

An Unwelcome Vacation Souvenir: Cutaneous Myiasis Caused by *Dermatobia hominis* after Travel to Brazil

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Abstract

With increasing international travel, particularly to tropical regions, clinicians in Europe increasingly encounter imported diseases that are unfamiliar in routine practice. We report a three-year-old girl who developed a painful, progressively enlarging scalp lesion after travel to Brazil. Approximately one week after symptom onset, she received oral ivermectin locally, but the lesion persisted after the family returned to Germany. Examination showed an erythematous, tender, furuncle-like scalp nodule with a small central crusted punctum. Surgical exploration yielded a dead larva, which was identified as *Dermatobia hominis* by morphological examination. This case emphasizes that imported furuncular myiasis should be considered in travelers returning from endemic regions and that complete extraction is required when a larva dies *in situ* and inflammation persists.

Keywords

Dermatobia hominis, Furuncular Eruptions, Insect Bite, Cutaneous Myiasis

1. Introduction

International travel has increased substantially over recent decades, including travel with young children to tropical and subtropical regions. Consequently, clinicians in non-endemic countries increasingly encounter imported infections and parasitic diseases that may be unfamiliar in routine practice. Case series and reviews identify localized furuncular myiasis as a characteristic travel-associated dermatosis, most often caused by *Dermatobia hominis* after exposure in Central or South America and by *Cordylobia anthropophaga* after exposure in sub-Sa-

haran Africa [1]-[7]. Prompt recognition may prevent diagnostic delay, unnecessary antibacterial treatment, and prolonged morbidity. We report a three-year-old girl with furuncular myiasis caused by *D. hominis* following travel to Brazil.

2. Case Report

A previously healthy three-year-old girl was referred to our pediatric surgical unit approximately four weeks after the family returned from Brazil. During the trip, her parents reported an unidentified insect bite to the scalp (day 0). Within several days, the site became erythematous, painful, and progressively swollen. Approximately one week after symptom onset, she was evaluated at a local hospital in Brazil and received oral ivermectin for suspected parasitic infestation. The exact dose, number of doses, and timing were not available in the records summarized for this report. No additional local or systemic treatment before surgery was documented.

After the family returned to Germany, the lesion continued to enlarge. The parents sought further medical attention because of persistent inflammatory swelling. The father reported intermittent movement beneath the lesion, which he had noticed while touching the child's scalp. The child had localized tenderness but remained afebrile and otherwise clinically well; no neurologic abnormalities or systemic signs of infection were present.

Examination showed a localized, erythematous, tender, furuncle-like scalp nodule with a small central crusted punctum (Figure 1). Serous discharge and a visible spiracle were not documented at the time of examination. In view of the travel history and reported subcutaneous movement, furuncular myiasis due to *D. hominis* was suspected.



Figure 1. Painful erythematous scalp nodule with a small central crusted punctum.

Because of persistent inflammation and concern for a retained larva, surgical exploration was performed under general anesthesia. After local shaving and sterile preparation, the lesion was incised. A dead larva was identified in the wound cavity and removed completely (Figure 2), followed by careful curettage of inflammatory and necrotic tissue and thorough irrigation; the wound was closed primarily. The timeline of events is shown in Table 1.

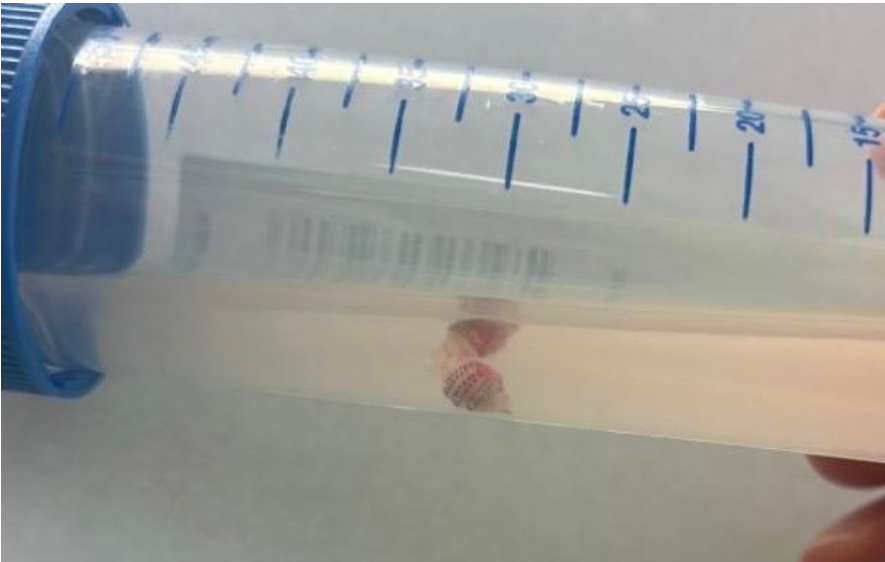


Figure 2. Extracted larval specimen of the American human botfly (*Dermatobia hominis*). Morphological identification is supported by concentric rows of backward-directed cuticular spines and the posterior respiratory spiracles.

Table 1. Clinical timeline (relative to the reported scalp bite).

Time	Clinical event
Day 0 (Brazil)	Parent-reported bite by an unidentified insect on the scalp.
Within several days	Progressive erythema, localized pain, and swelling at the bite site.
Approximately 1 week after symptom onset	Evaluation at a local hospital in Brazil; oral ivermectin administered for suspected parasitic infestation. The exact dose, number of doses, and timing were not available in the records summarized for this report; no additional local or systemic treatment before surgery was documented.
After return to Germany	Continued enlargement and inflammation; the father reported intermittent movement beneath the lesion.
Approximately 4 weeks after return	Referral to pediatric surgery and operative exploration; a dead larva was removed completely.

The extracted specimen was submitted to the microbiology service. Morphological examination identified *D. hominis* on the basis of the characteristic concentric rows of backward-directed spines and posterior spiracular structures. The

postoperative course was uneventful. The patient was discharged on the day of surgery with recommendations for routine outpatient wound care. Wound healing was uncomplicated, and the sutures were removed after complete epithelialization.

3. Discussion

Furuncular myiasis is a well-described travel-associated dermatosis. Traveler cohorts and recent reviews show that *D. hominis* is a leading cause after exposure in Central and South America and that diagnostic delay is common in non-endemic settings [1]-[7]. Pediatric surgeons, dermatologists, and emergency physicians should therefore recognize its characteristic presentation.

Myiasis is the infestation of living vertebrate tissue by dipteran larvae [1] [7]. Cutaneous disease is classified as furuncular, wound, or migratory myiasis. Localized furuncular disease is the form most often encountered in otherwise healthy returning travelers [1] [3] [5].

Among the species causing human furuncular myiasis, *C. anthropophaga* predominates in sub-Saharan Africa, whereas *D. hominis* is endemic from Mexico through Central and South America [1]-[4]. The adult female *D. hominis* captures a hematophagous arthropod, commonly a mosquito, and attaches eggs to its abdomen. During a subsequent blood meal, host body heat triggers hatching; the larvae penetrate through the bite site or intact skin and develop within a subdermal cavity for approximately 5 - 10 weeks [1] [2] [4].

Patients typically present with a slowly enlarging, painful erythematous nodule resembling a furuncle. A central punctum serves as the respiratory opening; intermittent serous or serosanguineous discharge, pruritus, sharp pain, and a sensation of movement provide additional diagnostic clues [1] [2] [5]. In this patient, the central crusted punctum and the father's report of movement supported the diagnosis, whereas discharge and a visible spiracle were not documented. Morphological identification relies on larval stage-specific features, including backward-directed cuticular spines and posterior spiracles [1] [2] [8].

Treatment aims at complete larval removal without fragmentation. In viable infestations, petroleum jelly or another occlusive dressing can obstruct the breathing pore and encourage the larva toward the surface for forceps extraction; widening the punctum or local anesthesia may facilitate removal [1] [2] [5]. Occlusion with bacon has also been reported [9]. Surgical exploration is appropriate when conservative extraction fails, the diagnosis is uncertain, inflammation is pronounced, or the larva has died *in situ* [1] [5] [10].

In the present case, the larva was dead after prior ivermectin treatment. Ivermectin may have contributed to larval death, but the temporal association does not establish causality. Oral ivermectin is not routinely recommended for uncomplicated furuncular myiasis because death of the larva within the lesion may provoke a marked inflammatory reaction [1]. Retained larval material likely sustained the foreign-body inflammation and prompted definitive surgical removal. Sec-

ondary bacterial infection may occur, but antibiotic therapy should be reserved for clinical evidence of superinfection [1] [10].

In non-endemic settings, *D. hominis* infestation may be mistaken for a bacterial abscess, inflamed epidermoid cyst, insect-bite reaction, infected hematoma, or foreign-body granuloma [2] [5] [6] [11]. Travel history, a central punctum, and reported or observed movement are the principal clues. Dermoscopy or point-of-care ultrasonography can help when the diagnosis is uncertain. After extraction, review of an intact specimen by an experienced microbiology or parasitology service usually permits morphological identification; molecular testing can assist when morphology is inconclusive [1] [2] [7]. Prognosis is excellent after complete removal. Rarely, scalp infestation in young children has caused intracranial involvement, underscoring the importance of prompt diagnosis and definitive treatment [8] [12].

4. Conclusion

Human botfly (*D. hominis*) infestation should be considered in a traveler returning from Central or South America with a persistent, tender, furuncle-like nodule, particularly when a central punctum or subcutaneous movement is present. In this patient, the travel exposure, progressive pain and swelling, central crusted punctum, and reported movement supported the diagnosis. Complete removal is definitive, and surgical exploration is safe and effective when the larva is dead or retained and inflammation persists.

Author Contributions

L.M. conducted the literature review, compiled the clinical case, and wrote the original draft of the manuscript. D.S. was responsible for the clinical management of the patient and the family, performed the clinical examination, and participated in the surgical treatment. T.M. participated in the clinical and surgical management of the case and supervised the work. All authors contributed to the review and editing of the manuscript and read and approved the final version.

Ethics and Consent

Written informed consent for publication of the clinical details and accompanying images was obtained from the patient's legal guardians. Under institutional policy, formal ethics committee approval for a single anonymized case report was not required.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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