

CASE REPORT



A Rare Case of Labial Myiasis caused by *Dermatobia hominis*

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ABSTRACT

Introduction: The aim of this article is to present a rare case of myiasis caused by *Dermatobia hominis*. Myiasis is a disease caused by invasion of tissues of animals and humans by larval stages of dipterous (2-winged) flies. There are few reports of oral myiasis in the literature, mostly related to *Cochliomyia hominivorax* larvae. We present a case of a 53-year-old man with painful swelling of the left lower lip that was confirmed to be myiasis caused by *D. hominis*. Though more common in tropical and subtropical regions of North and South America, myiasis should be considered in the differential diagnosis of subcutaneous masses among residents or travelers in endemic areas.

Keywords: Case report, *Dermatobia hominis*, Myiasis, Oral manifestation, Parasitic skin disease.

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INTRODUCTION

Dermatobia hominis is a forest-dwelling fly that is found from Mexico to Argentina and is widely prevalent in Brazil, particularly in the Atlantic forest between Bahia and Santa Catarina.¹ After mating, this fly lays its eggs on the body

of other insects (hematophagous or nonhematophagous), which act as mechanical vectors for its distribution, allowing the fly to oviposit without landing on the host. When the vector lands on a warm-blooded animal, the larvae leave the eggs, producing skin furuncles on humans or animals (e.g., cattle, dogs, monkeys, or pumas).^{1,2}

The larva escapes from the egg case and penetrates through intact skin or through a small orifice, such as those caused by the bite of an insect vector or a hair follicle, lodging in the subcutaneous tissue.² The larva develops at the point of entrance without migration and completes its life cycle (approximately 45 days) within a painful subdermal swelling before emerging as a pupate.^{1,2} In humans, uncovered parts are most frequently affected,² such as the ears,³ eyes,^{4,5} legs,⁶ and scalp.^{7,8}

The penetration causes a boil that usually contains a single larva and remains open, enabling the larva to breathe and develop and leading to secondary infection (*Staphylococcus aureus*, *Staphylococcus epidermidis*).^{1,2} The larva feeds on the purulent secretions and necrotic material.¹

Guimarães and Papavero² listed 55 species of arthropods (54 Insecta and one tick) found with *D. hominis* eggs, and Marchi et al⁹ reported four additional mosquito species in the state of São Paulo (Brazil), to which the mosquito *Wyeomyia (Phoniomyia)* in Florianópolis (Santa Catarina, Brazil) (Freitas and Marcondes – unpublished observations) can be added. An effort should be made to collect insects possibly carrying such eggs in the areas in which this patient lived.

CASE REPORT

A 53-year-old man, resident of a subtropical urban area in southern Brazil (Santa Catarina), presented to the Stomatology Clinic at University Hospital with a persistent swelling on the left lower lip for over 1.5 months, complaining of intermittent pain that felt like small bites

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Fig. 1: Clinical aspect of the lower lip before surgery

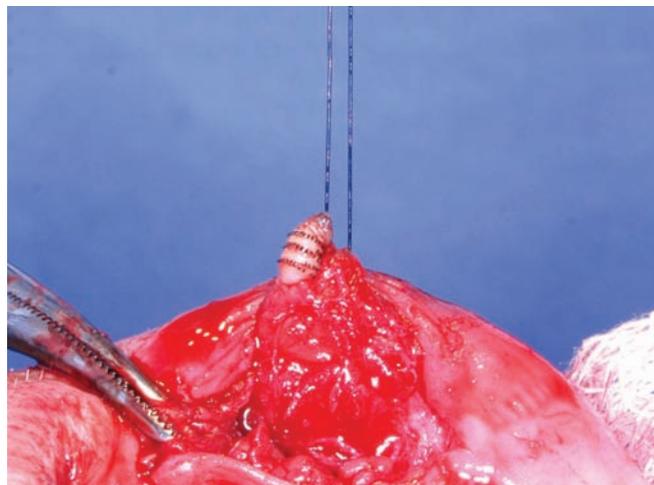


Fig. 2: Externalization of the *D. hominis* larva during surgery

and was more intense at night. He covered the area with adhesive plaster, thinking the swelling was a “berne” (a vulgar Brazilian name for the larva of *D. hominis*), without any change in the appearance or symptoms. He also reported having punctured his lip with a needle 2 days before his presentation, resulting in “black blood” discharge, followed by “water.” The oroscopy showed a 1.5-cm nodule with a fibrous consistency during palpation; a crust over the location of the needle puncture was observed (Fig. 1). The area was slightly erythematous and warm. After local anesthesia and needle aspiration (negative, excluding vascular lesions), surgical dissection was performed through the inferior orbicularis oris muscle. The inferior labial artery was clamped due to its proximity to the lesion. During the attempt to dissect all of the dense fibrous tissue firmly attached to the dermis, externalization of part of a larva (Fig. 2) was subsequently identified by visual inspection as *D. hominis*. The entire surgical specimen was sent to the Laboratory of Oral Pathology at Federal University of Santa Catarina. The histological sections revealed a fragment of mucosa showing an area of granulation tissue with a moderate chronic inflammatory infiltrate and an empty central area (Fig. 3). There were no complications in the postoperative period. The patient at 10-month follow-up reported local paresthesia.

DISCUSSION

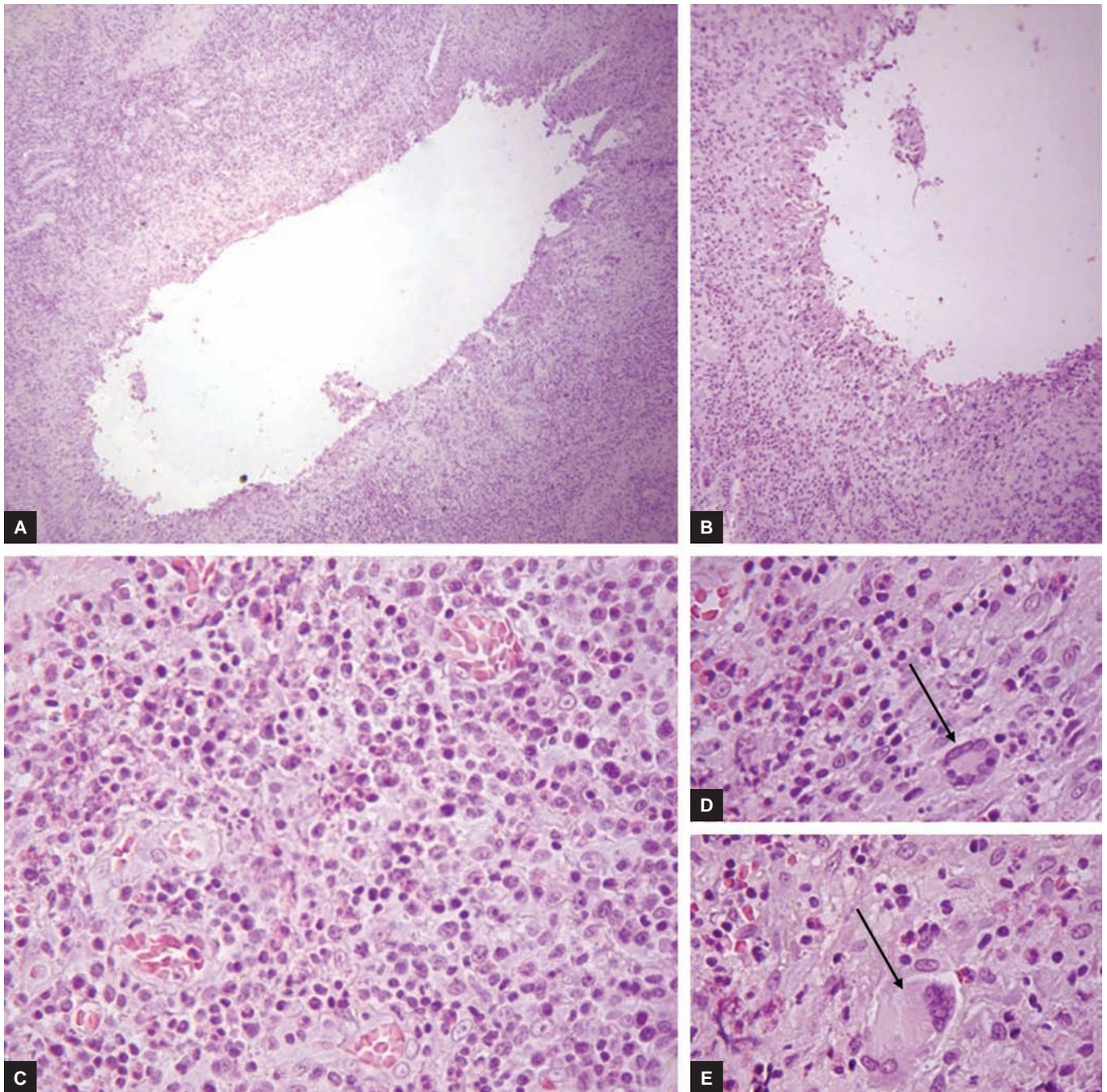
Human infestation with *D. hominis* is usually not markedly harmful, but failure to completely extract the larvae can be complicated by a foreign body reaction, secondary bacterial infection, or secondary granulomas once the acute phase has resolved.^{4,10} An association between systemic inflammation and infestation by several *D. hominis* larvae has been reported.¹⁰

Several techniques and practices have been reported for removing the larva, including occlusion of the orifice

(with adhesive plaster, pork backfat, beeswax, rope tobacco) and application of some substances (ether, chloroform, boiling water obtained from a tobacco roll, mineral oil, liquid paraffin, nail polish). The objective is to kill or weaken the larva by asphyxiation, allowing for its withdrawal by finger pressure^{1,10}; sometimes, the larva leaves the tissue and lodges itself in the material used for occlusion.¹ Surgical enlargement of the orifice and application of lidocaine underneath the larva to force its removal have also been recommended.¹ However, the surgical procedure seems to be the preferred therapeutic option because surgery allows for the complete removal of the larvae and debridement of the cavity.^{10,11} The diagnosis is usually established by seeing the larva, ideally with confirmation of its identity by an expert in parasitology.

Oral myiasis has been more frequently attributed to *Cochliomyia hominivorax*, and other flies are usually associated with poor health (Alzheimer, teeth disease)¹² and multiple larvae.^{13,14} Oral myiasis sometimes has even been fatal.¹⁵ Oral *D. hominis* infestation has rarely been reported,¹⁶ and larvae of this fly have been obtained from the superior lip of a patient in Minas Gerais (Brazil).¹⁷ An infestation of the superior lip in a patient diagnosed in a Manchester hospital was attributed to this fly.¹⁸ However, this patient had only visited Gambia, while *D. hominis* is an exclusively American species.² Additionally, the larva did not have the typical transverse rows of small spines typical for this species and others in the group (Oestridae); however, Calliphoridae,¹⁹ which includes the African species of *Cordylobia* sp.²⁰ and to which such myiasis should most likely be attributed, do not have this feature.

There are several reports of the feasibility of ultrasound²¹⁻²³ or computed tomography³ for examining cutaneous lesions suspected to be abscesses, as a supplemental method to visualize the presence and/or number of larvae.



Figs 3A to E: Histological examination (hematoxylin and eosin stain): (A) Granulation tissue response enclosing a central empty (40×); (B) higher magnification of A showing a cellular connective tissue (×100×); (C) intense inflammatory reaction with predominant presence of mononucleated cells and some eosinophils, as well as neovascularization (400×); (D) and (E) multinucleated giant cells (arrows, 400×)

Several reports have mentioned the use of topical or oral drugs for treating myiasis, such as ivermectin (an antiparasitic, broad spectrum drug that induces muscle paralysis in invertebrates) and nitrofurazone (a topical anti-infective agent with a broad antibacterial spectrum), particularly when the infestation occurs with *Cochliomyia hominivorax*.^{13,14,24} This drug has already been used to treat myiasis due to *D. hominis*,^{5,24} but there is a report of a foreign body reaction produced by the remaining larvae.²¹

CONCLUSION

Reports of human infestation by *D. hominis* larvae are sparse, particularly in the oral region. This condition can affect residents or travelers^{8,25-28} in endemic areas, regardless of age, sex, or social status. In endemic areas, people should be encouraged to use preventive methods, such as insect repellents, protective clothes, and mosquito nets,^{4,18,21,22,28} and to avoid outdoor activities during dusk or dawn.²¹

CLINICAL SIGNIFICANCE

Human infestation in nonendemic areas is difficult to diagnose due to lack of familiarity with the disease.⁸ Currently, with global travel and an increased demand for leisure and adventure in Latin American countries, myiasis should be considered in the differential diagnosis of subcutaneous masses among residents or travelers in endemic areas.

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