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Case Report

Bilateral Acute Depigmentation of the Iris Following Refractive Surgery - An Untold Story

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Abstract

Bilateral Acute Depigmentation of the Iris (BADI) is defined as an acute, symmetric, bilateral depigmentation of the iris stroma without transillumination associated with pigment deposition in the anterior chamber and the iridocorneal angle. We hereby report a case of a 30-year-old female who had undergone photorefractive keratectomy in both eyes 45 days back and was on a tapering dose of a combination of moxifloxacin and dexamethasone as a postoperative regimen, presented with mild pain, and redness for 2 days. Examination revealed bilateral pigment dispersion on the corneal endothelium and the anterior chamber with loss of normal iris pattern with raised intraocular pressure. She was treated with a short course of steroids and antiglaucoma medications and the condition completely resolved. By understanding this condition and providing appropriate treatment, unnecessary tests and treatments can be avoided.

Keywords: Bilateral Acute Depigmentation of Iris; Moxifloxacin

Abbreviations

AC: Anterior Chamber; BADI: Bilateral Acute Depigmentation of the Iris; BAIT: Bilateral Acute Iris Transillumination; BD: Bis in Die; IOP: Intraocular Pressure; OD: Oculus Dexter; OS: Oculus Sinister; TID: Thrice in a Day

Introduction

Bilateral acute depigmentation of iris (BADI) and bilateral acute iris transillumination (BAIT) are entities characterized by acute onset of pigment dispersion in the anterior chamber, discoloration of the iris stroma, pigment deposition in the anterior chamber angle, and elevation of intraocular pressure [1]. In BADI depigmentation comes from the iris stroma, whereas in BAIT it comes from the iris epithelium and is associated with acute iris transillumination defect. The exact aetiology of these conditions is unknown.

We report an untold story of a case of BADI following refractive surgery.

Case Report

30-year-old female presented with eye pain, and redness for 3 days. She had undergone photorefractive keratectomy in both eyes 1 and half months prior to this. She was using eye drops moxifloxacin and dexamethasone in both eyes which was stopped 1week back. During the examination, it was found that the patient had 6/6 visual acuity in both eyes. The corneal endothelium in the right eye had more iris pigments than the left eye (Figure 1&2). The anterior chamber had a deep flare of 2+. The pupil was irregular and measured 6mm. The previous records of this patient did not show any findings suggestive of pigment dispersion. The intraocular pressure was measured at 29mmHg in the right eye and 25mmHg in the left eye by goldmann applanation tonometry. During the gonioscopy examination, it was observed that the angle was wide open, and heavily pigmented trabecular meshwork was present (Figure 3). The Fundus examination showed a vertically oval 0.6 Cud disc ratio, healthy neuro retinal rim with a normal background and clear vitreous. There was no evidence of keratic precipitates, ante-

rior chamber cells, or vitreous cells. The provisional diagnosis was Bilateral acute depigmentation of the iris. She was started on eye drops Loteprednol 0.2%, Eye drops Brimonidine tartrate 0.2% and Timolol 0.5% BD in both eyes and oral tab Acetazolamide 250mg half tablet TID for 1 week.

After 1week, she was symptomatically better. Visual acuity was 6/6. On examination, pigments over the corneal endothelium had reduced with irregular pupil and decreased flare in the anterior chamber. IOP was 30 mmHg and 18 mmHg in OD and OS respectively. The remaining medications, which included Loteprednol 0.2%, brimonidine tartrate 0.2%, and timolol 0.5% BD for both eyes, were continued. For the right eye, additional 1% BD brinzolamide eye drops were administered. Pigment dispersion had decreased in both eyes with no anterior chamber flare after a two-week follow-up. The pupil exhibited irregularities and a slow response to light. IOP in OD and OS was 19 and 16 mmHg, respectively. The anti-glaucoma drugs were kept up. After three months, the antiglaucoma drugs were discontinued, and during a one-year follow-up period, the IOP in both eyes was measured at 16 mmHg.

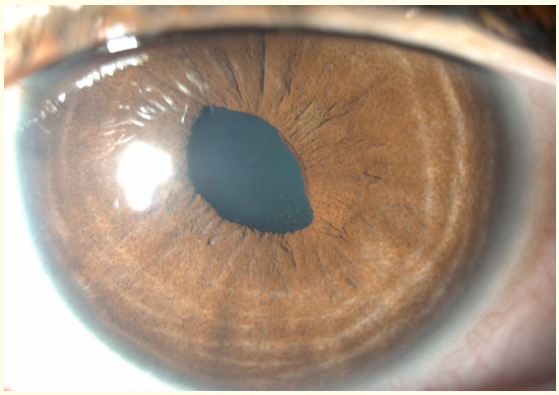

Figure 1: Diffuse illumination of Right eye showing iris pigments on anterior lens capsule.

Discussion

Bilateral acute depigmentation of the iris (BADI) and bilateral acute iris transillumination (BAIT) are recently described rare entities characterized by acute onset of pigment dispersion in the anterior chamber, depigmentation of the iris, and heavy pigment deposition in the anterior chamber angle resulting in raised intraocular pressure. In BADI depigmentation comes from the iris

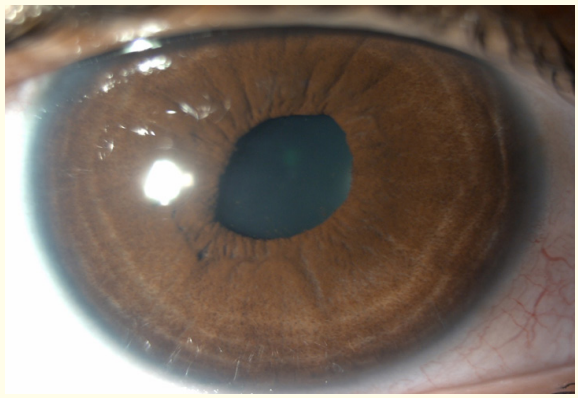

Figure 2: Diffuse illumination of Left eye showing iris pigments on anterior lens capsule.

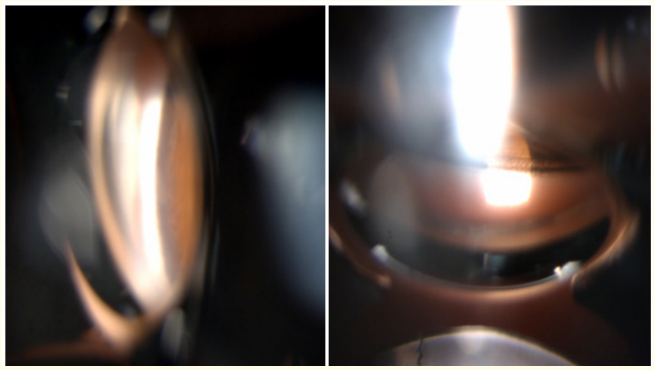

Figure 3: Gonioscopic slit lamp photograph showing densely pigmented trabecular meshwork.

stroma, whereas in BAIT it comes from the iris epithelium and is associated with acute iris transillumination defects [1]. BADI was first described in 2006 by Tugal-Tutkun and Urgancioglu in a series of 5 cases from Turkey [2]. Young females are predominantly affected by BADI. It manifests as sudden onset redness, tearing, photophobia, and ocular pain in both eyes at the same time or a few days apart. Intense photophobia is the most noticeable symptom. There is no evidence of intraocular inflammation, but they present with circulating pigment in the anterior chamber, endothelial pigment dusting or Krukenberg's spindle [1]. Sharply defined margins surround the diffuse or patchy depigmentation of the iris stroma, which appears granular in the depigmented area and usually begins at the iris root. There is widespread depigmentation from the iris root to the collarette. Gonioscopy reveals significant pigment

deposition, particularly in the inferior angle. Most of the time, the patient's visual acuity remains normal [4]. The aetiology of BADI and BAIT remains unknown, despite the fact that theyhave been identified for nearly 20 years.

A class of "probable/likely" antibiotics is suggested by the body of research on the causation of fluoroquinolone antibiotics, particularly moxifloxacin [8]. Flulike syndrome, herpes virus infection, upper respiratory tract infections systemic antibiotics such as cefazolin, ampicillin/sulbactam, amoxicillin/clavulanate, trimethoprim/ sulfamethoxazole, cefixime, and moxifloxacin, fumigation therapy have been attributed as some of the etiological factors [5-7]. Other than topical Moxifloxacin instillation, none of the aforementioned pertinent histories applied to our patient.

Pigment dispersion syndrome and iridocyclitis are the primary differential diagnoses for BADI. Diffuse episcleral injection that was more noticeable than ciliary injection, pigments but not inflammatory cells in the aqueous humor, heavy pigment deposition in the trabecular meshwork, and loss of normal corrugated iris texture were among the ocular findings that assisted us in differentiating BADI from acuteiridocyclitis.

52 patients have been reported by Tugal-Tutkun thus far, and no inflammatory cells or KPs were observed, even in eyes with extremely high flare readings. Other than severe AC pigment dispersion, none of the other characteristics of pigment dispersion syndrome were observed in our patient. Anterior segment optical coherence tomography helps us to understand the involvement of iris stroma with unaffected pigmentary epithelium and to rule out concave iris configuration [3]. The analysis of aqueous humour by polymerase chain reaction for viruses like varicella-zoster virus, cytomegalovirus, Epstein-Barr virus, or herpes simplex virus has produced negative results [9]. BADI is usually nonprogressive and self-limiting, the acute IOP rise can be managed with antiglaucoma medications and rarely requires trabeculectomy

Conclusion

One of the characteristics of BADI has been an abrupt increase in intraocular pressure accompanied by iris depigmentation and sudden onset symptomatic pigment dispersion. Numerous causes have been identified; In this case, we shared an untold tale of BADI after refractive surgery. A better understanding of the BADI presentation patterns will guarantee prompt diagnosis and prevent pointless investigations.

Conflict of Interest

NIL.

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