

“MIOTIC-INDUCED RETINAL DETACHMENT”: A CASE REPORT

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SUMMARY

A rare case of pilocarpine-induced retinal detachment occurring in the only useful myopic eye of a young Chinese woman is described. Problems of treating raised intraocular pressure in high-risk cases of retinal detachment are discussed.

INTRODUCTION

“Miotic-induced” retinal detachment, as a definite clinical entity is still debatable. There are very few documented cases where retinal detachment had developed following the institution of miotic therapy for lowering the raised intraocular pressure (IOP) in a glaucomatous eye.

The present case report is of interest not only because it is a rare occurrence but also because it affected the only useful eye of this patient.

CASE REPORT

NPC, a 30-year-old Chinese female had been having intermittent visual blurring with headaches since May 1983. She consulted a specialist in November 1983, when IOP in her left eye was found to be elevated at 36mm Hg. Visual fields showed an arcuate scotoma in the Bjerrum area. She was started on Gutt Pilocarpine 2% six-hourly to the left eye. 24 hours after starting this medication she noticed sudden appearance of floaters in her left eye. Two days later a shadow appeared in her left nasal field for which she consulted her specialist again and was referred to this department with suspected retinal detachment.

Ocular examination revealed absent light perception in the right eye. The left vision was 6/60 corrected with -10.00 D.S. Fine nystagmus was noted in both eyes. The right eye was microphthalmic with a degenerative band keratopathy. Right pupil was nonreactive and bound down to the cataractous lens. Examination of the left fundus revealed macrofibrillar degeneration and posterior separation of the vitreous. A shallow detachment of the temporal retina was seen. It extended from 2.30°c to 7.30°c meridian temporarily reaching the macula which was partially lifted off. The entire peripheral retina had extensive lattice degeneration with multiple round holes along its posterior edge (Fig. 1).

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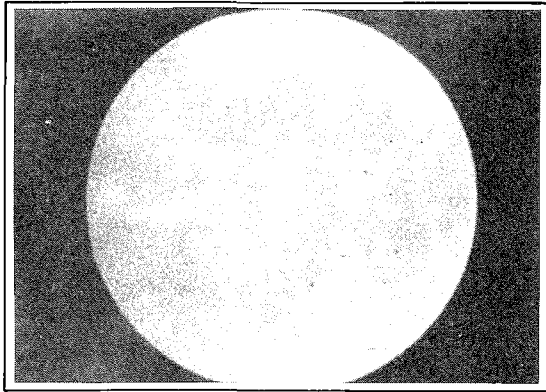


Fig. 1 Fundus picture showing detached retina with holes in degenerated areas. (Arrows).

IOP measured 14mm Hg in the right and 18mm Hg in the left eye.

Pilocarpine was stopped and IOP was controlled with 0.5% of Timolol instilled twice daily. The detached retina was successfully repaired by cryopexy and scleral buckling (Fig. 2). Visual acuity after six months follow-up has improved to 6/18 N8 with - 11.00 D.S. correction. The left visual field has improved and glaucoma is adequately controlled with 0.5% Timolol eye drops.

DISCUSSION

Retinal detachment, possibly induced by Pilocarpine was first described by Gradle and

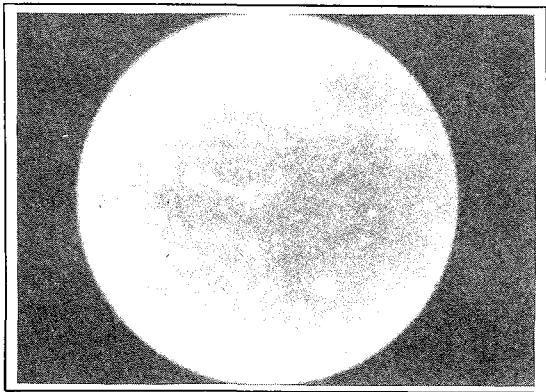


Fig. 2 Fundus picture showing reattached retina following surgery.

Syndacker.¹ As stronger miotics like DFP and Phospholine Iodide became popular, more cases of miotic-induced retinal detachments were reported.¹ Some authorities deny such an entity as "Miotic-Induced Retinal Detachment".³ They think that such an event is a pure coincidence because there is no firm evidence to support any cause and effect relationship of miotic therapy, and development of retinal detachment. However, others are convinced that such an event does occur in some cases, within a short period after starting the miotics.² High index of suspicion and careful history usually reveals the true nature of such an association. The time interval between the initiation of miotic therapy and diagnosis of these retinal detachments has varied from one day to as long as 90 days.² Some of these documented cases conceivably cause doubt and skepticism as regards to the true nature of their retinal detachments. There are only 10-reported cases where the interval of time between miotic therapy and the onset of retinal detachment has been reasonably short i.e., within one week.² One has to be very careful to consider miotics as the cause because sometimes cases with retinal detachment can present with glaucoma and are started on miotics.

The present case is interesting in that the retinal detachment occurred in the only good eye within three days of starting 2% Pilocarpine. The rapid sequence of events in this patient are quite convincing to allow this case to be placed in the category of "Miotic-Induced Retinal Detachment". True Pilocarpine-induced retinal detachment must be extremely rare. There are probably only nine reported cases where 2% Pilocarpine can reasonably be incriminated as the causative factor.² Possibility of pre-existing subclinical retinal detachment prior to starting a miotic therapy can also be considered in these patients. However the presence of near normal peripheral visual field at the time of initiating Pilocarpine therapy in the present case excludes that possibility.

Pathogenesis of miotic-induced retinal detachment is far from clear. Sudden ocular

hypotony and increased pull on the ciliary body have been considered as the possible mechanisms.¹ Miotics somehow might decrease the chorioretinal adhesion of photoreceptors to the retinal pigment epithelium so that established vitreous traction association with a pre-existing retinal break suffices to detach the retina.² Possibility of such a complication does exist in the glaucoma population. It is therefore important that prior to starting patients on long-term miotics, a thorough examination of the retina especially its periphery must always be done. It becomes obligatory in high-risk cases of retinal detachment like high myopes, aphakics and those with history of retinal detachment in the fellow eye or in the family. It is particularly significant in the local context as occurrence of retinal detachment in Malaysian population is not uncommon and the incidence of degenerative myopia appears to be comparatively high in Malaysian Chinese. "Miotic Therapy" should be added to the list of indications for prophylactic treatment of serious retinal degenerations.

Glaucoma may occasionally develop following a successful retinal detachment surgery and such patients should not be denied the use of stronger miotics if needed, as long as the retinal pathology

is well sealed. Redetachment of a successfully repaired retina in such a patient has never been reported so far. The patient reported here remains well controlled with 0.5% Timolol, a new beta-adrenergic blocking agent. Hopefully there will be many more such drugs available in the near future and ophthalmologists will have more flexibility in selecting a safe medication for those cases where miotics might be considered unsafe.

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