Case Report

Accidental ulcer infestation due *Tenebrio molitor* in an AIDS patient: *canthariasis*◊

Wilmer E. Villamil-Gómez,1,2,3 John J. Vera-Ospina,4,5 Javier Miguel Berthel-Vergara,1 Luz Alba Silvera-Arenas,2† Alfonso J. Rodríguez-Morales.3,4,5,6*

1Infectious Diseases and Infection Control Research Group, Hospital Universitario de Sincelejo, Sincelejo, Sucre, Colombia.
2Programa del Doctorado de Medicina Tropical, SUE Caribe, Universidad del Atlántico, Barranquilla, Colombia.
3Comité de Medicina Tropical, Zoonosis y Medicina del Viajero, Asociación Colombiana de Infectología, Bogotá, Colombia.
4Public Health and Infection Research Group, Faculty of Health Sciences, Universidad Tecnológica de Pereira, Pereira, Risaralda, Colombia.
5School of Veterinary Medicine and Zootechnics, Faculty of Health Sciences, Universidad Tecnológica de Pereira, Pereira, Risaralda, Colombia.
6Universidad Privada Franz Tamayo/UNIFRANZ, Cochabamba, Bolivia.

†In Memoriam.


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Abstract

Canthariasis is a disease of humans caused by the infestation of beetle larvae. It is the second important insectal disease after myiasis. Several species of beetles are reported to cause the disease in gastrointestinal tract, urogenital system, nasal sinuses, ears and faces of mammals. The mealworm beetle, *Tenebrio molitor*, a species of darkling beetle, is a widespread pest that usually feeds on stored grain. The human infestation by this worm is extremely rarely reported, we described a case of *T. molitor* infestation in a AIDS patient in Colombia.

Key words: Canthariasis; Tenebrio molitor; AIDS patient; immunosuppression; infestation; Colombia.

◊This case was previously presented in part at the XXIV Latin American Congress of Parasitology (FLAP 2017), Santiago de Chile, Chile, December 10-14, 2017 (ENT. 2) and at the 18th International Congress of Infectious Diseases (ICID), Buenos Aires, Argentina, March 1-4, 2018 (UMP. 413).

Introduction

Infestations by arthropods would be common than reported. Among them, there is a group that probably is unlikely described in the literature, as is the case of canthariasis

Canthariasis is medically defined as the infestation caused by coleopteran insects or their larvae [1-4]. This is a very rare infestation with several forms of canthariasis, most of them gastrointestinal [4]. It is the second important insectal disease after myiasis [4].

Several species of beetles are reported to cause the disease in gastrointestinal tract, urogenital system, nasal sinuses, ears and faces of mammals [1,4].

The mealworm beetle, *Tenebrio molitor*, a species of darkling beetle, is a widespread pest that usually feeds on stored grain. The human infestation by this worm is extremely rarely reported [2].

For these reasons we report a very rare cause of infestation due to the larvae *Tenebrio molitor* accidentally found in an ulcer of an AIDS patient in Colombia. Clinical case presentation and systematic review of literature.

Case Report

A 32-year-old HIV/AIDS patient, from Sucre, Colombia, severely immunosuppressed (<50 CD4 cells/mm³), concomitant with severe cutaneous Kaposi sarcoma (KS) in lower limbs, and pneumonia due to *Pneumocystis jirovecii* (PJP).

This patient was admitted to an Intensive Care Unit (ICU) at a private center in Sincelejo, Sucre, northern Caribbean coast of Colombia.

He presented ulcers in lower limbs, in which 48 hours after being hospitalized due to multiple opportunistic diseases (including neoplastic and infectious one), was found with a larvae coming out from one ulcer, which was extracted and placed for further identification (Figure 1).
The larva was extracted and subsequently identified, according keys for Coleoptera, as possible *Tenebrio molitor* (Figure 1). The larva was identified and photographed at Universidad Tecnológica de Pereira, Pereira, Risaralda, Colombia. Patient was from a rural area of Sucre department, Colombia. Patient was treated with trimethoprim with a successful evolution.

**Figure 1.** *Tenebrio molitor* isolated from the patient.

**Discussion**

Canthariasis is a rare ectoparasitic condition [1-4]. Several forms of canthariasis have been described in the previous reports [4]. Thus far, canthariasis caused by adults of the family *Tenebrionidae* are rarely reported [2]. Only one previous case is known. Adults of the family Scarabaeidae in Sudan, causing enteric cantheriasis by cadelle beetle, *Tenebroides mauritanicus* have been reported [4]. And large carpet beetle, *Trogoderma versicolor* and nasal cantheriasis by black carpet beetle, *Attagenus piceus* in USA, otic cantheriasis by adult *Crasydactylus punctatus* (Coleoptera; Carabidae) in Oman and facial cantheriasis by the drugstore beetle, *Stegobium paniceum*, and a beetle of the genus *Trogoderma* in Jordan have been also reported [3-5]. Besides, adult dung beetles were recovered from stool samples of 18 children from rural northeast India [4].

Among the reported cases of canthariasis, most of them were gastrointestinal [1-4]. No previous cases in HIV/AIDS patients have been reported, neither associated to skin ulcers [1-4]. Even in HIV/AIDS patients, report of myiasis is rare [6,7].

For canthariasis risk, beetles could be found in houses where dried grains are stored, especially in rural areas as our case, particularly this is case for *T. molitor* [8,9]. It is believed that adult *Tenebrio* laid eggs on the skin of our patient. Females lay eggs and larvae develop within few weeks at necrotic tissue. In fact, scars attract the beetle and its larvae are fed on a variety of dried plant or animal matter and are known to scavenge on carcasses of dead animals. Further research would be expected as also to consider canthariasis as a potential infestation in endemic areas and immunosuppressed patients.

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**References**


**Corresponding Author:** Alfonso J. Rodríguez-Morales. Public Health and Infection Research Group, Faculty of Health Sciences, Universidad Tecnológica de Pereira, Pereira, Risaralda, Colombia. Email: arodriguezm@utp.edu.co

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