IJHS

Case Report

Bilateral angle closure glaucoma in a teenage girl - A rare presentation in Arab population - A case report

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ABSTRACT

Primary angle closure glaucoma (PACG) usually presents as unilateral and has acute onset. In Arab population, the proportion of open- and closed-angle glaucoma is similar. To the best of our knowledge, chronic PACG in very young age is rare. We share a case report of a teenage girl with advanced glaucomatous changes and, on gonioscopy, had synechia and closed angle of anterior chamber. She was treated by bilateral laser iridotomy and topical glaucoma medication. The author concludes that, even at very young age, in the absence of predisposing factors for secondary glaucoma, the patient should be investigated for PACG and managed accordingly.

Keywords: Glaucoma, field of vision, optical coherence tomography

Introduction

Glaucoma is a blinding eye disease with a prevalence of 3.5% in 40 years and older population.[1] The open-angle glaucoma is more common in sub-Saharan African population, while angle closure glaucoma is highly prevalent in the Asian population.[1,2]

In a meta-analysis, the prevalence of angle closure glaucoma in 40–49 years of age group was as low as 0.21%.[3] However, a hospital-based study in Central Saudi Arabia found that nearly half of glaucoma cases were primary angle closure glaucoma (PACG). The mean age of patients with PACG was 28.1 ± 8.2 years.[4] The chronic PACG in still younger ages is rare but reported in other parts of the world.[5,6]

To the best of our knowledge, this is, perhaps, the first teenage patient of chronic angle-closure glaucoma among Arab population who visited eye care professional as dimness of vision.

Case Report

A 20-year-old girl presented with complaints of blurring of vision without any headache, eye ache, or redness. She was not suffering from any systemic or ocular ailment. Her presented vision was 20/30 in both the eyes not improving by pinhole or refractive correction. Her intraocular pressure (IOP) was measured by applanation tonometer mounted on slit-lamp biomicroscope (Topcon, USA). It was 28 mmHg in both the eyes. On inquiry, she told that her grandfather and paternal uncle were suffering from glaucoma. She was not using any topical or systemic medication for any other ailment.

The anterior segment evaluation did not detect any significant findings in the lid, conjunctiva, or cornea. The anterior chamber was quiet but shallow, lens was normal, and pupils were reacting briskly to light. The central retina and other components of the posterior segment were evaluated using +90D lens (Volks, Germany). The optic disc had cup-disc ratio of 0.7 and 0.6 in the right and left eyes, respectively. The other part of the retina was normal. The digital image of optic disc suggested glaucomatous changes [Figure 1].

The angle of anterior chamber was evaluated using four-mirror goniolens (Volks, Germany). It revealed appositional closure of the angle of anterior chamber with synechial closure of angle in <90° in both the eyes.

The field of vision was investigated by Humphrey automated perimeter. There were marked glaucomatous changes in the field of vision [Figure 2]. The optical coherent tomography (OCT) suggested glaucomatous changes in optic disc and related changes in retinal layers [Figure 1].

After confirmation of clinical diagnosis with investigations, the patient was treated first with brinzolamide/timolol eye drops twice a day in both the eyes. She underwent bilateral laser peripheral iridotomy (VISULAS laser system, Zeiss, Germany) on the next day. The depth of the anterior chamber increased after the procedure and flow of aqueous through iridotomy was noticed. The patient was advised to continue topical glaucoma medications for 1 month. On follow-up after 1 month, the IOP was 14 and 13 mmHg in the right and left eyes, respectively.

The patient was advised to continue glaucoma medication and consult glaucoma specialist every 6 months to monitor field of vision changes, IOP, and optic disc evaluation.

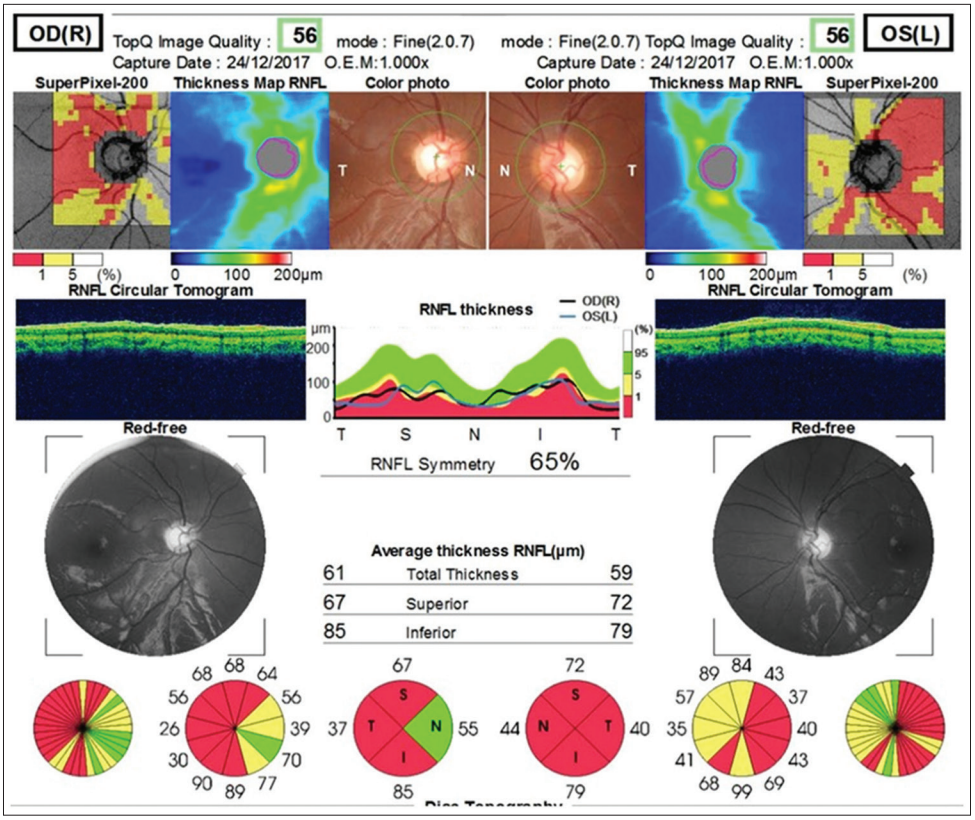

Figure 1: Digital image of optic nerve head obtained by digital fundus camera, posterior segment optical coherent tomography picture of both the eyes with diagnosis of chronic angle- closure glaucoma. The optic disc in both the eyes shows marked cupping, overpass phenomenon, notching of blood vessels, and thinning of neuroretinal rim at the upper and lower poles

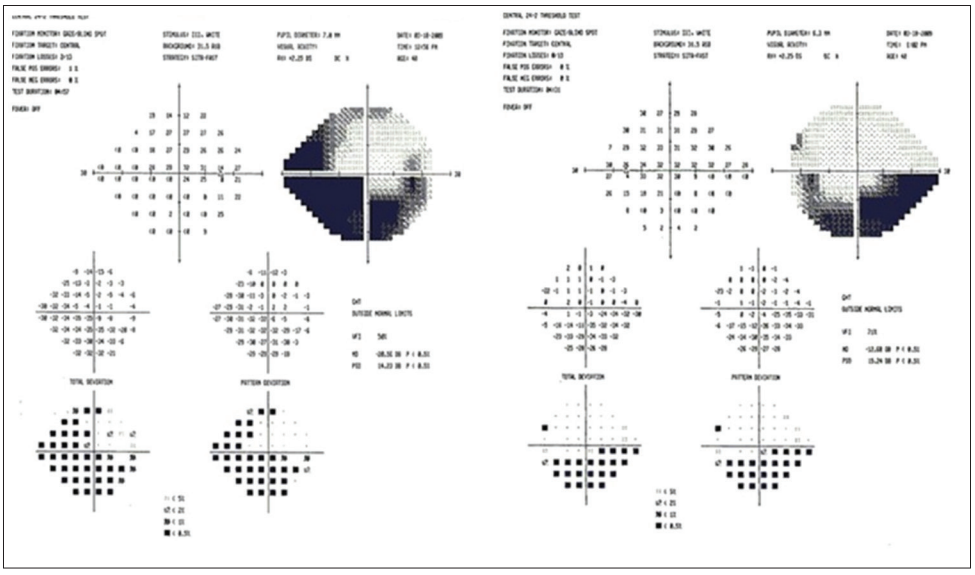

Figure 2: Field of vision testing shows glaucomatous changes in both the eyes. The changes in the left eye are more advanced compared to changes in the right eye

Discussion

A case of chronic PACG at such young age is not only a challenge to diagnose but also to manage as lifelong follow-up, and treatment is needed. In this case, asymptomatic glaucoma resulted in both structural and functional damages in both the eyes. Facilities for investigation within region enabled early diagnosis and prompt management.

Understanding the importance of risk factors helps the glaucoma specialist to suspect glaucoma with unusual presentation. In the present case, female gender and positive

family history of glaucoma were present. As suggested by McMonnies,[7] history and demographic information are very helpful and therefore should be part of comprehensive glaucoma case workup. Positive family history is a strong predictor of glaucoma.[8] The use of steroid for ocular condition and systemic ailment is known to cause secondary glaucoma in young age.[9] In our case, the patient was not using any form of steroid and inquiry about it helped us in arriving at the final diagnosis.

The detailed workup of a glaucoma case is essential not only in diagnosis and subtyping but also monitor the structural and functional changes due to glaucoma and its management.[8]

Anterior segment OCT and UBM were not available in our institute. However, during indentation gonioscopy after IOP and inflammation was controlled, we noted that there was appositional angle closure of the anterior chamber but without any peripheral anterior synechia. Moreover, laser iridotomy could reduce IOP suggestive of the absence of plateau iris.

A number of interventions are proposed to manage PACG. However, community-based bilateral laser PI was found to be cost-effective approach.[10] It is minimally invasive in early cases as extensive peripheral anterior synechia are yet not developed. Although this could be an initial treatment modality for managing chronic angle-closure glaucoma, these patients would need long-term follow-up, and if the IOP is not controlled, other surgeries would be needed after few years.[11]

It would be interesting to monitor this case to see if structural changes regress as has been documented in literature.[12]

The case of chronic angle-closure glaucoma presenting in very young age with insidious presentation was a lesson to ophthalmologist to undertake comprehensive assessment of cases with risk factors and undertake prompt management.

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