 1983;61:1099-103.
5. Kotamarthi V, Sarodia O, Woodruff GH. Spontaneous hyphaema secondary to a vascularised fragment of persistent pupillary membrane. Eye (Lond) 2003;15:240-1.