

Bilateral acute depigmentation of the iris in a child following exposure to insecticide spray

Swati Singh, Shilpi Diwan¹, Mahipal Singh Sachdev²

Access this article online	
Quick Response Code:	Website: www.ijo.in
	DOI: 10.4103/ijo.IJO_1676_19

Anterior Segment, Cataract and Glaucoma Services, ¹Anterior Segment, Cornea and Refractive Surgery, ²Cataract, Anterior Segment, Cornea and Refractive Surgery, Centre for Sight Eye Hospital, New Delhi, India

Correspondence to: Dr. Swati Singh, Centre for Sight, B-5/24, Safdarjung Enclave, New Delhi - 110 029, India. E-mail: sng_swt@yahoo.co.in

Received: 17-Sep-2019

Revision: 12-Dec-2019

Accepted: 24-Dec-2019

Published: 25-May-2020

Bilateral acute depigmentation of the iris (BADI) is a rare disease of unknown etiology. We report a case of BADI in a 10-year-old child after accidental exposure to a herbal insecticide. Spontaneous iris repigmentation was observed during the follow-up period.

Key words: Bilateral, insecticide, iris, pigment release, transillumination

BADI was first described in 2006 by Tugal-Tutkun *et al.*^[1] It presents as sudden onset bilateral redness, pain, and photophobia with pigment release from iris stroma into the anterior chamber without iris transillumination defects. It has a predilection for middle-aged females.^[1,2] Another closely related entity is BAIT (bilateral acute iris transillumination),

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

Cite this article as: Singh S, Diwan S, Sachdev MS. Bilateral acute depigmentation of the iris in a child following exposure to insecticide spray. Indian J Ophthalmol 2020;68:1191-3.

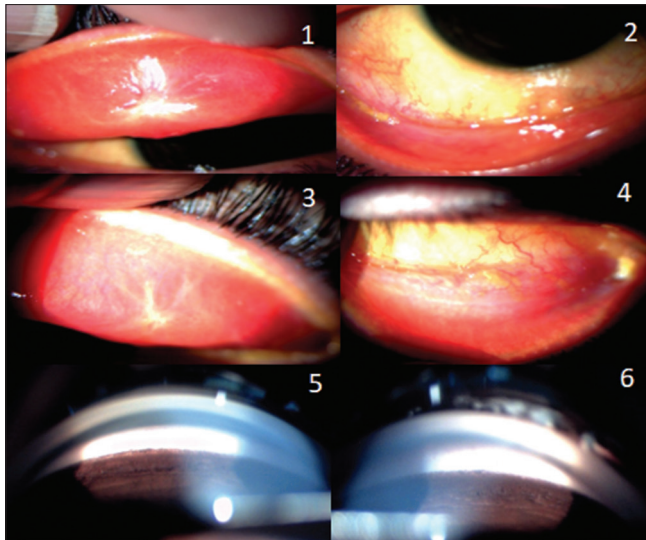


Figure 1: (1,2,3,4) Diffuse conjunctival congestion and cicatrization of upper palpebral conjunctiva in both eyes at presentation. (5,6) Inferior angles in gonioscopy showing heavy pigment deposition in both eyes. (1,2,5) Right eye; (3,4,6) left eye]

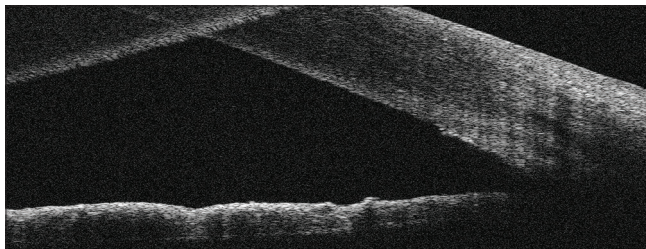


Figure 3: ASOCT picture of left eye showing open angle and flat iris contour

where pigment is released from posterior pigment epithelium of iris and shows transillumination defects and sphincter paralysis.^[3] The exact cause is not known but previous case reports suspect possible viral etiology. Oral consumption of Fluoroquinolones, especially Moxifloxacin has also been linked with BAIT like syndrome.^[4]

Case Report

We report a case of a 10-year-old boy referred by Paediatrician for non resolving redness and photophobia in both eyes. Symptoms started a day after the accidental exposure of eyes to a herbal insecticide spray used to kill bedbugs. The child also developed flu like symptoms. He was prescribed oral Acetaminophen and Cefuroxime tablets for 3 days. After a week, he was given topical Moxifloxacin- difluprednate and Homatropine. However, with no improvement in ocular symptoms he was referred to us for further management.

On presentation, the child had extreme photophobia and pain. BCVA was 20/40 in OU, and IOP was normal digitally. Slit lamp examination revealed diffuse conjunctival congestion (palpebral and bulbar) with superficial punctate keratopathy in interpalpebral area of cornea in both eyes [Fig. 1;1-4]. Anterior chamber showed pigment dispersion without inflammatory reaction and pigment deposition on inferior corneal endothelium. Pupils were round and slightly

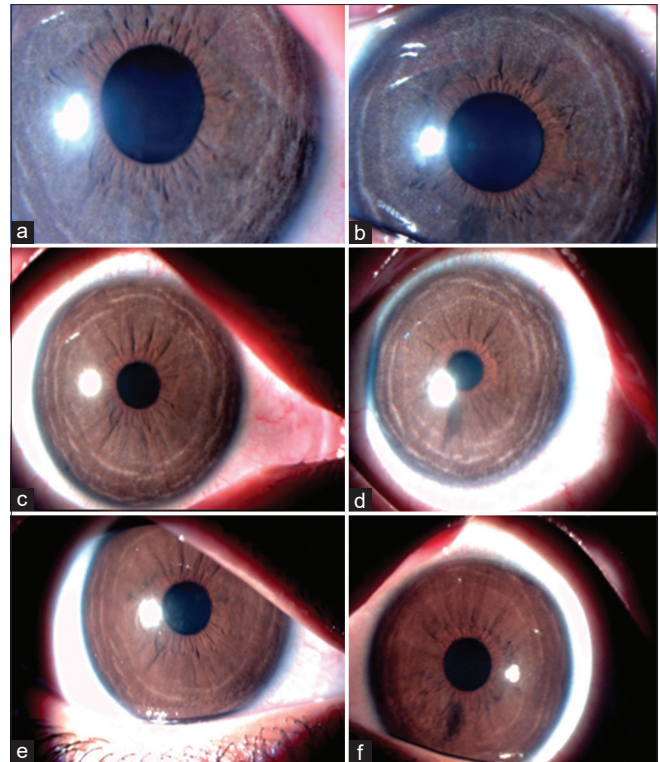


Figure 2: (a and b) eyes at presentation (approximately a month after exposure) with diffuse stromal iris depigmentation sparing peripupillary area. (c and d) Eyes at one week follow up visit. (e and f) after 3 months of exposure showing repigmentation. (a,c and e) - Right eye; (b,d and f) Left eye]

dilated (under Homatropine). Diffuse iris stromal atrophy with granular appearance was seen in mid and peripheral iris sparing the peripupillary area with no transillumination defects [Fig. 2a and b]. Systemic evaluation was within normal limits.

We advised topical Gatifloxacin and Loteprednol with copious lubricating eye drops. He was symptomatically better on follow up with IOP of OD 26 and OS 25 mm Hg [Fig. 2c and d]. Gonioscopy revealed wide open angles with dense pigment deposition and regular iris insertion [Fig. 1; 5,6]. ASOCT also confirmed non-concave iris contour [Fig. 3]. Fundus examination and specular microscopy were normal. Timolol eyedrop was added and Loteprednol tapered weekly. Gatifloxacin was discontinued soon. Investigation reports showed normal Haemogram with ESR of 28 mm. IgM levels of CMV, HSV 1 and 2, and VZV were not raised. After 5 months of exposure with steroids and antiglaucoma medication stopped for almost a month now, the iris in both eyes has repigmented and child is only on lubricants and much less symptomatic.

Discussion

Our patient presented with Bilateral acute depigmentation of iris (BADI) which is not reported after insecticide. Only one case of BAIT is reported in a 50-year-old female following fumigation therapy for suspected Ophthalmomyiasis.^[5] The spray used by our child (Herbal Khatnil K-20) has herbal oils with insecticidal property but no other details mentioned on product bottle and website. Herbal insect repellants from extracts of Eucalyptus, Cedar, Neem, Geranium, clove, Ocimum, etc., are available in

market.^[6] These are considered safe but specific human ocular toxicity in case of exposure is not established. Flu like symptoms in child may suggest viral illness. A past history of URTI was found in 35.8% in the largest case series.^[2] Malaise and rhinorrhea can also be a manifestation of insecticide poisoning. Kawali *et al.* in their retrospective series have reported cases of BADI and BAIT with the history of topical fluoroquinolone use.^[7] In our case, it is unlikely as the child was already symptomatic for a week before topical antibiotic was administered.

Differential diagnoses of BADI are pigment dispersion syndrome (PDS), acute anterior uveitis, Fuch's heterochromic iridocyclitis, viral iridocyclitis, trauma, etc.^[2] Each of these diseases has its own pathognomonic signs and symptoms. Of these, PDS appears most likely differential diagnosis. It has been reported in children.^[8] Patients are asymptomatic with mid peripheral iris transillumination defects and concave iris contour, which is in contrast to our patient. BADI has a self-limiting course with repigmentation observed in few long-term follow-ups.^[2] In this case, we witnessed repigmentation after three months of presentation [Fig. 2e and f].

Conclusion

This is the first case report of BADI in a child after insecticide exposure. This report will add valuable information to the still obscure etiology of this rare disorder. Role of correct and timely diagnosis is important to avoid unnecessary use of steroids. History of illness, severity of symptoms, and thorough clinical examination are useful tools for confirming the diagnosis of BADI.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other

clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Tugal-Tutkun I, Urgancioglu M. Bilateral acute depigmentation of the iris. *Graefes Arch Clin Exp Ophthalmol* 2006;244:742-6.
2. Tugal-Tutkun I, Araz B, Taskapili B, Akova YA, Yalniz-Akkaya Z, Berker N, *et al.* Bilateral acute depigmentation of the iris: Report of 26 new cases and four year follow-up of two patients. *Ophthalmology* 2009;116:1552-7.
3. Tugal-Tutkun I, Onal S, Garip A, Taskapili M, Kazokoglu H, Kadayifcilar S, *et al.* Bilateral acute iris transillumination. *Arch Ophthalmol* 2011;129:1312-9.
4. Knappe RM, Sayyad FE, Davis JL. Moxifloxacin and bilateral acute iris transillumination. *J Ophthalmic Inflamm Infect* 2013;3:10.
5. Gonul S, Bozkurt B, Okudan S, Tugal-Tutkun I. Bilateral acute iris transillumination following a fumigation therapy: A village based traditional method for the treatment of ophthalmomyiasis. *Cutan Ocul Toxicol* 2015;34:80-3.
6. Nerio LS, Olivero-Verbel J, Stashenko E. Repellent activity of essential oils: A review. *Bioresour Technol* 2010;101:372-8.
7. Kawali A, Mahendradas P, Shetty R. Acute depigmentation of the iris: A retrospective analysis of 22 cases. *Can J Ophthalmol* 2019;54:33-9.
8. Dorairaj SK, Robin A, Shihadeh W, Greenberg S, Liebmann JM, Ritch R. Phenotypic variability of pigment dispersion syndrome in children. *Arch Ophthalmol* 2017;125:136-8.