IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 22, Issue 7 Ser.1 (July. 2023), PP 54-57
www.iosrjournals.org

A Rare Case Of Bilateral Persistent Pupillary Membrane With Cataract

Dr. Priyanka Dhande[1] ,Dr. Nisha Ahuja [2] ,Dr. Nilay Dhore[3] ,
Dr. Dhara Patel[4], Dr. Rashi Kochar[5]

[1]*(Cataract Department, Sankara Eye Hospital , Anand , India)*
[2]*(Cornea Department, Sankara Eye Hospital, Anand, India)*
[3]*(Cataract Department, Sankara Eye Hospital, Anand, India)*
[4]*(Cataract Department, Sankara Eye Hospital, Anand, India)*
[5]*(Cataract Department, Sankara Eye Hospital, Anand, India)*

Abstract
Persistent pupillary membrane(PPM) is aconsequence of incomplete involution and atrophy of the pupillary membrane. Most PPMsrequire no treatment because they rarely cause visual impairment. Remnants structure vary from afew nonpigmented threads to thick membrane covering the entire pupil. The aim of this case report is to show advantage of combined surgical membranectomy with phacoemulsification with intraocular lens implantation. We describe acase of apatient with bilateral PPM and cataract having significant vision loss in bright light. This patient underwent bilateral phacoemulsification surgery along with membranectomy without any complication.
We conclude that patient with significant cataract and PPM can be visually restored with combined surgical procedure and multiple interventions can be avoided

Key Words*- Persistent pupillary membrane, Phacoemulsification, Nd:YAG Laser, Membranectomy*

Date of Submission: 22-06-2023 Date of Acceptance: 02-07-2023

I. Introduction-

Persistent pupillary membrane is a condition that results from incomplete involution of the tunica vasculosa lentis.The central portion of membrane atropies by seventh gestational month and its involution get completed between the eighth and ninth month.[1]PPM covering most of the pupil are rare clinical finding. Although familial forms have been reported, most cases are sporadic in nature.[2] Topical atropine can be used to dilate the pupil may help to break PPM. Surgical and laser intervention may be required for extensive opaque membranes.[3]

II. Case report –

A 56-yearold male presented to the ophthalmology OPD with a complaint of progressive blurring of vision in the both eye since 6 months duration. The patient was apparently alright 6 month ago when he noticed diminished of vision which was painless, gradual in onset and progressive in nature. There were no documented systemic illnesses. Family history was unremarkable. This study conforms to the principles outlined in the Declaration of Helsinki and informed consent was obtained from the patient.

On examination, uncorrected visual acuity was 6/60 in the right eye and 5/60 in left eye. Refraction was +2.25 −1.00 × 100 in the right eye, giving a best-corrected visual acuity of 6/24 and +1.75 −2.50 × 180 in left eye with no improvement in visual acuity. The intraocular pressure was 16mm Hg in the right eye and 14 mm Hg in left eye. On anterior segment examination, both eyes had clear corneas, normal anterior chamber depth, and no iridolenticular synechiae. Both eyes showed a dense network of tissue, running from the iris surface and spreading over the pupils. The centrally located pupillary area showed thick, heavily pigmented membrane which was obstructing the vision (Figure 1 and 3). The right eye had nuclear sclerosis grade 2 and left eye hadgrade 3 nuclear sclerotic changes with posterior subcapsular cataract. Gonioscopy did not reveal any abnormality. Posterior segment examination in both eyes was within normal limits. The patient was diagnosed with bilateral persistent pupillary membranes (PPM) and cataract in the both eyes. We planned to excise the

membrane and simultaneous cataract surgery. We counselled the patient for left eye cataract surgery and membranectomy followed by right eye.

The surgical procedure were performed under peribulbar anesthesia. A superior clear corneal incision was made using a 2.8mm keratome. A viscoelastic material was injected into the anterior chamber and behind the iris to create a working space beneath the pupillary strands. After which the strands were excised at the collarette with an intraocular scissor. Then capsulorhexis was performed through side port followed by phacoemulsification with intraocular lens implantation was performed. Next, viscoelastic was removed completely by irrigation and aspiration, after which hydration of the superior corneal wound and side port was done with sterile balanced salt solution. The similar procedure was performed in right eye after 7 days of left eye surgery.At 6 weeks postoperatively, the patient's refraction in left eye was -0.50 −0.25 × 40with best-corrected visual acuity6/6 parts. The right eye refraction was -0.25-0.25×120 with best corrected visual acuity 6/6.

III. Discussion-

PPMs are the most commonly occurring congenital anomaly, seen in up to 95% of normal newborn babies.[4] PPM can be unilateral or bilateral and can be variable in appearance, size, configuration, and density. Most of the times, it can be seen as thin lacy strands of iris tissue running from the collarette, but a bilateral total persistent membrane is a rare occurrence and is associated with vision deprivation.

These PPMs may not affect vision unless the pupillary opening is less than 1.5 mm in size. A small opening affects visual acuity due to the decreased retinal illumination anddiffraction.[5] In our case, despite being a thick and large membrane, the patient had good vision probably due to the stenopeic effect that was induced by the tiny apertures. In one study of PPMs, 39 cases were followed up. Of these, only five were found to develop poor visual acuity. Four had unilateral deprivational amblyopia, while one case had bilateral anisometropic amblyopia.[6]

Management of PPMs depends on the extent of the membrane and consequently the size of the pupillary opening. Small PPMs can be managed conservatively with mydriatic agents. Nd:YAG laser lysis of PPMs can be done. However, a number of reports have shown the presence of blood vessels in these PPMs. Therefore, photodisruption of these membranes can lead to hyphema; the procedure also carries the risk of pigment dispersion.[7-10] In our case surgical management is valid alternative as PPM was present with cataract.We combined surgery of manual membranectomy and phacoemulsification with IOL implantation which reduced chances of repeat intraocular intervention. Minimal iris bleeding observed during the procedure which was well controlled with the use of intracameral adrenaline(1:1000000).In our opinion, combined surgery is beneficial for visual rehabilitation in such cases.

IV. Conclusion-

A bilateral persistent pupillary membrane along with cataract can be managed simultaneously in one sitting which gives early visual rehabilitation and avoids repeated interventions.

References:

[1]. Bucan K, Znaor L, Jurasin K, Bucan D, Galetovic D, Lesin M. Laser Management Of Persistent Pupillary Membrane Prior To Cataract Surgery. Acta Clin Croat 2008;47(Suppl 1):7-9.
[2]. Merin S, Crawford JS, Cardarelli J. Hyperplastic Persistent Pupillary Membrane. Am J Ophthalmol 1971;72:717-9
[3]. Lewy WJ. Congenital Iris Lesion. Br J Ophtalmol 1947;41:120-3
[4]. Tanzer DJ, McclatcheySK. Spontaneous Hyphema Secondary To A Prominent Pupillary Membrane In A Neonate. J Pediatr Ophthalmol Strabismus 1997;34:318-20.
[5]. Miller D, Johnson R. Quantification Of The Pinhole Effect. Surv Ophthalmol 1977;21:347-50
[6]. Lee SM, Yu YS. Outcome Of Hyperplastic Persistent Pupillary Membranes. J Pediatr Ophthalmol Strabismus 2004;41:163-71.
[7]. Brusini P, Beltrame G. Spontaneous Hyphaema From Persistent Remnant Of The Pupillary Membrane: A Case Report. Acta Ophthalmol (Copenh) 1983;61:1099-103.
[8]. Gupta R, Kumar S, Sonika, Sood S. Laser And Surgical Management Of Hyperplastic Persistent Pupillary Membrane. Ophthalmic Surg Lasers Imaging 2003;34:136-9.
[9]. Yang W, Mao W. Nd:YAG Laser Treatment Of Congenital Persistent Pupillary Membrane. Yan Ke Xue Bao 1991;7:120-4.
[10]. Vega LF, Sabates R. Neodymium: YAG Laser Treatment Of Persistent Pupillary Membrane. Ophthalmic Surg 1987;18:452-4.

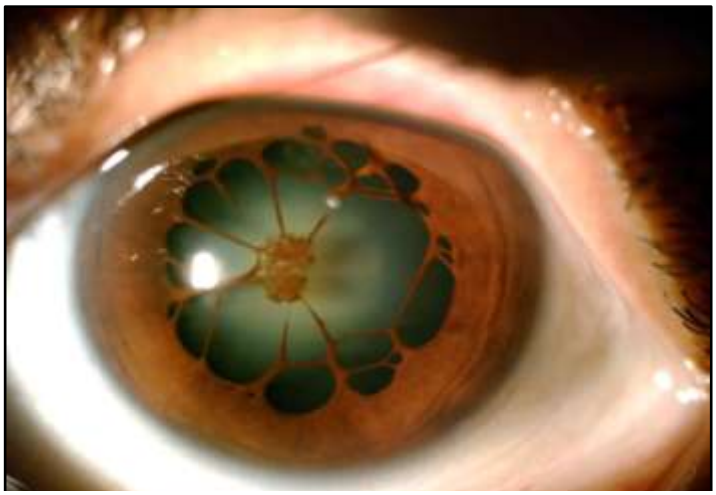

Figure 1 – Slit lamp photo of left eye Persistentpupillary membranewith cataract. Central pupillaryregion shows dense iris pigments

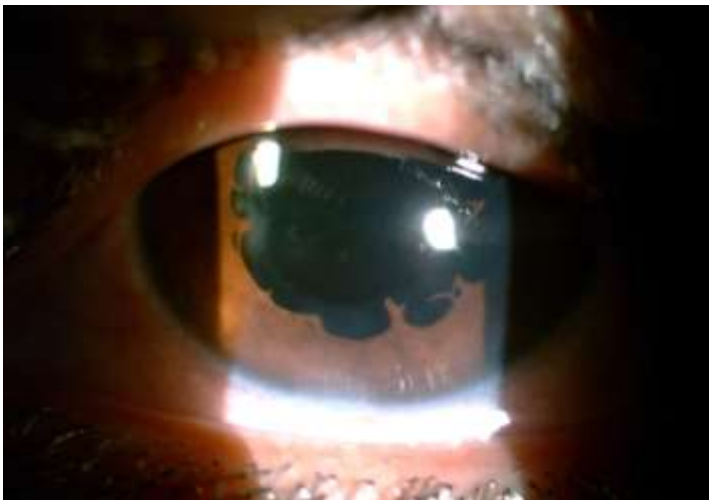

Figure 2- Slit lamp photo of left eye post operativeday one

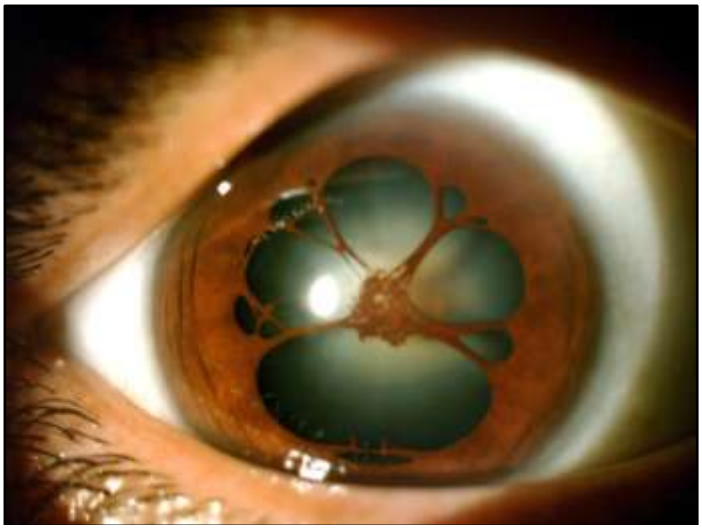

Figure 1 – Slit lamp photo of right eye Persistentpupillary membrane with cataract. Central pupillaryregion shows dense iris pigments

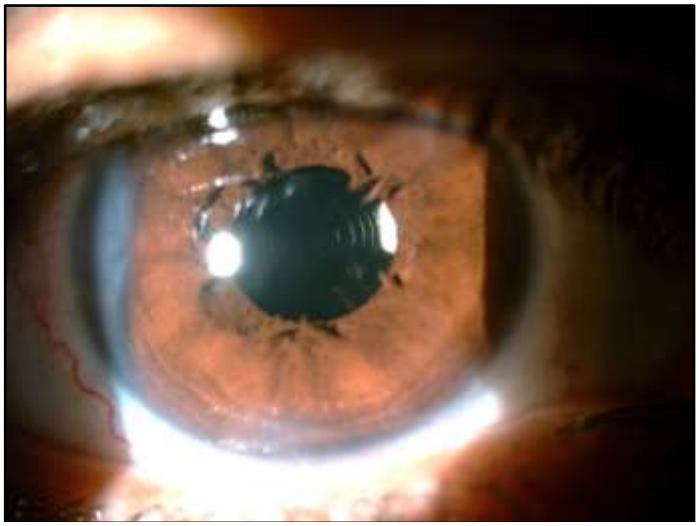

Figure 2- Slit lamp photo of right eye post operativeday one