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BILATERAL ACUTE TRANSILLUMINATION OF THE IRIS

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ABSTRACT

Aim: To elaborate on the recently described clinical entity of Bilateral Acute Iris Transillumination (BAIT) with case descriptions and review of existing literature. Methods: Clinical records of three patients with BAIT were reviewed and the data analyzed and compared with that already reported in literature. Results: All 3 patients (100%) had bilateral acute onset of symptoms which included congestion, photophobia and blurring of vision, 2 of the 3 patients (66.66%) had antecedent respiratory illness and one (33.33%) of them was treated with oral moxifloxacin for the respiratory symptoms. All patients had corneal endothelial pigment dusting, pigments in the anterior chamber, diffuse iris transillumination, atonic, distorted and mid-dilated pupils. Raised Intraocular pressure (IOP) was noted in all three patients and they were all managed with topical steroids and antiglaucoma medications. Conclusions: BAIT is an ocular condition that may present following a respiratory illness and is often misdiagnosed and managed as acute iridocyclitis with the patient undergoing a battery of investigations and treatment with a variety of drugs including systemic immunosuppression. Increased awareness of this condition will help reduce the misdiagnosis and mismanagement of this condition.

Key words: Iris, Transillumination, Atonic, Pupils, Pigments

INTRODUCTION

Bilateral Acute Iris Transillumination (BAIT) is a recently described[1] clinical entity characterized by bilateral diffuse iris transillumination, pigment dispersion, non-reactive distorted pupils, hyperpigmented trabecular meshwork with or without ocular hypertension. This is clinically different from other causes of iris transillumination and pigment dispersion including another fairly recent entity termed Bilateral Acute Depigmentation of the Iris (BADI). BAIT is very often misdiagnosed as acute iridocyclitis. We review three patients with a diagnosis of BAIT who presented to our outpatient department and describe the clinical features and management of the condition.

METHODS

Clinical records of three patients with the diagnosis of BAIT who presented to our clinic between the periods of February 2014 to February 2015 were reviewed. Data including the presenting symptoms, clinical signs, intraocular pressure (IOP), and history of antecedent illness and use of systemic antibiotics, treatment given and response to treatment was noted and a review of literature was done.

RESULTS

Case 1: A 42-year old female who was diagnosed to have bilateral iridocyclitis with secondary glaucoma at another hospital was referred for a second opinion as there was no significant improvement on treatment with topical steroids. She gave a history of fever with respiratory tract infection a week prior to the onset of ocular complaints. She had been prescribed oral Moxifloxacin for the same. On examination, her uncorrected visual acuity was 6/6 in both eyes. Anterior segment examination showed fixed dilated pupils, pigment on the posterior corneal surface, and pigments in the anterior chamber and iris transillumination defects in both eyes (Figure 1). Intraocular pressure (IOP) was 19.5 and 16 mmHg in right and left eye respectively. Fundus examination was normal in both eyes. A detailed systemic work up to rule out possible etiologies was negative. A diagnosis of probable Bilateral Acute Iris Transillumination was made and she was advised to continue topical steroids and antiglaucoma medications. She was followed up regularly. Pigments in the anterior chamber resolved completely at the seventh month since onset of ocular symptoms. The topical steroids and antiglaucoma medications were eventually stopped.

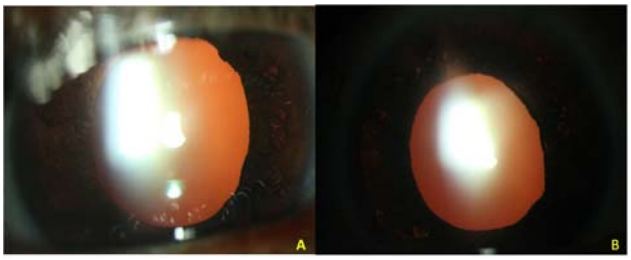

Figure 1: Severe diffuse transillumination is seen in the right (A) & left (B) eyes on retroillumination. Also note the mydriatic non-reactive pupils in both eyes.

Case 2: A 40-year old male presented with complaints of photophobia and redness of both eyes since 4 days. He gave no significant systemic history. On examination, his uncorrected visual acuity was 6/6 in both eyes. Anterior segment examination showed mid-dilated poorly reactive pupils, pigment in the anterior chamber, posterior synechiae (Figure 2), pigments on the anterior lens surface and on the corneal endothelium and diffuse iris transillumination defects. Intraocular pressure was 28 and 30 mm Hg in

the right and left eyes respectively. All laboratory investigations to rule out an underlying cause were negative. Patient was managed with topical steroids and antiglaucoma medications. He was lost to follow up after 2 weeks of treatment. In this time, however, intraocular pressure was normal and the patient's symptoms had reduced.

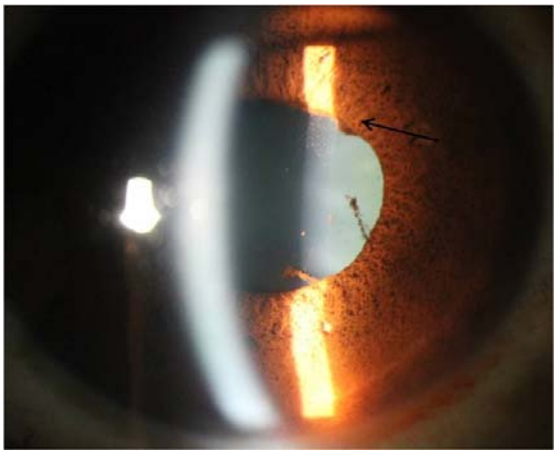

Figure 2: A slit lamp photograph showing posterior synechiae (black arrow) and pigment on anterior lens surface with a dilated pupil.

Case 3: A 49 year old female was referred for further management from another centre. She was being treated with systemic steroids and immunosuppressant along with topical medications. She was referred as there was still a persistence of "inflammation" in spite of all the treatment the patient was receiving. Medical history was significant for an antecedent viral flu-like illness the patient had 2 weeks prior to the onset of ocular symptoms. She had not taken any oral antibiotics. On examination, her uncorrected visual acuity was 6/6 in both eyes. Ocular examination showed pigments on the corneal endothelium and anterior lens surface, pigments in the anterior chamber with diffuse iris transillumination and an atonic dilated pupil (Figure 3). Intraocular pressure was normal with antiglaucoma medications. At presentation (at the other centre) intraocular pressures were found to be elevated. Fundus examination was normal in both eyes. The systemic medications were slowly tapered and stopped. She was treated with topical steroids and antiglaucoma medications. Eight months after her presentation at our hospital, the pigments from the anterior chamber had completely resolved but the atonic pupil continued to trouble the patient with problems in near vision and glare.

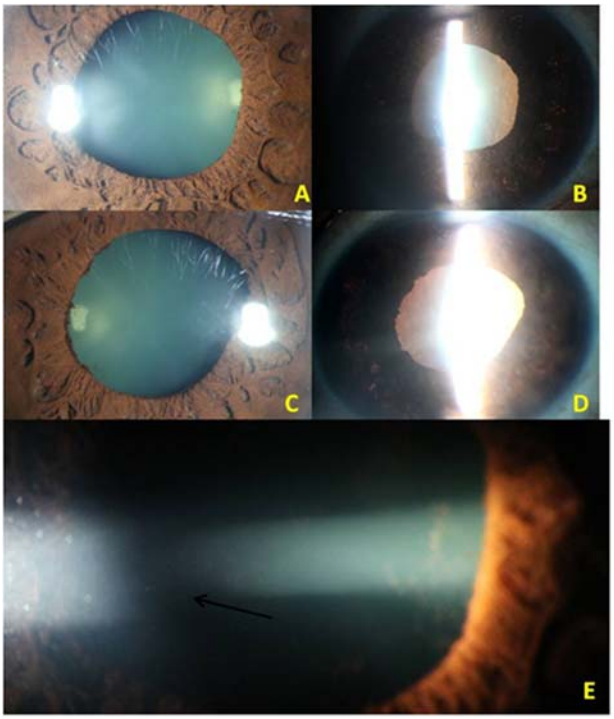

Figure 3: Slit lamp images of the right (A,B) and left (C,D) eyes of a patient (Case 3) showing mydriatic pupils (A,C) poorly responsive to light and diffuse transillumination defects on retroillumination (B,D). A high magnification slit image (E) shows pigments in the anterior chamber (arrow) and on the surface of the lens.

DISCUSSION

Bilateral Acute Iris Transillumination (BAIT) was first described in detail in 2011 by Tutkun et al.[1] They described 26 patients with a unique bilateral transillumination of the iris and pigment dispersion mostly after flu-like respiratory illnesses. All patients presented with acute onset of symptoms including redness and/or photophobia. All 3 patients (100%) encountered by us also presented acutely with redness and photophobia. The characteristic clinical features that set BAIT apart from other causes of iris atrophy and pigment dispersion include bilateral extensive transillumination of the iris, pigment dispersion in the anterior chamber and a dilated atonic pupil. In spite of the absence of anterior chamber cells and inflammatory keratic precipitates, the condition may be misdiagnosed as acute bilateral iridocyclitis[2] owing to the clinical presentation. Two of our patients were misdiagnosed as acute iridocyclitis and one of them had even been started on systemic steroids/ immunosuppression as there was no significant response to topical therapy. Ocular symptoms respond well to topical steroid therapy. The signs, especially the pigment dispersion lasts for months after the initial presentation. It is this persistence of pigments in the anterior chamber that is often misinterpreted as a non-response to treatment with topical steroids. Two of our three patients had persistent pigments in the anterior chamber for at least seven months after the onset of ocular symptoms. The pupil also remains mid-dilated owing to irreversible sphincter paralysis and may cause difficulty in night and near vision in some patients. A rise in IOP often at the time of presentation itself is a common complication. All of our patients had an increased IOP and were treated with topical antiglaucoma medications. Bilateral Acute Depigmentation of the Iris (BADI), another fairly recently described entity[3] has several features in common with BAIT including an acute onset with redness and photophobia, antecedent flu like illness, and pigment dispersion in the anterior chamber. BADI, however, has a more benign course and the pupil is typically not involved in BADI. The pigment discharge in BADI is from the iris stroma unlike in BAIT where it is from the iris pigment epithelium. This results in a diffuse depigmentation of the iris stroma with changes in iris stroma texture and color without any transillumination in BADI.[3,4] There is a possibility that BAIT may be a more severe form of BADI especially since both conditions seem to have a probable common etiology namely an antecedent flu-like upper respiratory infection.[1] Various publications have propounded different etiologies for BAIT including a preceding upper respiratory tract infection (often viral)[1], the systemic use of moxifloxacin[5,6] and clarithromycin[7], and ocular toxicity following fumigation[8]. Two of our three patients had an antecedent upper respiratory tract infection but only one of them had used oral antibiotic (Moxifloxacin). The disease did not seem to have any inciting factor in the third patient. Tutkun et al[1] concluded that the relationship between systemic antibiotic and BAIT is probably coincidental since there is no such adverse effect noted with the use of topical and even intracameral moxifloxacin. BAIT is significantly different from other causes of pigment dispersion and/or iris atrophy including pigment dispersion syndrome (PDS), herpetic iridocyclitis, Fuchs' Uveitis Syndrome (FUS) and Pseudoexfoliation syndrome. PDS typically is asymptomatic, with Krukenberg's spindle in the cornea, posterior bowing of the iris,

midperipheral spoke like transillumination defects, normal pupillary reaction and a pigmentary glaucoma that develops over years.[9] Herpetic iridocyclitis is often unilateral with inflammatory keratic precipitates and cells and sectoral iris atrophy. Diffuse iris atrophy with or without heterochromia and stellate keratic precipitates are the characteristic features of FUS.[10] Pseudoexfoliation syndrome may show peripupillary transillumination and chronic rise in IOP. All reports this far conclude that the ocular symptoms of BAIT respond well to topical corticosteroids.[1,2,5,6] This was also the case in all 3 of our patients. Pigments in the anterior chamber do not disappear with topical steroid therapy and persist for many months. Management of the raised IOP is with antiglaucoma medications. Most cases respond to topical antiglaucoma therapy although there have been a few reports of refractory glaucoma that has required trabeculectomy for control of IOP.[1] BAIT is newer addition to the existing list of ocular conditions that present with acute onset of redness and/or photophobia and extensively involves the iris. It is important to be aware of the characteristic features of this condition as this would allow prompt diagnosis and management especially of the early acute rise in IOP. Awareness would also prevent the unnecessary use of systemic therapy and the patient may be spared from undergoing a whole spate of unnecessary investigations.

DISCLOSURE

Financial Disclosure: The authors have no financial affiliations to declare.

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