CASE REPORT

Iridoschisis in a Nigerian Patient

Olusola Oluyinka Olawoye[1,2], Yewande Olubunmi Babalola[1,2]

[1]Department of Ophthalmology, University College Hospital, [2]Department of Ophthalmology, College of Medicine, University of Ibadan, Ibadan, Nigeria

ABSTRACT

We report iridoschisis in a female who presented at the age of 85 years with a ten year history of complaints of gradual and progressive deterioration in vision in both eyes (left eye worse than the right eye). The examination was notable for the presence of peripheral anterior synechiae inferiorly and few loose iris fibrils some of which were adherent to the corneal endothelium in both eyes while others floated within the aqueous humor. The anterior chamber was shallow and there was marked inferior/inferotemporal sectoral iris atrophy with splitting of the anterior layer of the iris. The pupils were slightly irregular in but reactive in both eyes and there were lenticular opacities in both eyes.

Keywords: Glaucoma, iridoschisis, iris atrophy

INTRODUCTION

Iridoschisis is a rare condition in which there is a separation of the anterior iris stroma from the posterior stroma and muscle layers. The anterior layer which contains blood vessels splits into thin strands and the free ends float freely in the anterior chamber.[1] Although iridoschisis is generally bilateral, it may appear unilateral initially. The term iridoschisis was first proposed by Loewenstein and Foster[2] in 1945 to describe a localized cleavage of the iris stroma into two layers.

Although the pathogenesis of iridoschisis is unknown, it has been associated with several forms of glaucoma such as angle closure glaucoma,[3,4] angle recession glaucoma,[5] and open angle glaucoma.[6] Iridoschisis has also been associated with congenital abnormalities such as microphthalmia,[7] congenital syphilis,[8] and antecedent ocular trauma. In some cases, iridoschisis occurs as idiopathic iris atrophy in old age.

Address for correspondence
Dr. Yewande Olubunmi Babalola, Department of Ophthalmology, University College Hospital, Ibadan, Nigeria.
E-mail: yewandeb@gmail.com

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We report a case of bilateral iridoschisis in an elderly 85-year-old woman. This is the first report of this case in a Nigerian patient.

CASE REPORT

An 85-year-old female trader presented to the eye clinic with a 10-year history of poor vision in both eyes, which was worse in the left eye. The visual loss was painless and progressive. She was neither hypertensive nor diabetic.

She did not seek any medical assistance prior to presentation because she felt her poor vision was a result of old age.

Ocular examination revealed best corrected visual acuity with refraction of 6/12 and counting fingers in the right and left eyes, respectively. Both anterior chambers were very shallow; the pupils were slightly irregular, but reactive; and she had 2+ of lenticular opacities in the right eye and a mature cataract in the left eye.

Slit lamp examination in both eyes revealed peripheral anterior synechiae inferiorly and few loose iris fibrils

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adherent to the corneal endothelium inferiorly. The anterior chamber was shallow and there were floating fibrils in the aqueous humor. The pupils were slightly irregular but reactive in both eyes. There was marked inferior/inferotemporal sectoral iris atrophy with splitting of the anterior layer of the iris [Figure 1]. Some of the loose end of the iris fibres were attached to the endothelium while others floated in the anterior chamber in both eyes [Figure 2].

Fundoscopy in the right eye showed a pink disc with a cup to disc ratio of 0.4. There was poor view of the left fundus due to the miosed pupil and lenticular opacities. Gonioscopy in the right eye showed skip peripheral anterior synechiae in the superior and inferior quadrants with convex iris configuration. Using the Schaffers'classification, the angles were Grade 2 in the superior and nasal quadrants, Grade 3 in the inferior quadrant, and Grade 1 in the temporal quadrant of the right eye. The left eye showed Grade 3 open angles in the superior quadrant, Grade 2 in the temporal quadrant, Grade 1 in the nasal quadrant, and no view of the angle structures in the inferior quadrant because of the marked anterior synechiae. The intraocular pressures were 8 mmHg in both eyes. The patient was not on any anti-glaucoma medication or any other eye medications. A diagnosis of bilateral idiopathic iridoschisis, bilateral age-related cataract (left > right), and bilateral narrow angles was made. The patient was scheduled for a left cataract surgery and bilateral peripheral laser iridotomies. She was also scheduled to have regular 6 monthly glaucoma review.

DISCUSSION

Currently, there is inconclusive evidence in literature concerning the etiology of iridoschisis. Lowenstein and Foster[2] have suggested that the disorder is an idiopathic change of old age. They also proposed that proteolytic enzymes resulting from glaucoma may worsen the disorder. We believe that our patient had idiopathic iris atrophy of old age as she did not have any other pathology that has been associated with the disease.

Iridoschisis has been reported to be associated with various ocular conditions. It has been reported that glaucoma occurs in two-thirds of patients with iridoschisis.[4] Angle closure has been reported in approximately 40% of patients.[9] A study on patients who had iridoschisis and coexistent primary angle closure glaucoma suggested that iridoschisis is an unusual manifestation of iris stromal atrophy, which results from the intermittent or acute intraocular pressure elevation.[5]

Iridoschisis may also cause angle closure. It has been postulated that atrophy of the anterior stromal fibers of the iris may result in the free fibers bowing forward and coming in contact with the corneal endothelium or the intact posterior pigment epithelium coming in contact with the anterior capsule of the lens and leading to pupillary block.[9] Our patient had peripheral anterior synechiae and bilateral angle closure, but did not have high intraocular pressure or glaucomatous optic neuropathy. This may be explained by the spaces within the iris tissue (severe iris atrophy) through which aqueous humor flows thereby preventing pupil block glaucoma.

Shima *et al*.[10] reported a case of iridoschisis with plateau iris configuration and anteriorly positioned ciliary body with flat iris in both eyes. Iridoschisis has also been linked with lens subluxation.[11] It may occur with an anteriorly subluxated lens, pushing the iris forward leading to shallowing of the anterior chamber thereby causing angle closure glaucoma.

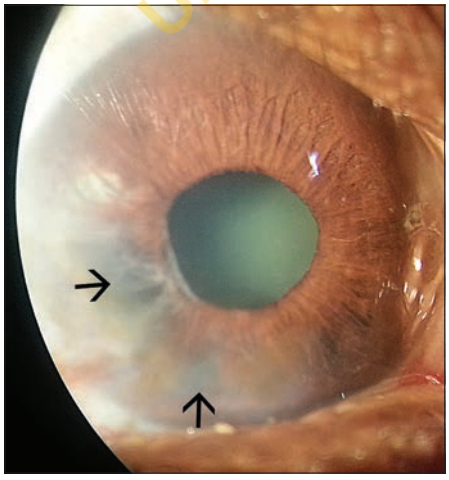

Figure 1: The arrows show marked sectoral iris atrophy in the inferior and temporal quadrants and a shallow anterior chamber

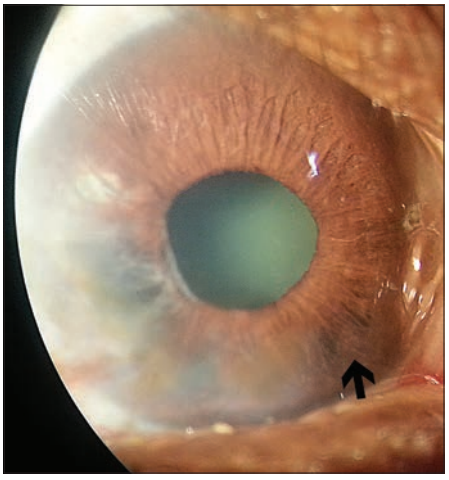

Figure 2: The arrow shows areas of iris fibrils floating in the aqueous humor at 5 o'clock

Although iridoschisis may initially appear unilateral, it is generally a bilateral disease. However, Mutoh *et al*.[12] reported a case of unilateral iridoschisis in a 67-year-old woman with posterior lens subluxation into the vitreous. Iridoschisis has also been associated with keratoconus.[13] It was postulated that as the posterior layer of the cornea and the iris stroma have the same embryogenesis, there must be an interrelated pathogenesis.

It has been advocated that patients with iridoschisis should have routine screening of family members because of a genetic link possibly transmitted autosomal dominant. Mansour[14] reported narrow anterior chamber angle and presenile cataracts in a family with iridoschisis.

To the best of our knowledge, this is the first report of iridoschisis in a Nigerian patient. The only other report of this disease in Africa was by Salmon and Murray[3] in South Africa who documented iridoschisis in twelve patients. Seven of these were found to have glaucomatous optic atrophy. Iridoschisis must be suspected in elderly patients with separation of the anterior iris layer with free floating iris strands in the aqueous humor. Early diagnosis is important to rule out associations of the disease, especially angle closure glaucoma which requires prompt diagnosis and management.

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Conflicts of interest

There are no conflicts of interest.

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