

Angle Closure Glaucoma with Myopia

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Reporting a case of 30 years old man who presented with pain and blurring in his right eye in an offsite ophthalmic consulting clinic of The Aga Khan university hospital. On the basis of history and clinical examination he was diagnosed as a case of primary angle closure glaucoma (PACG), although his refractive status was myopic. Narrowing of anterior chamber angle and PACG are almost always associated with hyperopia. To my knowledge this rare combination of PACG and myopia has never been reported before in Pakistan. The patient was managed as for a PACG.

Narrowing of the anterior chamber angle and angle closure glaucoma are typically associated with hyperopia. In PACG elevation of intraocular pressure (IOP) occurs as a result of obstruction of aqueous outflow by partial or complete closure of the angle by the peripheral iris. A normal optic nerve head and visual field do not preclude a diagnosis of PACG. Hyperopic eyes which are also frequently short have small corneal diameter and relatively short axial length are at increase risk of PACG^{1,2}. Myopia rarely is observed in patients with these conditions. No case series of such eyes has been reported in the literature.

CASE REPORT

I am reporting a case of myopic patient having primary angle closure glaucoma. 30 years man presented with blurring and pain in his right eye for 2 days, which was initially severe as well as causing haloes around light. The severity was decreased with some oral medication in addition to topical timolol advised by general practitioner. Patient had a history of medical management for elevated intraocular pressure in both eyes, which was clogged by him a couple of months ago. There was no significant medical history and family history was also not contributory.

Vision in right eye was 20/200 with -3.50 D sph / -2.0 D cyl at 175 degrees, not improving further and 20/20 in left eye with -4.0D sph/ -1.25 D cyl at 175 degrees. Slit lamp examination revealed circumciliary congestion, hazy cornea, mid-dilated pupil, and shallowing of anterior chamber with convex appearance of iris in the periphery of right eye. In the left eye there were no such signs except shallowing of anterior chamber with convex appearance of iris in the periphery. IOP was 43 mmHg and 16 mmHg in right and left eyes respectively. After the initial examination patient was advised to lie down supine and treated as an acute congestive glaucoma by giving Acetazolamide 500mg orally stat, Pilocarpine 2% eye drops in both eyes and Timolo 0.5% eye drops in right eye. Reassessment after an hour revealed relative decrease in corneal haziness, decrease in dilation of pupil and very sluggish reaction of pupil was evident. The IOP had dropped to 20 mmHg. Gonioscopy findings were momentous, as the angle was grade 0 in three quadrants and grade 0-I in inferior quadrant of the right eye, while gonioscopy of the left eye exposed grade 0 in superior and temporal quadrants, grade I and II in nasal and inferior quadrant respectively. YAG laser iridotomy was advised in both eyes as an initial step and until then Pilocarpine eye drops should be continued in both eyes.

DISCUSSION

When attempting to explain angle closure one should have in mind a system that facilitates the inclusion and understanding of the various mechanisms involved in iridocorneal apposition. The typical eye with primary angle closure glaucoma has a hyperopic refractive error, shorter than average axial length, larger than average lens thickness, and a smaller than average anterior chamber depth and volume^{3,4}. The identification of correct pathophysiology directs the treatment to the appropriate underlying source of angle closure. The most common cause of angle closure is pupillary block⁵. In aging; increased lens thickness, forward movement of the anterior lens surface, and decrease in anterior chamber depth and volume causes relatively pupillary block, which makes it a disease of middle aged and older individuals¹.

Review of literature has discovered almost no mention of such patients. Lowe² reported on 127 eyes of patients diagnosed with primary angle closure glaucoma, only 2 had myopia of more than -2.0 D. Marchini⁶ reported a series of refraction in patients with angle closure glaucoma, none of the 54 patients had myopia. Hagan and Lederer^{7,8} reported a myopic patient who was initially reported to have PACG, but subsequently was observed to have lens subluxation. Myopia and angle closure developed in two adults who had retinopathy of prematurity were reported by Michael⁹. Barkana⁵ have described 20 patients with a spectrum of ophthalmic conditions leading to myopia and angle closure. The primary relative pupillary block which is the cause for angle closure in the large majority of patients in the general population was identified in his 9 described patients.

Because angle closure in myopic patients is unusual and for the reason that gonioscopy in these patients may not be performed routinely the clinician must maintain a high index of suspicion. The case report of this patient illustrates that myopic refraction does not

exclude the presence of angle closure and that this should be sought by careful gonioscopy. I advocate performing careful gonioscopy on all patients undergoing initial examination.

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