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Case Report

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Bilateral acute depigmentation of the iris: a case report

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ABSTRACT

Bilateral acute depigmentation of the iris (BADI) was first described in a case series from Turkiye in 2006. The condition is characterized by bilateral acute depigmentation and discoloration of the iris stroma and pigment dispersion. It mainly affects young females and characterized by acute bilateral stromal depigmentation, without other pathological ocular findings. A 21-year-old woman presented with a history of sudden onset discoloration of the eyes, originally noticed by her family. At ophthalmological examination, best corrected visual acuity was 0.1/1.0 on the Snellen scale. Amblyopia caused by a refractive error (+6 diopters) was present in the right eye. Symmetrical, diffuse iris stromal depigmentation was observed, but no signs of anterior segment uveitis or iridocyclitis or any ocular complaint. Dilated fundus examination was normal. Intraocular pressures were 16/18. The patient was diagnosed with BADI. Topical corticosteroid therapy was immediately initiated. The patient has been under follow-up for approximately six months, and her irises have remained depigmented.

Keywords: Bilateral acute depigmentation, topical steroid, young female

INTRODUCTION

Bilateral acute depigmentation of the iris (BADI) is a rare clinical condition that has recently begun appearing in the literature. The first case series was initially published in Turkiye.[1]

BADI presents with sudden onset bilateral, symmetrical pigment loss and discoloration findings in the iris stroma. The aetiology is uncertain, although viral infections such as HSV have been implicated.

The condition is rarely encountered in the clinical setting, and case reports in the literature are limited. Although BADI is self-limiting, topical steroid drops are used to halt pigment dispersion and suppress symptoms.

Pigments are particularly distributed in the anterior chamber and anterior chamber angle.[2-4] Pigment accumulated in the trabecular meshwork can cause increased intraocular pressure. Patients may present with photophobia, eye pain and red eyes. Visual acuity is generally normal, and there are no signs of inflammation, such as posterior synechiae, in the anterior chamber.[5,6]

CASE

A 21-year-old woman presented due to sudden discoloration in both eyes, which was first noticed by her relatives.

At ophthalmological examination, visual acuity was 0.1 (on the Snellen scale) in the right eye and 1.0 in the left. Amblyopia due to high-grade [+6.00 diopters (dpt)] hyperopia was present in the right eye.

Anterior segment examination revealed diffuse and symmetrical bilateral iris depigmentation. The pupils were symmetrically regular and reactive, and there was no transillumination defect. Gonioscopic examination revealed pigment accumulation in the trabecular meshwork. No signs of inflammation, such as posterior synechiae, keratic precipitates, or cells in the anterior segment, were observed. Dilated fundus examination was normal. Intraocular pressures were 16/18 (with Goldmann applanation tonometry) on the right and left, respectively. BADI was suspected, and topical corticosteroid therapy (topical 0.1% dexamethasone 4*1) was immediately initiated. The patient's medical history revealed an upper respiratory tract infection (URTI) in the previous two weeks, and that she had not received antibiotic treatment. No eye complaints were present in the family. Steroid therapy was discontinued after one month because no increase or decrease in depigmentation was observed. No pathological findings or complaints, other than iris depigmentation, were determined at six-month follow-up examination.

DISCUSSION

BADI is a rare clinical condition characterized by bilateral acute iris stromal depigmentation, and one that particularly affects young women. Visual acuity is normal, and

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although intraocular pressure may increase due to pigment accumulation in the trabecular network, this is also generally normal.[2]

Careful differential diagnosis is required, with the exclusion of diseases such as herpetic iridocyclitis with iris atrophy, pigment dispersion syndrome, pseudoexfoliation syndrome, and Fuchs iridocyclitis. Fuchs heterochromic iridocyclitis involves stellate keratic precipitates and is usually unilateral.[7] In cases of pigment dispersion and pseudoexfoliation, pigments are mostly shed from the posterior iris stroma and accumulate in the zonules, lens capsule and angle.[8] In herpetic iridocyclitis, iris atrophy is sectoral, and transillumination defect, posterior synechiae and pupillary disorders may occur.[9] Cases of bilateral acute iris transillumination (BAIT), which has also been encountered in recent years, exhibit bilateral iris transillumination. In these cases, pigment accumulation on the anterior surface of the lens, posterior synechiae and increased intraocular pressure can be observed, and blurred vision has been reported in 27% of cases. Seventy-three percent of these cases have a history of URTI and oral antibiotic use.[7,10]

Oral antibiotic use and URTI have been implicated in the aetiology of BADI.[2] A case report of two siblings from Egypt reported that both developed BADI a few months after experiencing URTI and that CMV IgG was positive in both cases. The iris depigmentation resolved completely and high intraocular pressure returned to normal following the addition of ganciclovir to the treatment.[4]

Researchers have reported that BADI may also develop due to systemic moxifloxacin use.[5] Patnaik et al.[11] reported a case of BADI developing after COVID-19 infection. The depigmentation in that case decreased with topical dexamethasone therapy. The majority of the BADI and BAIT cases reported during the COVID-19 pandemic were from Turkiye.[12-15] Some of these cases involved oral antibiotic use, while others did not. Viral infections and genetic predisposition play an important role in the aetiology of BADI.

It may therefore be concluded that genetic predisposition along with viral infections may be implicated in the aetiology of BADI. The fact that the majority of cases in the literature have been reported from Turkiye also supports this hypothesis.

In accordance with the literature, our case involved a young woman. No pathological findings other than bilateral diffuse iris stromal depigmentation were present during admission. She also had no recent history of antibiotic use. Topical corticosteroid therapy was initiated, and no abnormal findings were observed during six-month follow-up.

However, a history of mild URTI was present. We suspected that genetic and ethnic predisposition and probably a previous viral URTI had triggered BADI in the present case. The most important limitation of this report is that we had no opportunity to photograph the anterior segment, and none can therefore be provided. However, we have attempted to describe all the examination findings in detail.

CONCLUSION

The purpose of this case report is to raise awareness and contribute to the understanding of a disease that is rarely reported and whose aetiology is still unclear.

ETHICAL DECLARATIONS

Informed Consent

The patient signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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