

CASE REPORT

Case of multiple furuncular myiasis in Northeast Ethiopia

Abebe Dires¹  | Assen Kebede¹ | Sisay Gedamu¹  | Tadila Dires²

¹Departement of Comprehensive Nursing, School of Nursing and Midwifery, College of Medicine & Health Sciences, Wollo University, Dessie, Ethiopia

²Department of Nursing, College of Medicine & Health Sciences, Debre Tabor University, Debre Tabor, Ethiopia

Correspondence

Abebe Dires, Department of Comprehensive Nursing, School of Nursing and Midwifery, College of Medicine & Health Sciences, Wollo University, Dessie, Ethiopia.
Email: abede9907@gmail.com

Abstract

Human myiasis is a neglected disease caused by parasitic infestation of the skin, cavities, and other body parts by larvae (maggots) of a wide variety of dipteran flies. Here, we present a case of multiple furuncular myiasis caused by *Cordylobia anthropophaga* in a 61-year-old woman from Northeast Ethiopia.

KEYWORDS

cutaneous myiasis, *Cordylobia anthropophaga*, Ethiopia, fly larva, furuncular myiasis, myiasis

1 | INTRODUCTION

Human myiasis is a neglected disease caused by parasitic infestation of the skin, wound, cavities, and other body parts by larvae (maggots) of a wide variety of dipteran flies. Myiasis has a global sporadic distribution. However, it is more frequently reported from tropical areas in Africa. Numerous types of myiasis could occur in humans, and it is mainly determined by the presence and geographic distribution of different fly species.¹ Based on parasite–host interaction, myiasis can be classified broadly as obligatory, facultative, and accidental myiasis. It can also classify as cutaneous, nasopharyngeal, intestinal, and urogenital myiasis on the basis of body parts affected.^{1,2} The dipterous larvae species causing obligatory myiasis requires a living host tissue for its survival.³

Cutaneous myiasis is the most common forms of human myiasis which occurs after the penetration of dipteran larvae into the skin. Furuncular, migratory, and wound myiasis are the three clinical forms of cutaneous myiasis. However, furuncular myiasis is the major type that usually manifested with papular and nodular skin

lesions.⁴ *Cordylobia anthropophaga* and *Dermatobia hominis* are the primary fly species identified for the distribution of furuncular myiasis in Africa and Latin America, respectively.^{5,6} In general, myiasis is underestimated and unfamiliar problem for most of the healthcare providers in Ethiopia. Thus, we present a case of multiple furuncular myiasis in a 61-year-old woman.

2 | CASE PRESENTATION

A 61-year-old woman from Kombolcha town in Northeast Ethiopia was presented to Kombolcha 03 health center with a chief complain of swelling over the left arm, abdomen, and left thigh. She had also pain, discomfort, and itching sensation over the swelled areas. She had no history of any skin lesion in the past and no family history of boil or carbuncle. She had no history of hypertension, diabetes, heart failure, surgery, trauma, and bite. Moreover, she lives in a single room house that has no private latrine and garbage cans were available near her house.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2022 The Authors. *Clinical Case Reports* published by John Wiley & Sons Ltd.

The skin examination revealed tender, erythematous, soft and edematous masses with open skin lesions. Two of the edematous lesions were detected in the left arm with no bleeding and pus discharge. However, the posterior ends of the larvae were detectable protruding from the centre of the lesions at the proximal end of the lower left arm (Figure 1A) and on the left thigh (Figure 1B). The other lesion with visible larva was detected in the abdomen (Figure 2).

The larvae were removed manually at the proximal end of the lower left arm and abdomen (Figure 3). A diagnosis of multiple furuncular myiasis was done based on the clinical manifestations and the presence of larvae. As it was not possible to send the specimens to an entomologist, we used taxonomic keys from the literature to identify the larvae to those of *C. anthropophaga*.^{7,8} Wound care using hydrogen peroxide and normal saline was provided for 7 days and aseptic technique was implemented throughout the procedure. After the removal of the larvae and daily wound care, the patient was relatively recovered with the formation of circular remnant scars and crust at the center (Figure 4).



FIGURE 1 (A) Lesions and visible larva (maggot) at the proximal end of the lower left arm. (B) Lesions and visible larva on the left thigh

3 | DISCUSSION

Human myiasis has been reported frequently from tropical countries, particularly in Africa and Latin America.^{5,9} It can occur at any age of the life and cutaneous myiasis is the prominent type of human myiasis.⁴ Furuncular myiasis, which is the main form of cutaneous myiasis can be diagnosed clinically. However, a routine dermoscopy is highly recommended for precise diagnosis of furuncular myiasis and sometimes ultrasound can be used.¹⁰ In our case, the posterior ends of the larvae were detectable protruding from the center of the lesions and *C. anthropophaga* was identified using literature taxonomical keys. In Africa, *C. anthropophaga* and *C. rodhaini* are the main etiologic agents causing furuncular myiasis. However, *D. hominis* have been reported mainly in America.⁹

The skin lesions of furuncular myiasis could be localized or multiple. This patient was presented with multiple furuncular lesions in the arm, thigh, and abdomen. The complete removal of larvae from the skin and prevention of secondary infection are the goals of treatment in furuncular myiasis. In addition to the mechanical removal of maggots out of the skin, suffocating and toxic agents such as turpentine oil, petroleum jelly, and ivermectin can be used as required.¹¹ Surgical removal of maggots may be needed in rare cases. In this patient, the larvae were removed manually.

Patients with furuncular myiasis could have associated symptoms of pruritus, pain, skin redness, and sense of crawling beneath the skin.^{12,13} In this patient, swelling, pain, and skin redness were the predominant clinical presentations. Papules and nodules are the main skin lesions



FIGURE 2 Swelling over the abdomen with the presence of visible larvae

FIGURE 3 Removed larvae from the proximal end of the lower left arm and abdomen



FIGURE 4 Patient's condition 2 weeks after the removal of the larvae

observed in furuncular myiasis¹ and in our case, the papular type was identified. Furuncular myiasis is usually self-limiting, and the lesions can be healed after the removal of larvae. However, bacterial super infection may complicate and prolonged the duration of the lesions occasionally.^{14,15} The limitation of this case report is that the species causing the myiasis was not identified on molecular or morphological bases.

4 | CONCLUSIONS

Careful examination of all type of skin lesions and high index of suspicion are essential to diagnose multiple furuncular myiasis in clinical areas. Moreover, health

professionals in Ethiopia shall be aware of furuncular myiasis to identify and treat similar cases as early as possible.

AUTHOR CONTRIBUTIONS

AD and AK contributed to the collection of data and the management of the patient. AD and SG wrote the initial draft of manuscript. AD, SG, and TD revised and prepared the final version of the manuscript. All authors have read and approved the final manuscript and agree to take full responsibility for the integrity and accuracy of the work.

ACKNOWLEDGMENT

None.

CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The data are available from the correspondent author and can be obtained upon request.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

ORCID

Abebe Dires  <https://orcid.org/0000-0002-0186-1123>

Sisay Gedamu  <https://orcid.org/0000-0001-6486-9125>

REFERENCES

1. Francesconi F, Lupi O. Myiasis. *Clin Microbiol Rev.* 2012;25(1):79-105.
2. Hosni EM, Kenawy MA, Nasser MG, Al-Ashaal SA, Rady MH. A brief review of myiasis with special notes on the blow Flies' producing myiasis (F.: Calliphoridae). *Egyptian Acad J Biol Sci E Medical Entomol Parasitol.* 2019;11(2):25-32.
3. Mullen GR, Durden LA. *Medical and Veterinary Entomology.* Academic Press; 2009.
4. McGraw TA, Turiansky GW. Cutaneous myiasis. *J Am Acad Dermatol.* 2008;58(6):907-926.

5. Kuria SK, Oyedeji AO. Human myiasis cases originating and reported in africa for the last two decades (1998–2018): a review. *Acta Trop*. 2020;210:105590.
6. Robbins K, Khachemoune A. Cutaneous myiasis: a review of the common types of myiasis. *Int J Dermatol*. 2010;49(10):1092-1098.
7. Yasukawa K, Dass K. Myiasis due to *Cordylobia anthropophaga*. *Am J Trop Med Hyg*. 2020;102(2):251.
8. Ko JY, Lee I-Y, Park BJ, Shin JM, Ryu J-S. A case of cutaneous myiasis caused by *Cordylobia anthropophaga* larvae in a Korean traveler returning from Central Africa. *Korean J Parasitol*. 2018;56(2):199-203.
9. Bernhardt V, Finkelmeier F, Verhoff MA, Amendt J. Myiasis in humans—a global case report evaluation and literature analysis. *Parasitol Res*. 2019;118(2):389-397.
10. Bakos RM, Bakos L. Dermoscopic diagnosis of furuncular myiasis. *Arch Dermatol*. 2007;143(1):115-126.
11. Boggild AK, Keystone JS, Kain KC. Furuncular myiasis: a simple and rapid method for extraction of intact *Dermatobia hominis*. *Clin Infect Dis*. 2002;35(3):336-338.
12. Musaya J, Mponda K. Case report: Furuncular myiasis in Malawi. *Wellcome Open Res*. 2020;5(41):41.
13. Yusuf MA, Pritt BS, McMichael JR. Cutaneous myiasis in an elderly woman in Somaliland. *Int J Women's Dermatol*. 2019;5(3):187-189.
14. Daher VB, de Melo Fernandes EJ, Moura FS, et al. Severe complications due to myiasis infestation. *Braz J Dev*. 2020;6(5):27051-27054.
15. Shilpakar O, Karki B, Rajbhandari B. Cutaneous myiasis in a neglected elderly. *Oxf Med Case Rep*. 2020;2020(8):omaa063.

How to cite this article: Dires A, Kebede A, Gedamu S, Dires T. Case of multiple furuncular myiasis in Northeast Ethiopia. *Clin Case Rep*. 2022;10:e06015. doi: [10.1002/ccr3.6015](https://doi.org/10.1002/ccr3.6015)