



## CONCURRENCE OF ANGLE CLOSURE GLAUCOMA, RETINITIS PIGMENTOSA AND UNILATERAL HIGH MYOPIA - A CASE REPORT

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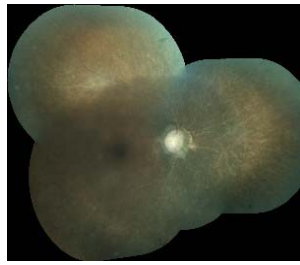
**Abstract :** Incidence of primary angle closure glaucoma in cases of retinitis pigmentosa varies from 2-12 percent. Incidence of myopia in cases of retinitis pigmentosa is above 75 percent and incidence of high myopia is 30 percent .In myopia open angle glaucoma is more common. A patient presented with features of angle closure glaucoma with retinitis pigmentosa with left eye high myopia. She presented very late with profound visual loss. She underwent Laser peripheral iridotomy for closed angles .Later Combined surgery for glaucoma and cataract was performed with intraocular lens implantation in right eye. This case is reported to emphasize the importance of early treatment of angle closure glaucoma with laser peripheral iridotomy and also the importance of comprehensive ophthalmic examination in our practice to identify multiple causes occurring in a single individual that are responsible for profound visual loss.

**Keyword :** angle closure glaucoma, retinitis pigmentosa, high myopia, Introduction Incidence of primary angle closure glaucoma in cases of retinitis pigmentosa varies from 2-12 percent. Incidence of myopia in cases of retinitis pigmentosa is above 75 percent and incidence of high myopia is 30 percent .In myopia open angle glaucoma is more common than closed angle glaucoma. Myopia associated with angle closure glaucoma occurs in certain individuals taking drugs like sulfonamides, topiramate. Simultaneous occurrence of glaucoma, high myopia , retinitis pigmentosa should be carefully evaluated before taking up for surgery since all the three conditions causes profound visual loss and visual outcome is very poor following surgical treatment for either glaucoma or cataract or both combined. The following case report shows how all the three conditions coexisted and the need for comprehensive ophthalmic examination. Case Report A 40 year old female admitted in our hospital with the chief complaints of gradual loss of vision in both the eyes for the past one year.The defective vision started in left eye and within a week her righteye also was affected. She gave positive history of 3-4 episodes of intermittent attacks of ocular pain and redness associated with defective

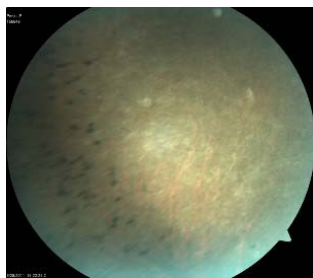
vision in both eyes . History of coloured halos were also present during the attack. There was no relevant past history of seeking medical help for the above complaints. There was also no family history of similar illness . Ocular examination revealed 1.shallow anterior chamber 2.pupils dilated and very sluggishly reacting to light 3.Lens showing cataractous changes of grade 2 nuclear sclerosis , in both the eyes. Visual acuity was recorded as defective perception of light in both eyes. Intra ocular pressure in both the eyes measured 50.6mm Hg. Gonioscopic examination revealed very shallow anterior chambers in both eyes of O-I grading according to Schaffer's [see fig 1] Similar closed angles was seen in all quadrants of both eyes. .Preliminary fundus examination in the right eye revealed pale disc with cup disc ratio of 0.4,peripapillary atrophy ,arteriolar attenuation, bony corpuscular changes in the periphery [Figure 2 ,2a] .In the left eye the disc was pale, cup disc ratio of 0.5-0.6 ,neuro retinal rim thinning ,peripapillary atrophy,, arteriolar attenuation, bony corpuscular changes in the periphery as in the right eye [fig 3, 3a].Interestingly dynamic retinoscopy revealed the following values RE -1.50/-1.50\*130' and LE -7.0/2.0\*40' suggestive of compound myopic astigmatism but with no visual improvement. Visual field charting was not possible because of poor vision. With the above findings we came to the provisional diagnosis of Primary angle closure glaucoma with bilateral Retinitis pigmentosa with left eye High myopic astigmatism.



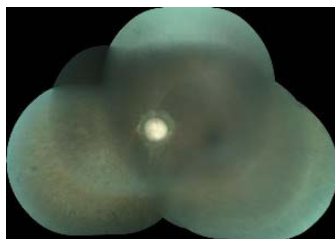
Fig 1 showing closed angle



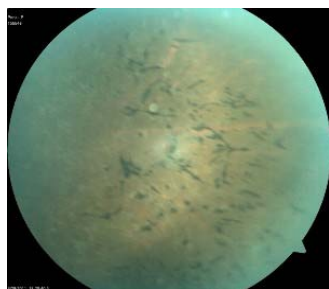
**Fig 2. Fundus picture of right eye**



**Fig 2a. Fundus periphery showing bony corpuscles**



**Fig 3. Fundus picture of left eye**



**Fig 3a. Fundus periphery showing bony corpuscles**

Treatment Nd: YAG Laser peripheral iridotomy was done for both the eyes following which the intraocular pressure reduced in right eye to 17.3 mm Hg and in left eye to 18.9 mmHg. Repeat gonioscopic examination revealed grade II angles in all quadrants of both eyes with few peripheral anterior synechiae. Simultaneously she was started on 0.5 percent Timolol maleate eye drops twice daily, 2 percent Pilocarpine eye drops twice daily and tablet Acetazolamide 250 mg twice daily. After attaining consent for poor visual prognosis she was taken up for Right eye Combined surgery with intraocular lens implantation. Postoperatively the vision in right eye

improved to hand movements. Surgery for the left eye was fixed at a later date and patient was advised to continue 0.5 percent Timolol maleate eye drops twice daily till then. She is on regular follow up with intraocular pressure under control. Discussion Primary open angle glaucoma [PACG] accounts for approximately 6 percent of all patients. It occurs in

0.6 percent or less of the general population. The prevalence of PACG increases with age and peaking between the ages of 55-70 years. PACG is common in younger individuals. Females are more commonly affected than males by a ratio of 4:1. PACG is divided into five overlapping stages 1. Angle closure suspect, 2. Intermittent [subacute] angle closure, 3. Acute angle closure, 4. Chronic angle closure, 5. Absolute angle closure. Our patient fits into the subacute angle closure going for chronic angle closure. Attacks of angle closure may be precipitated by physiological mydriasis [watching television in a dark room] or by physiological shallowing of the anterior chamber when the patient assumes a prone or semi-prone position. Emotional stress may occasionally be a precipitating factor. Incidence of PACG in Retinitis pigmentosa varies from 2-12 percent. Prevalence of PACG in Retinitis pigmentosa is less reported when compared to open angle glaucoma. Also according to Blue Mountain Eye Study glaucoma was present in 4.2 percent of eyes with low myopia and 4.4 percent eyes with moderate to high myopia compared to 1.5 percent of eyes without myopia. This study has confirmed a strong relationship between myopia and glaucoma. In Myopia open angle glaucoma is more common although myopic eye is prone for rapid glaucomatous damage due to angle closure. Such angle closure occurs in the use of certain drugs like topiramate and sulfonamides. In our case there is no history of such drug intake. Unless extensive synechial closure has occurred Laser iridotomy is the procedure of choice in these cases due to its ease, patient acceptability and low rate of complications. Long term follow up data indicates that only 30 percent of eyes with PACG successfully treated with LASER iridotomy develops peripheral anterior synechiae resulting in high IOP.

#### Conclusion:

Concurrence of PACG, Retinitis pigmentosa with unilateral high myopia is rarely reported. Also this case is reported to emphasize the importance of an early Nd:YAG Laser peripheral iridotomy in all cases of angle closure suspects and also the need for a comprehensive ophthalmic examination in cases where there could be more than one or two conditions that coexist which are responsible for the profound visual loss.

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