



Plateau iris syndrome: A case report

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Abstract

Angle closure glaucoma is a major cause of glaucoma related visual disability worldwide. Plateau iris is one of the causes of angle closure which needs to be kept in mind while dealing with a case of angle closure glaucoma. Plateau iris configuration (PIC) refers to the anatomical configuration of the iris in which iris is inserted anteriorly on the ciliary body. This alters the position of the peripheral iris in relation to the trabecular meshwork, and thus results in narrowing of the angle of the anterior chamber. Plateau iris syndrome (PIS) is defined as persistently narrow angle capable of closure in spite of a patent iridotomy. Here we report a case of 48 years old female who presented with acute angle closure in the Department of Ophthalmology, Dr.RPGMC,Kangra. She was diagnosed as a case of plateau iris syndrome and was managed surgically. Early recognition and intervention are the key components to prevent vision loss in this patient population.

Keywords: Acute angle closure; Plateau Iris Syndrome; Laser Peripheral Iridotomy

Introduction

Angle closure glaucoma is a major cause of glaucoma related visual disability worldwide. Angle closure encompasses a broad range of disorders that lead to occlusion of the trabecular meshwork by the peripheral iris. The term “primary angle closure” distinguishes the most common entity with no underlying ocular or systemic cause for the angle closure. However, there is a diverse range of causes of secondary angle closure, including systemic medications, laser or surgical eye procedures, and other ocular disorders.

The term plateau iris was first used in 1958 to describe the configuration of iris in a patient^[1]. Plateau iris configuration may result in angle closure, especially in younger adults. It is a condition in which the iris is inserted anteriorly on the ciliary body, or the ciliary body is displaced anteriorly. This alters the position of the peripheral iris in relation to the trabecular meshwork, and thus results in narrowing of the angle of the anterior chamber. Classically in PIC, the iris configuration is planar and the depth of anterior chamber is normal^[2]. PIC is a preoperative condition in which appositional angle closure is confirmed by gonioscopy. Plateau iris syndrome (PIS) is defined as persistently narrow angle capable of closure in spite of a patent iridotomy. It most commonly occurs in the early postoperative period, however it can also occur years after surgery.

Case report

A 48 years old female presented in the Department of Ophthalmology with the complaints of pain, redness and watering in her left eye for the last 2 weeks. Pain was acute in onset, severe in intensity and radiated towards the left temporal

region. She also complained of blurring of vision in her left eye. She also gave history of colored haloes around lights. She further stated that she had 5-6 previous similar episodes over a period of last 2 years.

On examination, visual acuity was 6/36 in the right eye (6/12 with +1.75D) and 5/60 in the left eye (6/36 with + 0.5D). Pupil was normal in the right and fixed dilated in the left eye. Ocular movements were normal. Lids and adnexa were normal. On Slit lamp examination, her right eye was essentially normal. Left eye had circumcorneal congestion. Cornea was hazy with pigment dispersed over the entire endothelium. Anterior chamber reaction (4+) was evident. Depth of anterior chamber was Van Herick Grade 2. Patches of iris atrophy were present extending from 1 to 3 and 6 to 9 o'clock hours. Segmental posterior synechiae were also present at 5 o'clock position. Pigment was present over anterior surface of the lens. Her Intra Ocular Pressure (IOP) was recorded to be 14mmHg in the right eye and 48mmHg in the left eye, with Goldmann applanation tonometer. Undilated fundus examination revealed Cup Disc Ratio of 0.2 in the right and 0.6 in the left eye. She was diagnosed as a case of acute angle closure glaucoma left eye and was admitted and put on medical treatment in the form of Tablet Acetazolamide 250mg 6hourly and topical Timolol 0.5% drops twice a day. On the next day her IOP was 14mHg in the right and 36mmHg in the left eye. On the second post admission day, cornea cleared and Visual fields were done (Humphrey VF: 30-2). Visual fields of the right eye were normal and those of the left eye were severely depressed, as shown in figure 1.

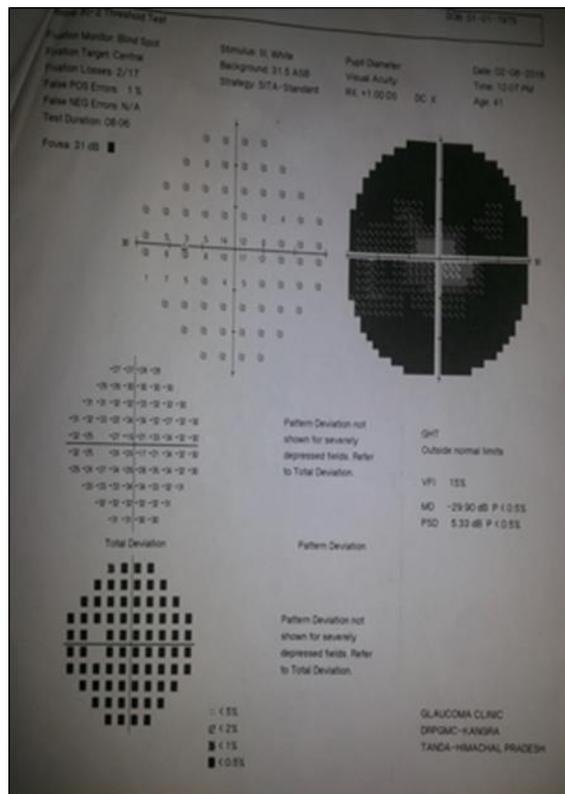


Fig 1: Visual Field Prinouts of the patient showing normal fields of the right eye and severely depressed fields of the left eye.

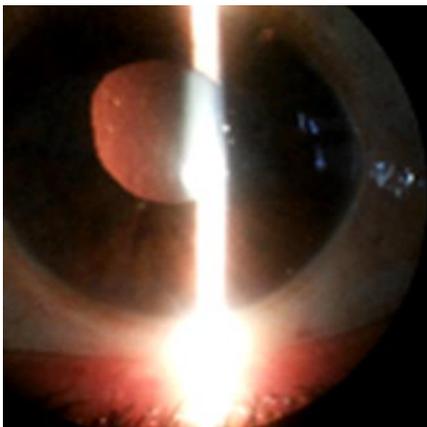


Fig 2: Showing patent laser iridotomy in the left eye on the first postoperative day

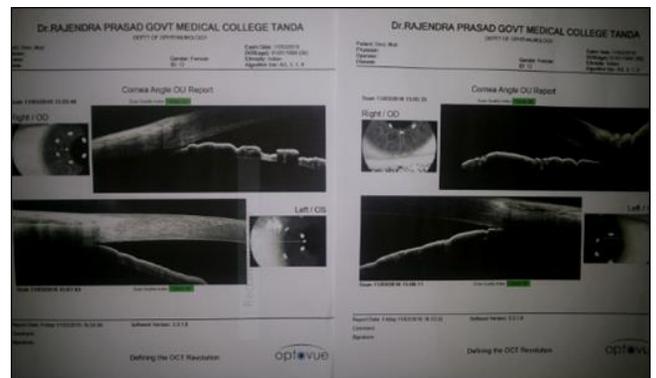


Fig 3: OCT picture of her right and the left eye showing plateau iris in the right and closed angle in the left eye.

Gonioscopy was then done using Goldmann 4 mirror gonioscopes. Both the eyes had Shaffer Grade 1 angles. Thus angle closure was confirmed and Laser Peripheral Iridotomy (LPI) was then done in the left eye. After instilling pilocarpine 2% drops. Post laser PI she was put on topical steroids also, along with timolol drops. On the first postoperative day, her IOP was 18mmHg and LPI was patent, as shown in figure 2. But to our surprise it was again 40mmHg the next day.

It was then suspected to be a case of plateau iris syndrome. OCT was done and it confirmed our diagnosis. Figure 3 shows the OCT pictures of both the eyes revealing plateau iris in the right and closed angle in the left eye. Trabeculectomy was then done and the pressure was lowered down to 10mmHg. She was then discharged but kept on regular follow up.

Discussion

Plateau iris configuration is a condition in which the iris is inserted anteriorly on the ciliary body. The iris root angulates forward peripherally and centrally in a planar fashion. The depth of the anterior chamber is normal. Plateau iris syndrome (PIS) is due to an abnormal anterior position of the ciliary body and is defined as persistently narrow angle capable of closure in spite of a patent iridotomy. Thus the terms PIC and PIS were distinguished [3]. The prevalence of PIS was found to be 54% in individuals less than 60 years old with recurrent attacks of angle closure in spite of patent peripheral iridotomy [4]. Family history of angle closure is often present in such patients, suggesting a genetic component. The inheritance is typically autosomal dominant with incomplete penetrance [5].

Thus PIS should be suspected whenever angle closure persists despite patent iridotomy, especially in a young hyperopic female in their 30-50s. A “Double hump sign” is characteristically seen on indentation gonioscopy. UBM /OCT is diagnostic. The primary treatment modality is surgical. Laser PI is the primary intervention done for PIC^[6]. But patients of PIS who experience angle closure despite patent PI need Argon Laser Peripheral Iridoplasty (ALPI). In ALPI, laser burns are placed on the surface of peripheral iris, which contracts the iris root and physically widens the chamber angle [7] If ALPI fails to control the angle closure, trabeculectomy or drainage procedures are considered. The prognosis for patients with PIC/PIS is generally good, provided the condition is recognized before vision loss occurs.

Conclusion

Plateau iris configuration/syndrome are anatomical abnormalities that should be kept in the differential diagnosis of patients with acute angle closure, as the condition has the potential to cause permanent vision loss. Timely diagnosis and intervention can prevent a person going blind due to a treatable cause.

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