

Cutaneous myiasis caused by *Dermatobia hominis* (Diptera: Oestridae) in a Polish traveller to South America – a case report

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ABSTRACT

Myiasis, an infestation caused by dipteran larvae, commonly known as maggots, is one of the most common parasitic skin disorders in the tropical regions. Authors report a case of cutaneous myiasis caused by *Dermatobia hominis* (Diptera: Oestridae) in a Polish traveller returning from a self-organized trip to South America. Species biology, prophylaxis, and medical implications of this tropical parasitosis are discussed.

(Int Marit Health 2024; 75, 1: 61–63)

Keywords: *Dermatobia hominis*, larvae, myiasis, returning traveller, Poland

INTRODUCTION

Myiasis, an infestation of live vertebrates caused by dipteran larvae, commonly known as maggots, is one of the most common parasitic skin infections in the tropical regions [1]. The human botfly, *Dermatobia hominis* (Linnaeus, 1781) (Diptera: Oestridae), infests people, primates, cattle, dogs, and numerous other wild and domestic mammals and birds. Its larvae are responsible for causing a wide range of symptoms, mainly cutaneous lesions.

D. hominis causes obligatory myiasis, which means the species depends on the host to complete its life cycle. Females deposit eggs on the abdomen of blood-sucking arthropods, which they capture in flight, such as daytime-biting mosquitoes, Muscoidea flies, or ticks (*Amblyomma* spp.) [2–4]. Upon contact with a warm-blooded host, larvae hatch from the eggs attached to an insect and penetrate the host's skin. A small nodule develops around each larva with a central respiratory pore. *D. hominis* larvae feed on tissues and bodily fluids for 5–12 weeks. Mature third-stage larvae

emerge from the skin and fall to the ground to pupate. About a month later, they develop into adults.

The distribution of *D. hominis* is limited to Central and South America, from southern Mexico to northern Argentina. The species is mainly distributed throughout warmer, lowland areas covered with forest [4, 5], and it is the most common cause of myiasis among travellers to this part of the world [1]. Until 2019, there were 108 case reports [6]. An autochthonous Spanish infestation in the rural area of Valladolid, Castilla y León, has been described recently [7]. In Poland, to this day, there have been only two documented reports of myiasis caused by *D. hominis* [8, 9].

CASE REPORT

A 30-year-old female reported a painful erythematous nodule on the left thigh after a 2-week tourist trip to Bolivia, Peru, and Paraguay. During the trip, she visited the jungle. She did not use mosquito nets or repellents throughout her stay in South America. Initially, she was treated topically, and then

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Received: 26.02.2024 Accepted: 19.03.2024

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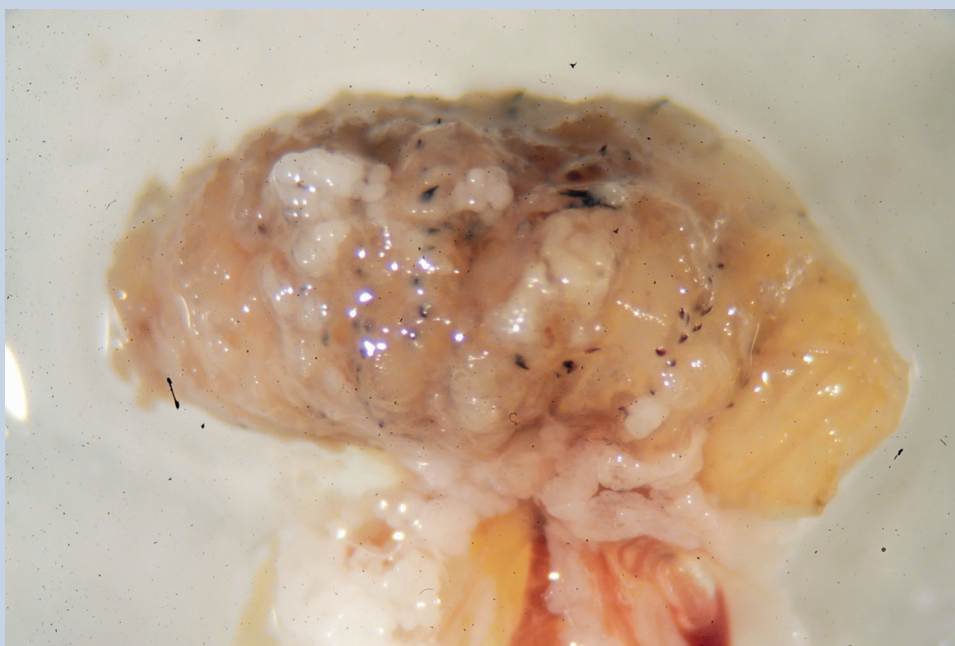


Figure 1. *Dermatobia hominis* removed from the skin of a female returning from a trip to Bolivia

with oral antibiotics (amoxicillin with clavulanic acid and clindamycin) but without improvement. Physical examination showed a tender, erythematous, indurated nodule near the left groin, with a small central ulceration. Left inguinal lymph nodes were enlarged and painful on palpation. Laboratory tests showed no signs of acute inflammation. A small incision was made at the top of the lesion, and the larva was removed with tweezers without complications. The parasite was preserved in formalin and identified based on morphological features as a third-stage larva of *Dermatobia hominis* [3] (Fig. 1).

DISCUSSION

Patients with tumours caused by parasitic flies seek medical attention due to physical and psychological discomfort. Removing larvae is advised to prevent the development of an abscess, cellulitis, or regional lymphadenopathy [10]. Travel to the tropics has become increasingly popular, which means that doctors in non-endemic areas will see a rise in cases of infections caused by parasitic flies. Therefore, it is crucial to raise awareness in the medical community and to educate travellers about the risk of myiasis and the methods to prevent the disease. Myiasis can be prevented by using personal protection measures against mosquito bites, such as applying repellents on exposed skin, sleeping under mosquito nets impregnated with permethrin or deltamethrin, and covering as much of the body as possible with clothes [11]. It is recommended to bear these precautions in mind, as the difficulty of larvae removal depends on its developmental stage. It is easy early on by

applying lateral pressure, but as the larva grows larger, it develops anchoring spines and its anterior part widens [12, 13] (Fig. 1). The second and third stages may require surgical intervention to ensure complete extraction.

ARTICLE INFORMATION AND DECLARATIONS

Ethics statement: Not applicable. The use of biological material in this study did not require review and approval of an Ethics Committee or written informed consent of the patient.

Author contributions: Beata Biernat: conceptualisation, methodology, investigation, writing – original draft; Paweł Gładysz: writing – review & editing; Małgorzata Sulima: resources, writing – review & editing; Katarzyna Sikorska: writing – review & editing.

Acknowledgments: None

Conflict of interest: None declared

Supplementary material: None

Funding: This work received statutory funding from the Department of Tropical Medicine and Parasitology no. 01-30023/0005047, Institute of Maritime and Tropical Medicine, Medical University of Gdańsk.

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