Dermatology Reports
https://www.pagepress.org/journals/index.php/dr/index

eISSN 2036-7406

Publisher's Disclaimer. E-publishing ahead of print is increasingly important for the rapid dissemination of science. **Dermatology Reports** is, therefore, E-publishing PDF files of an early version of manuscripts that undergone a regular peer review and have been accepted for publication, but have not been through the copyediting, typesetting, pagination and proofreading processes, which may lead to differences between this version and the final one. The final version of the manuscript will then appear on a regular issue of the journal. E-publishing of this PDF file has been approved by the authors.

Please cite this article as: Bazzacco G, Nardello C, Caposiena Caro RD, et al. Cutaneous larva migrans: is dermoscopy useful for the treatment? Dermatol Rep 2024 [Epub Ahead of Print] doi: 10.4081/dr.2024.10049

Submitted 30/07/2024 – Accepted 01/07/2024

Cutaneous larva migrans: is dermoscopy useful for the treatment?

Giulia Bazzacco, Carlotta Nardello, Raffaele Dante Caposiena Caro, Nicola Di Meo, Iris Zalaudek, Marina Agozzino

Department of Dermatology, 'Maggiore' Hospital, University of Trieste, Italy

Correspondence: Giulia Bazzacco, Dermatology Clinic, Hospital Maggiore, Piazza dell'Ospitale 1, 34129, Trieste, Italy.
Tel.: +39 3460401280
E-mail: giuliabazzacco@gmail.com

Key words: cutaneous larva migrans; treatment; ivermectin; dermoscopy.

Contributions: MA, defined the design and intellectual content of the paper; GB, CN, searched for literature, wrote the draft, edited the manuscript and preparing them for submission; RDCC, IZ, NdM, reviewed the article with consistent integrations. All the authors approved the final version to be published.

Conflict of interest: the authors declare no potential conflict of interest.

Funding: none.

Availability of data and material: data sharing is not applicable to this article as no new data were created or analyzed in this study.

Consent for publication: the patients in this manuscript have given written informed consent to publication of their case details.

Abstract

Cutaneous larva migrans (CLM) is a zoonotic disease endemic in tropical regions. CLM diagnosis mainly relies on the morphology of the skin lesions, however dermoscopy can improve diagnostic accuracy. In this paper, we report two cases of CLM to highlight the importance of dermoscopic follow-up in early identification of treatment failure, as well as the effectiveness of topical ivermectin as a combined medication.

Introduction

Cutaneous larva migrans (CLM) is a zoonotic disease endemic in tropical regions. It is caused by filariform larvae of several hookworm species, which penetrate beneath the skin, after contact with infected animals' feces.[1] CLM diagnosis mainly relies on the morphology of the skin lesions, however dermoscopy can improve diagnostic accuracy and differential diagnosis from its mimics.[2] Dermoscopic evaluation usually reveals translucent brownish structureless areas. These areas are arranged segmentally and correspond to the helminth's body. Around the bodies, red dotted vessels and whitish/yellowish scales are arranged in the empty burrows and their presence suggest a variable grade of phlogistic reaction.[3,4] In this paper, we aim to report two cases of CLM in which dermoscopy evaluation was not only crucial in the diagnosis, but it also guided the treatment plan.

Case Report

Case 1

A 28-year-old woman has been referred to our clinic presenting a pruritic and creeping eruption widely located on the back, after returning from a trip to Thailand. Physical examination showed numerous elevated lesions arranged in linear tortuous tracts of 10-15 cm in length, especially in the lumbar region (Fig. 1a). Dermoscopy revealed reddish serpiginous tracks, red dots, and yellow-whitish scales (Fig. 1b). The patient was diagnosed with CLM and was treated with albendazole 400 mg orally for 7 days. At 2-week follow-up, reddish serpiginous tracks with brownish crusts were still present at dermoscopic evaluation and the patient still complained of itching (Fig. 1c-1d). In suspicion of partial response to albendazole, the patient underwent off-label 0.1% ivermectin cream for 2 weeks. At 4-week follow-up, a complete remission was obtained and dermoscopy only showed post-inflammatory pigmentation (Fig. 1e-1f). No recurrence was observed at 2-months follow-up.

Case 2

A 35-year-old man came to our attention for a mildly pruritic and serpiginous eruption located in the gluteal region (Fig. 2a), developed 20 days after returning from a Caribbean trip. Dermoscopy

revealed brownish structureless areas, red dots, white scales, and pustules on an erythematous background (Fig. 2b). CLM was diagnosed and treatment with albendazole 400 mg orally for 3 days was commenced. At 2-week follow-up, eruption and crusting were non-evolving, although itching and serpiginous tracts were still present. Dermoscopic evaluation highlighted the persistence of phlogistic reaction, revealing the presence of red dots, few white scales and erythema (Fig. 2c). Based on the presentation, off-label topical ivermectin 10mg/g twice daily was introduced. After 3 days of therapy, the patient felt no more symptoms, and after 2 weeks a complete clinical remission was obtained.

Discussion

To date, the usefulness of dermoscopy in CLM has not been well established, and only one publication discerns dermoscopic features of CLM both before and after the treatment.[5] Although clinical evaluation is still the main diagnostic tool, dermoscopy not only allows a confirmatory criterion, with the observation of larval body and empty burrows, but it may also guide the treatment in case of albendazole failure. In fact, when signs of phlogistic reaction persist at dermoscopy (erythema, red dots, whitish/yellowish scales), along with relapsing symptoms, a resistance to first line therapy must be suspected. Oral anti-parasitic agents seem to be more effective than topical treatments (complete remission in 77%-97% of cases[6]); 400 mg albendazole for 3 days or more is considered the treatment of choice, although several other regimens have been reported in literature.[7,8] However, increased albendazole tolerance is reportedly surging, thus requiring after treatment follow-up to ensure a complete remission from the disease.[9] Furthermore, topical treatment with ivermectin 1% cream appears to be effective as monotherapy and as combined medication as well[10-13], despite a single-case of reported failure.[14]

Conclusions

In conclusion, our case series highlights the importance of dermoscopic follow-up in early identification of albendazole failure, as well as the effectiveness of topical ivermectin as a combined medication. Further research with larger sample size is needed to better understand influence of dermoscopy into clinical practice for CLM management.

References

1. Leung AKC, Barankin B, Hon KLE. Cutaneous Larva Migrans. Recent Pat Inflamm Allergy Drug Discov. 2017;11(1):2-11. doi: 10.2174/1872213X11666170110162344. PMID: 28078983.

2. Conforti C, Dri A, Toffoli L, Zelin E, Zalaudek I, Di Meo N. Entodermoscopy: A Useful Tool for the Diagnosis of Cutaneous Larva Migrans. Dermatol Pract Concept. 2021 Mar 8;11(2):e2021014. doi: 10.5826/dpc.1102a14. PMID: 33747627; PMCID: PMC7943200.
3. Zalaudek I, Giacomel J, Cabo H, et al. Entodermoscopy: A new tool for diagnosing skin infections and infestations. Dermatology. 2007;216(1):14-23. DOI: 10.1159/000109353. PMID:18032894.
4. Enechukwu NA, Ogun GO, Malachy DE, Errichetti E, Rudnicka L. Dermoscopic Characteristics of Cutaneous Larva Migrans in the Dark Skin: A Study from Banjul, The Gambia. Clin Exp Dermatol. 2023 Nov 6:llad381. doi: 10.1093/ced/llad381. Epub ahead of print. PMID: 37940115.
5. Rather S, Aslam A, Younus F. Dermoscopy Before and After Treatment of Cutaneous Larva Migrans: Through the Dermoscope. Indian Dermatol Online J. 2022 Sep 5;13(5):690-694. doi: 10.4103/idoj.idoj_577_21. PMID: 36304643; PMCID: PMC9595163.
6. Bouchaud O, Houzé S, Schiemann R, Durand R, Ralaimazava P, Ruggeri C, Coulaud JP. Cutaneous larva migrans in travelers: a prospective study, with assessment of therapy with ivermectin. Clin Infect Dis. 2000 Aug;31(2):493-8. doi: 10.1086/313942. Epub 2000 Sep 7. Erratum in: Clin Infect Dis 2001 Feb 1;32(3):523. PMID: 10987711.
7. Sunderkötter C, von Stebut E, Schöfer H, Mempel M, Reinel D, Wolf G, Meyer V, Nast A, Burchard GD. S1 guideline diagnosis and therapy of cutaneous larva migrans (creeping disease). J Dtsch Dermatol Ges. 2014 Jan;12(1):86-91. doi: 10.1111/ddg.12250. PMID: 24393321.
8. Wesołowski R, Mila-Kierzenkowska C, Pawłowska M, Szewczyk-Golec K, Kałużna L, Wozniak AM. Cutaneous larva migrans imported from a tropical trip - Case report and literature review. Ann Agric Environ Med. 2021 Dec 29;28(4):709-712. doi: 10.26444/aaem/131600. Epub 2020 Dec 30. PMID: 34969233.
9. Puente Puente S, Bru Gorraiz F, Azuara Solís M, Colomo Gómez C, González Lahoz JM. Larva migrans cutánea: 34 casos importados [Cutaneous larva migrans: 34 outside cases]. Rev Clin Esp. 2004 Dec;204(12):636-9. Spanish. doi: 10.1016/s0014-2565(04)71567-2. PMID: 15710070.
10. Gerbig AW, Kempf W. Topical treatment of cutaneous larva migrans with ivermectin 1. Int J Dermatol. 2020 Jan;59(1):e21-e22. doi: 10.1111/ijd.14673. Epub 2019 Oct 24. PMID: 31646610.

11. Gelmetti C, Brena M, Veraldi S. Hookworm-related cutaneous larva migrans of the penis successfully treated with topical ivermectin. Pediatr Dermatol. 2019 May;36(3):391-392. doi: 10.1111/pde.13789. Epub 2019 Mar 3. PMID: 30828865.
12. Magri F, Chello C, Pranteda G, Pranteda G. Complete resolution of cutaneous larva migrans with topical ivermectin: A case report. Dermatol Ther. 2019 May;32(3):e12845. doi: 10.1111/dth.12845. Epub 2019 Feb 7. PMID: 30693620.
13. Smilga AS, Bujold J. A Unique Case of Cutaneous Larva Migrans Acquired Within the Province of Quebec and Successfully Treated With Topical Ivermectin. J Cutan Med Surg. 2018 May/Jun;22(3):347-348. doi: 10.1177/1203475418755763. Epub 2018 Jan 26. PMID: 29373923.
14. Veraldi S, Angileri L, Parducci BA, Nazzaro G. Treatment of hookworm-related cutaneous larva migrans with topical ivermectin. J Dermatolog Treat. 2017 May;28(3):263. doi: 10.1080/09546634.2016.1214669. Epub 2016 Aug 10. PMID: 27687255.

Figure 1: a) Clinical appearance before treatment: numerous elevated serpentines-bizarre erythematous tracts of 10-15 cm in length located on the lumbar region; b) dermoscopic findings before treatment (DermLite; ×10): pink and purple structureless area in a linear, serpiginous, and winding pattern, red dots, yellow and white scales on an erythematous background. Post-treatment clinical (c) and dermoscopic (DermLite; ×10) (d) appearance after 2-week follow-up visit: linear dark red tracts with brownish and yellowish crusts on an

erythematous background, with occasional red dots and areas. Clinical (e) and dermoscopic (DermLite; ×10) (f) appearance after 4-week follow up: post-inflammatory hyperpigmentation (complete remission).

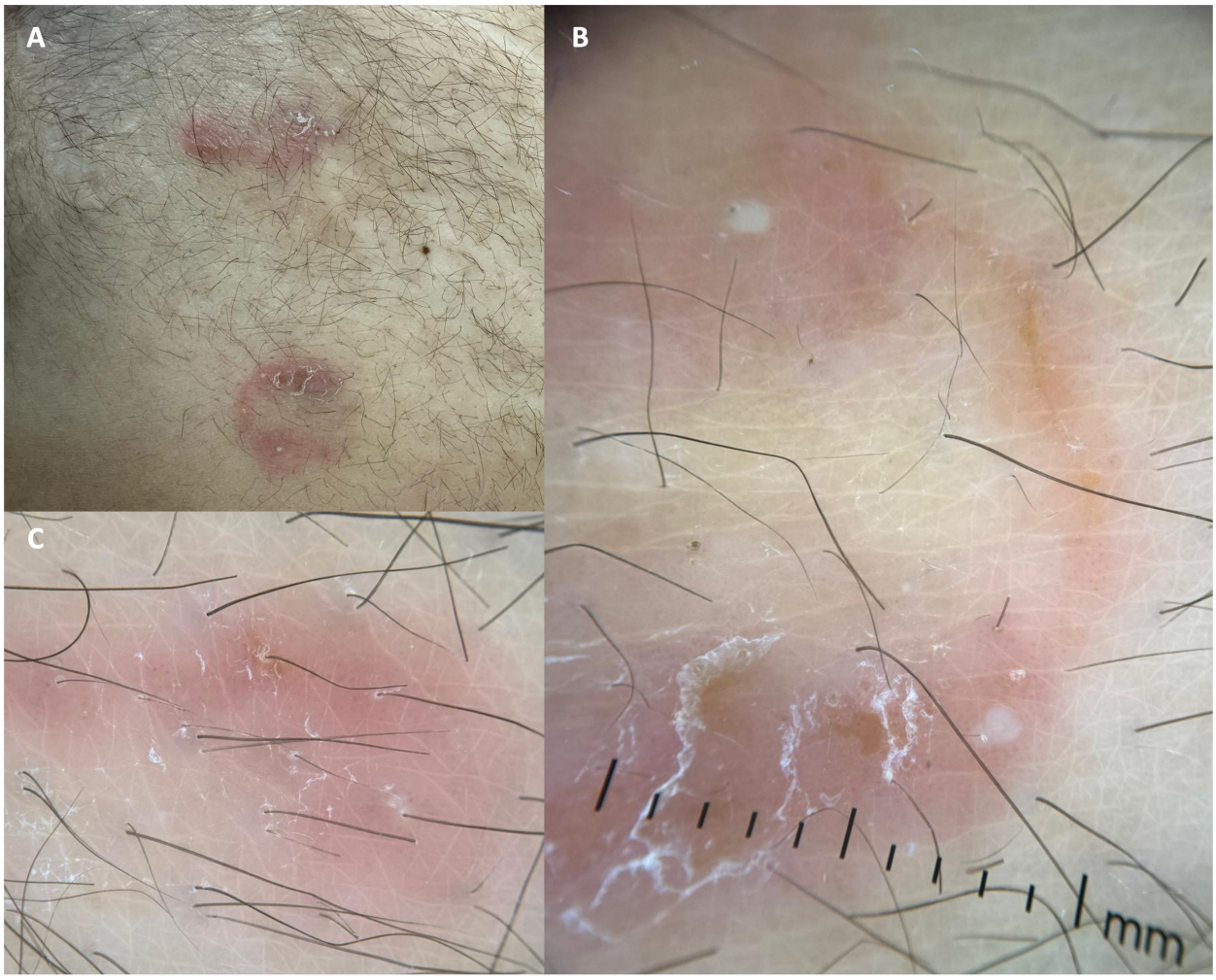

Figure 2: a) Clinical appearance before treatment: erythematous serpiginous tracts on the gluteal region; b) dermoscopic findings before treatment (DermLite; ×10): brownish structureless areas, red dots, white scales and pustules on an erythematous background; c) post-treatment dermoscopic appearance after 2-week follow-up visit (DermLite; ×10): serpiginous erythematous tracks with red dots and few white scales.