

Diffuse Unilateral Subacute Neuroretinitis Associated with Cutaneous Larva Migrans

Sood S^{1*}, Pathengay A² and Bawdekar AC²

¹Eye surgeon, M.D.S.D. Rotary Eye Hospital, Ruaru, Kullu, Himachal Pradesh, India

²Vitreo-Retina & Uveitis Service, L.V.P.E.I., Vishakhapatnam

*Corresponding author: Sood S, Eye surgeon, M.D.S.D. Rotary Eye Hospital, Ruaru, Kullu, Himachal Pradesh, India, Tel: 9888265249; E-mail: shilpa.sud@gmail.com

Received date: August 12, 2017; Accepted date: September 28, 2017; Published date: October 13, 2017

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Abstract

A seven year old girl presented with history of diminished vision in her left eye. The detailed examination of the right eye was unremarkable. The anterior segment of the involved eye was unremarkable with the supero-temporal retina showing outer retinal yellow-white lesions associated with pigmentary changes. The child had itchy scaly lesions over the right sole. A diagnosis of diffuse unilateral subacute neuro-retinitis with cutaneous larva migrans was made. The retinal lesions were subjected to laser photo coagulation and systemic single dose of ivermectin was administered. There was no recurrence of the retinal lesions and the foot lesions healed. The present case highlights the importance of examination of the extremities and the role of single dose of ivermectin in the management of DUSN with cutaneous larva migrans.

Keywords: DUSN; Serpigenous eruption; Cutaneous larva migrans; Worm; Photocoagulation; Ivermectin

Introduction

A 7 year old girl presented in eye out patient department with history of painless progressive diminution of vision in left eye since 6 months.

On examination, her best corrected visual acuity was 20/20 in the right eye and counting fingers at 1 m in the left eye. Grade III relative afferent pupillary defect was noted in the left eye. Rest of the anterior segment examination was unremarkable.

On posterior segment examination (Figure 1), the media was clear with no vitritis. As seen in fundus photograph, temporal optic disc palor was present. There was arteriolar narrowing along with pigmentary changes, more so in the paracentral area. Multiple outer retinal yellow white lesions were present in the superiotemporal quadrant with minimal perivascular exudation. A differential diagnosis of Diffuse Unilateral Subacute Neuro-retinitis (DUSN) was considered.

On further enquiry, patient's father gave history of itchy eruptions in right foot of the child. There was history of playing barefoot on sandy beaches. On examination, serpigenous eruption on the planter aspect of right foot was noticed which was suggestive of the entry site for the larva (Figure 2).

The diagnosis of DUSN with cutaneous larva migrans was made. On Optical Coherence Tomography (OCT) through the fovea, there was blunting of the foveal contour with diffuse retinal thinning. Internal segment-Outer segment junction was intact (Figure 3a).

In Electroretinogram (ERG) of affected eye, rod response was nearly normal but the cone response was extinguished. In combined maximal response, there was negative ERG signifying inner retinal dysfunction (Figure 3b).

Patient's fundus was extensively searched for worm on slit lamp with contact lens examination and in fundus photographs. When no worm could be localized, the area on and around the active lesion was lasered (Figure 4).

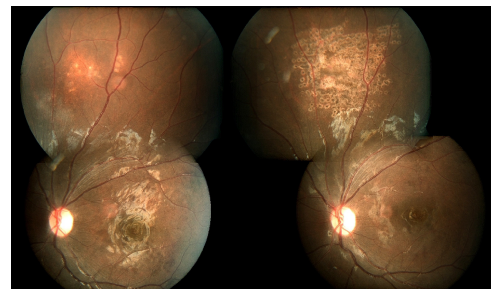


Figure 1: Left fundus photograph showing multiple outer retinal yellow white lesions in superiotemporal quadrant (arrow).

Further, the patient was given 3 mg ivermectin stat. At 2 weeks follow up, patient's vision in left eye was 20/400 and there were no fresh lesions in the fundus. Partial optic atrophy was noted. On subsequent follow ups, vision remained stable and the skin lesions also healed.

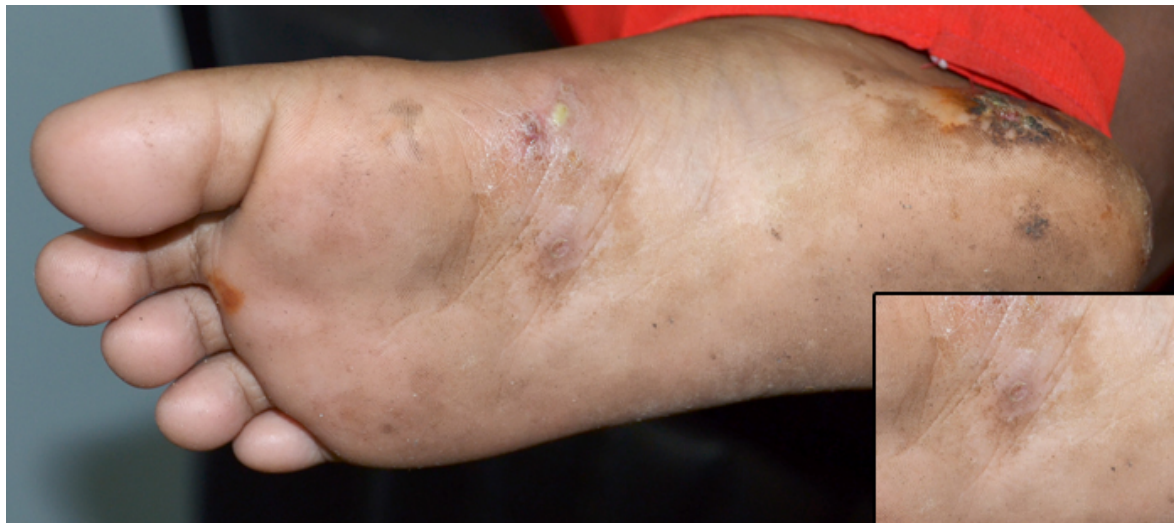
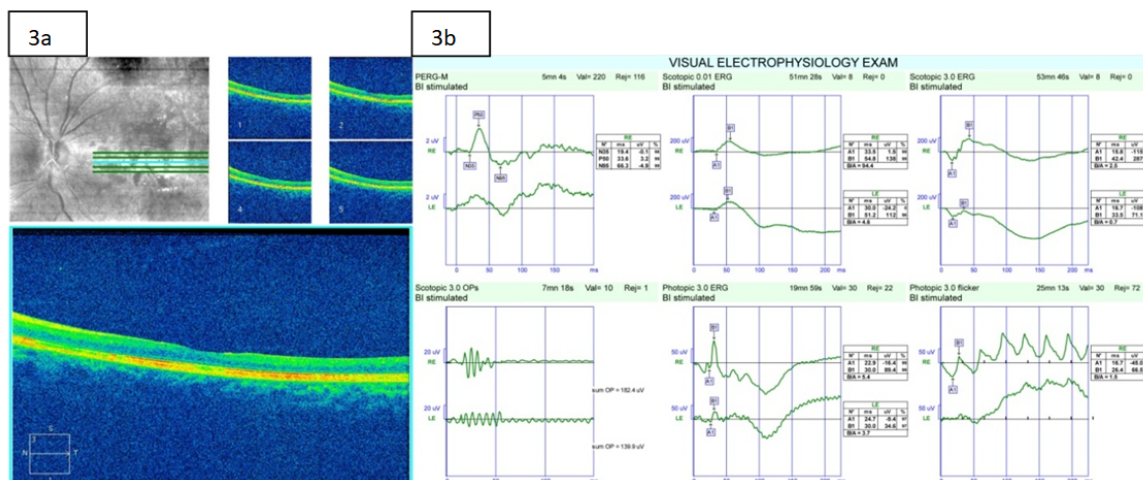


Figure 2: Planter aspect of foot showing likely entry site of the larva (arrow).



Figures 3a and 3b: Left eye OCT through fovea and ERG response of left eye respectively.



Figure 4: Area around the active lesions lasered(arrow).

Discussion

Diffuse unilateral subacuteneuroretinitis is an infectious ocular disease caused by infiltration of subretinal space by motile nematodes like *Toxocaracanis*, *Ancylostoma canicum*, *Baylisascaris procyoni* [1]. The clinical picture in chronic case of DUSN includes the typical presentation as seen in our case. The examination should also include the integumentary system specially the feet to look for associated cutaneous larva migrans. This can indicate the possible site of entry of the worm and also aid in the diagnosis.

Natural course of untreated DUSN can be divided into early and late stages:

Early stage: The principal complaints in early stage include decrease in visual acuity with or without central /paracentral scotoma. Few patients may also be asymptomatic [2,3]. The posterior segment is characterized by mild to moderate vitritis, optic disc edema, and

recurrent crops of evanescent, multifocal, yellow-white lesions at the level of the outer retina and choroid [4].

Late stage: 80% or more patients may have visual acuity 20/200 or worse [3,5]. Posterior segment findings are characterized by focal depigmentation of the retinal pigmentary epithelium (RPE), most prominent in the peripapillary and peripheral retina. Optic atrophy and severe retinal arteriolar narrowing defines the late stage [5]. White-yellowish sub-retinal tunnels can be seen. These are suggestive of larva migration in the sub-retinal space [6]. The worm can be located at any stage of the disease [7].

The management of DUSN involves the elimination of the worm either by direct photo coagulation to the visible worm or indirectly by applying laser around and over the retinal lesions. In addition the role of anti-helminthic agents is essential with anti-helminthic therapy with thiabendazole and albedazole [8,9]. Anthelminthics are more effective in cases with moderate to marked vitritis or after laser photocoagulation. This could be due to disruption of the blood-retinal barrier allowing better penetration of drug into ocular tissue [8,10]. A single oral dose of Ivermectin can be combined with scatter photocoagulation to achieve high intraocular concentration resulting in elimination of the worm as well as amelioration of the skin lesion as seen in our case. In early stages, visual acuity can improve after killing the worm [11]. While in late stages, there is not much improvement [3].

Conclusion

In conclusion, DUSN is a cause of insidious and usually irreversible severe loss of peripheral and central vision. If identified in the early stage, various treatment modalities such as anthelminthics and laser photocoagulation can halt progression.

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