

## Case Report

# Furuncular myiasis in Italian traveler returning from Kenya

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### Abstract

Myiasis has been defined as the infestation of organs and/or tissues with dipterous larvae. They are especially widespread in tropical and subtropical areas. Cutaneous myiasis is its most frequent clinical presentation. This report presents a case of furuncular myiasis caused by the larva of *Cordylobia anthropophaga* in a 22-year-old girl living in Bergamo, Northern Italy, who returned from Kenya (Watamu) with a big, painful furuncle in her right gluteus. The patient accidentally removed the larva from a large pimple and took it to the infectious disease ambulatory clinic at the ASST “Papa Giovanni XXIII” Hospital, Bergamo. In the Microbiology and Virology Department of the same hospital, a larva of *C. anthropophaga* was identified and the diagnosis of myiasis was confirmed.

**Key words:** Furuncular myiasis; Tumbu fly; *Cordylobia anthropophaga*; Kenya; traveler.

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### Introduction

Myiasis is a parasitic infestation of a live mammal's organs and/or tissues by larvae of dipterous flies, which can be living or partially/completely necrotic. They feed on their host's tissue to grow and mature [1]. Especially widespread in tropical and subtropical areas (including Central America, South America, and tropical Africa), but often in temperate climates too, this parasitosis is classified based on two main systems: anatomical and ecological. The anatomical classification is more useful for practical diagnosis and for identifying the organ affected by the parasitosis. This classification system divides myiasis into four groups: sanguivorous or bloodsucking, cutaneous (furuncular and migratory), wound, and cavitary myiasis (ocular, ear-nose-mouth, urogenital, intestinal and cerebral) [2].

Its most frequent form, furuncular myiasis, is defined as the penetration of the larvae in the healthy skin and subsequent development of a boil-like nodule. It is common in tropical countries and can be caused by the human botfly (*Dermatobia hominis*) in Latin America [3], and by the Tumbu fly (*Cordylobia anthropophaga*) and Lund's fly (*Cordylobia rodhaini*) in Africa [2,4].

In particular, *C. anthropophaga* incidentally affects humans mainly during the rainy season. Adult flies lay their eggs on dry sand or shady soil, which can be often

contaminated by animal urine or feces, or on dirty and/or non-ironed clothes. The flies may also be stimulated for oviposition by the soiled napkins of babies. Flies never deposit their eggs directly on the human skin. The eggs hatch and larvae can survive without food for approximately 9 days. Upon exposure to warmth or vibration, they penetrate into the skin areas covered by the contaminated clothes [4].

The penetration of *C. anthropophaga* into the skin is usually asymptomatic, although the area of penetration can be slightly itchy up to two days after the infestation. In a few days, a reddish papule develops and takes on a boil-like appearance when fully developed [2,4]. An intense inflammatory reaction in the tissue surrounding the lesions develops over a period of six days [2]. Once the larvae have penetrated into the skin, their development may take 8 to 12 days to proceed through three stages of larval development prior to entering the prepupal stage. The pre-pupa then leaves the host and drops to the ground to develop later into a fly [5,6]. The recommended preventive measures against myiasis are to avoid hanging laundry outside in the shade and to iron it when it is left outside to dry on the soil (as practiced in many endemic countries).

We present here a case of furuncular myiasis in an Italian patient returning from Kenya, East Africa. The larva was accidentally removed from a boil-like lesion

of the patient's buttocks and was identified as *Cordylobia anthropophaga*.

### Case report

A 22-year-old Caucasian girl came to the infectious disease ambulatory of the Azienda Socio-sanitaria Territoriale (ASST) "Papa Giovanni XXIII" Hospital in Bergamo (Northern Italy) with a still-living larva. The patient lives in Bergamo with her family, where she works as a maid. She does not smoke and does not drink alcohol, and had no comorbidities.

At the interview with the doctor, the patient reported that she had been in a tourist village in Watamu, Kenya (Eastern Africa) from 23 November 2017 to 01 December 2017, with a two-day-long safari (25 and 26 November 2017) into Tsavo National Park.

Since November 29, she had noticed a small, itchy red papule similar to an insect bite on the right gluteus. In the following days, it became more voluminous and the surrounding skin became erythematous and sore.

On December 4, the girl squeezed what looked like a large pimple and a whitish larva leaked out. The larva was immediately sent to the laboratory of Microbiology and Virology of ASST "Papa Giovanni XXIII" Hospital where it has been identified as *Cordylobia anthropophaga*.

The larva was identified as follows: it was 6 × 3 mm (Figure 1) in size, yellowish color with a cylindrical body, and had 11 segments; segments III-VIII had numerous small black, scattered spines, while IX-XI were almost bare. The anterior end had two black mouth-hooks with curved and sharp tips, without a cluster of conic denticles (Figure 2).

The posterior spiracles of the larva (Figure 3) carried three pairs of curved spiracular openings.

These morphological features were consistent with those described for *C. anthropophaga*.

At clinical examination, patient presented in good general condition, without systemic symptoms or objective alterations. On the right gluteus, an erythematous area was still evident, infilled about 2 centimeters with a small papule in the center. After manual removal of the larva, the patient took amoxicillin/clavulanic acid for five days (1 g, 3 times/day), to treat secondary bacterial skin infection. The lesion was completely resolved.

### Conclusion

We report one case of *Cordylobia anthropophaga* furuncular myiasis with a typical clinical pattern appearing in Northern Italy but acquired during a trip to Kenya, East Africa.

**Figure 1.** The larva of *C. anthropophaga* removed from the lesion.



**Figure 2.** The pair of curved black mouth-hooks of the larva of *C. anthropophaga* according to the laboratory diagnosis.



**Figure 3.** The posterior spiracles of the larva of *C. anthropophaga*.



This case shows that the increase in international travel, both for tourism and for business, underlines the need to improve the awareness of diseases that are not endemic in our country, especially those caused by infectious agents. Skin diseases, together with systemic febrile illness and acute diarrhea, are the leading causes of health problems in travelers and account for 8% to 12% of all tourist-related medical problems. Myiasis is usually among the five most common dermatologic conditions, representing 7.3% to 11% of cases [4,7].

Diagnosis of furuncular myiasis is easily done based solely on clinical grounds, especially in regions where the disease is endemic [2]. The patient's travel history may help to identify possible predisposing factors. In this case, thanks to travel anamnesis (this type of myiasis is endemic in Africa) and the patient's ability to remove the larva without damaging it. Thanks to these features we were able to correctly identify the larva of *C. anthropophaga* and confirm the diagnosis.

## References

- How EH, Yap D, Mbakada N (2017) An exotic abscess within the United Kingdom the Gambia: a case report. *J Med Case Rep* 11: 310.
- Francesconi F, Lupi O (2012) Myiasis. *Clin Microbiol Rev* 25: 79-105.
- Toussaint-Caire S, Woroszyński-Yoselevitz A, Vega-Memije ME, Villalobos G, Rivas N, Alejandre-Aguilar R, Romero-Valdovinos M, Maravilla P, Martínez-Hernández F (2018) Imported and autochthonous cases of myiasis caused by *Dermatobia hominis*: Taxonomic identification using the internal transcribed spacer region. *Am J Trop Med Hyg* 99: 940-944.
- Song SM, Kim SW, Goo YK, Hong Y, Ock M, Cha HJ, Chung DI (2017) A case of furuncular myiasis due to *Cordylobia anthropophaga* in a Korean traveler returning from Uganda. *Korean J Parasitol* 55: 327-331.
- Zumpt F (1965) Myiasis in man and animals in the Old World: a textbook for physicians, veterinarians and zoologists, London: Butterworths, 267 pp.
- Mandell GL, Bennett JE, Dolin R (1995) Myiasis and tungiasis, chapter 274, In Mandell GL, Douglas and Bennett editors. Principles and practice of infectious diseases. Philadelphia, PA: Churchill, Livingstone, Elsevier, pp 2562-2564.
- Villalobos G, Vega-Memije ME, Maravilla P, Martínez-Hernández F (2016) Myiasis caused by *Dermatobia hominis*: countries with increased risk for travelers going to neotropical areas. *Int J Dermatol* 55: 1060-1068.

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