

Dermoscopy Before and After Treatment of Cutaneous Larva Migrans: Through the Dermoscope

Introduction

Cutaneous larva migrans (CLM) is a migratory eruption of the skin characterized by creeping or moving parasite larvae in the skin and is caused by larvae of several nematode parasites of the hookworm family (Ancylostomatidae).^[1] The usefulness of dermoscopy in CLM has not been well established, and the reported morphologic characteristics seem controversial. We report a rare case of bilateral CLM with vesicobullous lesions on the feet and its dermoscopic features before and after treatment in an adult male.

Case Presentation

A paddy farmer presented with an itchy, exudative eruption over the dorsa of both the feet, with a duration of 6 days. Examination revealed an erythematous linear, palpable, tortuous, serpiginous, and winding track on the dorsum of both the feet with erosions, oozing, scales, and hemorrhagic crusting. The width of the track ranged from 1 to 4 mm. Vesicles and tense bullae containing yellow serous fluid were present on both the feet in conjunction with the track. A presumptive diagnosis of CLM was made based on clinical findings. Dermoscopic examination using a hand-held dermoscope (DermLite DL4; 3 Gen, USA; $\times 10$) under polarized mode was carried out to discern its dermoscopic features both before [Figure 1a-i] and after the treatment [Figure 2a-i, Table 1].

Discussion

The diagnosis of CLM is mainly clinical. Overall, a low sensitivity in biopsy specimens to identify the larva has been reported as the larva is usually 1 to 2 cm ahead of the advancing end of the visible

track created by its migration, dwelling in the hair follicle or suprabasal burrow within the epidermis.^[1] In the recent past, many imaging techniques including dermoscopy have been used in CLM cases to establish the diagnosis and to study the course and depth of penetration of larva in the skin.^[2] Findings of studies identified in the literature regarding the use of various imaging techniques in CLM have been summarized in Table 2. Our findings of CLM on dermoscopy were more or less the same as that of lymphangioma circumscriptum, supporting the viewpoint of Ogueta I *et al.*^[2] that the brown areas observed on dermoscopy correspond to the dilated lymphatic channels and not to the body of the larva. This is further supported by the fact that the use of the lymphatic system has been proposed as one of the paths of dissemination of CLM.^[2]

Conclusion

The typical magnification offered by dermoscopy (10–20 \times) may not be enough to discern a hookworm which is further complicated by the wide range of agents that can cause CLM. Histopathological correlation with dermoscopic findings may further elucidate the accuracy of dermoscopy in the diagnosis of this entity.

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.

**Shagufta Rather,
Aaqib Aslam,
Faizan Younus**

*Department of Dermatology,
Venereology and Leprosy
Government Medical College
Srinagar, Jammu and Kashmir
India*

Address for correspondence:

*Dr. Shagufta Rather,
Associate Professor,
Postgraduate Institute,
Department of Dermatology,
Government Medical College
Srinagar, University of
Kashmir, Srinagar, Jammu
and Kashmir-190 001, India.
E-mail: shagufta.giri@gmail.
com*

Access this article online

Website: www.idoj.in

DOI: 10.4103/idoj.idoj_577_21

Quick Response Code:



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: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Rather S, Aslam A, Younus F. Dermoscopy before and after treatment of cutaneous larva migrans: Through the dermoscope. *Indian Dermatol Online J* 2022;13:690-4.

Received: 13-Sep-2021. **Revised:** 14-Apr-2022.

Accepted: 16-Apr-2022. **Published:** 05-Sep-2022.

Table 1: Dermoscopic features before and after the treatment

Pre-treatment dermoscopic findings	Post-treatment dermoscopic findings at 7 th day
Red to pink to purple structureless area in a linear serpiginous and winding pattern, corresponding to the track created by the migration of the larva.	Pale brown structureless area in the background along the serpiginous track. Minimal background erythema and occasional red dots were present along the track.
Multiple translucent pale yellow-brown structureless areas arranged in a segmental fashion divided by white-yellow lines projecting into yellow-brown structures as partitions, corresponding to the dilated lymphatic channels.	Crust and scab were more prominent with the formation of golden brown and dark brown crust (hemorrhagic crusting).
Red and purple dots seen along the track, corresponding to empty burrows.	Brown translucent structureless areas with striations and septae were more prominent and organized.
Few red to purple globules, along the linear track correspond to dilated vessels due to inflammation.	Pale yellow to brown clods/ lacunae separated by whitish septa. Whitish-yellow structureless veil is seen in the center.
Dark brown and dark red crust due to spongiotic dermatitis and inflammatory infiltrate on histopathology.	
Multiple, rounded, well-circumscribed areas, lacunae/clods of varying shades seen.	
Yellow to tan lacunae surrounded by pale septa, corresponding to the multiple dilated lymphatic channels in the superficial dermis, filled with lymphatic fluid without the inclusion of blood.	
Reddish–brown to violaceous to purple lacunae, due to the inclusion of blood-filled vessels that lead to a color transition from dark to light in some lacunae.	
The surface of some lacunae is studded with homogenous white-colored dots, ranging from 1 to 3mm, resembling deep purple to violet-colored mulberry, corresponding to the presence of eosinophilic proteinaceous substance seen in histopathology.	
Whitish to pale brown structureless veil around the lacunae corresponding to epidermal hyperkeratosis and acanthosis on histopathology.	

Table 2: Summary of findings of studies identified in the literature regarding the use of various imaging techniques in CLM

Studies	Relevant findings reported in the literature
Elsner <i>et al.</i> ^[3] (1997)	First to use dermoscopy in the diagnosis of CLM
Veraldi <i>et al.</i> ^[4] (2000)	Documented larva in just one lesion (1.6%) out of the 60 tracks studied. Reported no utility of epiluminescence microscopy in the diagnosis of CLM
Morsy <i>et al.</i> ^[5] (2007)	Oval intraepidermal image on optical coherence tomography was reported, which the authors interpreted as part of an empty tunnel. However, the larva could not be identified.
Zalaudek <i>et al.</i> ^[6] (2008)	Translucent brownish structureless areas with a linear segmental arrangement corresponding to the body of the larva were observed on dermoscopy with dotted vessels.
Purdy <i>et al.</i> ^[7] (2011)	Confocal scanning laser microscopy has been shown to be an effective method for identifying the highly refractile larva but its high cost and operating complexities limit its utility.
Aljasser <i>et al.</i> ^[8] (2013)	A near-infrared fluorescence study of the lesion with a custom-built camera was done, showing brownish, linear, and oval structures. The authors presumed the bright oval structures to be larvae.
Gonzalez-Ramírez RA <i>et al.</i> ^[9] (2015)	Translucent reddish-brown structureless areas in a segmental arrangement, corresponding to the body of the larva
Aldás EG (2018). ^[10]	Brownish oval structures with a yellow periphery were observed on polarized dermoscopy, bearing semblance to focal areas of hyperpigmentation.
Ogueta I <i>et al.</i> ^[2] (2019)	The authors reported the potential role of very high and high-frequency ultrasonography in determining the size and location of cutaneous larva migrans agents, assessing the patho-physiological alterations in the skin and the mechanism of dissemination of the larva.

CLM: cutaneous larva migrans

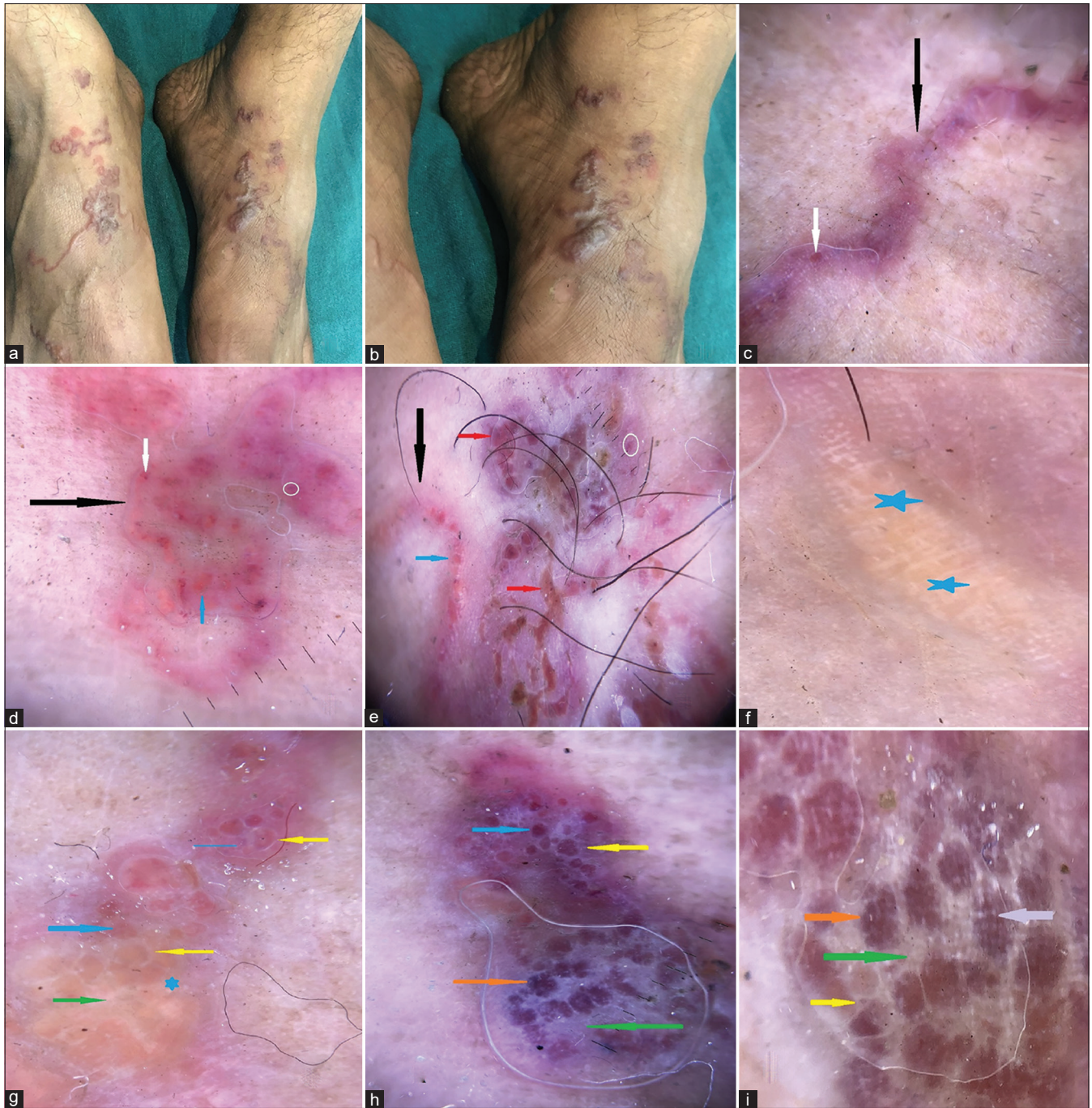


Figure 1: (a and b) Clinical images of cutaneous larva migrans. Linear, erythematous, and tortuous, serpiginous track with crusting, oozing, bullous lesions, distributed bilaterally on the dorsum of feet. Bullae filled with serous fluid can be seen. (c-i) Dermoscopic findings before treatment: Pink and purple structureless area in a linear, serpiginous, and winding pattern, corresponding to the track created by the migration of the larva. (Black arrows). Multiple red and purple dots are seen along the track. (White arrows) Multiple well-circumscribed, round clods, and lacunae of varying shades, ranging from pale brown (blue stars, Figure 1f) to reddish-orange (blue arrows) to violaceous (blue lines), to deep purple (orange arrows) in color, in clusters, arranged along the linear track lacunae/clods. The lacunae are separated by whitish septa (yellow arrows) and a pale white structureless veil seen in the center (green arrows). The surface of some lacunae is studded with white-colored dots, ranging from 1 to 3mm, resembling deep purple- to violet-colored mulberry. (Lavender arrow) A translucent pale brown structureless area, elliptical-shaped, on the surface showing white lines projecting into yellow-brown structures as partitions, giving it a segmented appearance is seen in one place (blue stars, Figure 1g). Reddish-brown crust, along the track, in linear distribution (red arrows) (DermLite DL4, polarized; original magnification: $\times 10$)



Figure 2: (a) Post-treatment clinical picture on the 7th day. Linear, serpiginous track with dark red crusting, distributed bilaterally on the dorsum of the feet with desiccation and scab formation. (b-i) Dermoscopic findings after treatment on the 7th day. Golden-brown to dark brown and black crust (red arrows) against a pale brown structureless background arranged in a linear serpiginous track-like fashion (black lines). Background erythema is not seen, and red dots and areas are occasional (white arrows). Yellow to tan, round well-circumscribed lacunae, clustered, along the track (blue stars, Figure 2 c and f). Only a few of the lacunae show a reddish hue (blue arrows). Lacunae are separated by pale white septa, (yellow arrows), and in the center is pale brown to white structureless veil (green arrows). Brown translucent structureless areas with striations, septae, more prominent, and organized (blue stars, Figure 2 g, h and i). The elliptical area is seen along the track, with yellow-brown clods, some showing pinkish-red areas on the sides. (DermLite DL4, polarized; original magnification: $\times 10$)

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Piccolo V. Update on dermoscopy and infectious skin diseases. *DermatolPract Concept* 2019;10:e2020003.
2. Ogueta I, Navajas-Galimany L, Concha-Rogazy M, Álvarez-Véliz S, Vera-Kellet C, Gonzalez-Bombardiere S, *et al.* Very high- and high-frequency ultrasound features of cutaneous larva migrans. *J Ultrasound Med* 2019;38:3349-58.
2. Elsner E, Thewes M, Worret WI. Cutaneous larva migrans detected by epiluminescent microscopy. *ActaDerm Venereal* 1997;77:487-8.
3. Veraldi S, Schianchi R, Carrera C. Epiluminescence microscopy in cutaneous larva migrans. *ActaDermVenereol* 2000;80:233.
4. Morsy H, Mogensen M, Thomsen J, Thrane L, Andersen PE, Jemec GB. Imaging of cutaneous larva migrans by optical coherence tomography. *Travel Med Infect Dis* 2007;5:243-6.
5. Zalaudek I, Giacomel J, Cabo H, Di Stefani A, Ferrara G, Hofmann-Wellenhof R, *et al.* Entodermoscopy: A new tool for diagnosing skin infections and infestations. *Dermatology* 2008;216:14-23.
6. Purdy KS, Langley RG, Webb AN, Walsh N, Haldane D. Cutaneous larva migrans. *Lancet* 2011;377:1948.
7. Aljasser MI, Lui H, Zeng H, Zhou Y. Dermoscopy and near-infrared fluorescence imaging of cutaneous larva migrans. *PhotodermatolPhotoimmunolPhotomed* 2013;29:337-8.
8. Gonzalez-RamírezRA, Crocker-Sandoval AB, Sanchez-Dueñas LE. Dermoscopic findings in larva migrans. *Dermatol Rev Mex* 2015;59:98-101.
9. Aldas EG. Dermoscopy: A fundamental tool in the diagnosis of atypical cutaneous larva migrans. *Clin Res Dermatol* 2018;1:1-2.