

Botfly myiasis: a case report

Ken G. Ofordeme, MD;^{*} Linda Papa, MD, MSc;^{†‡} Daniel F. Brennan, MD^{†‡§}

ABSTRACT

Cutaneous infestation by the human botfly, *Dermatobia hominis*, results in furuncular myiasis. This condition is endemic to the forested areas of Mexico, Central and South America. However, because of widespread travel, furuncular myiasis has become more common in North America. Misdiagnosis and mismanagement can occur owing to limited awareness of the condition outside endemic areas. To our knowledge, there is only a single report of botfly myiasis in the recent emergency medicine literature, which is surprising since the emergency department is likely to be the place many patients with this condition first seek attention. We present and discuss the case of a 50-year-old man with furuncular myiasis acquired in Belize. Parasitic infestation should be included in the differential diagnosis of a new skin lesion in patients who have travelled to endemic areas.

Key words: botfly, myiasis, infestation, furuncular myiasis

RÉSUMÉ

L'infestation cutanée par l'œstre humain, *Dermatobia hominis*, cause une myiase furonculeuse. Le problème est endémique dans les régions boisées du Mexique, de l'Amérique centrale et de l'Amérique du Sud. À cause des voyages généralisés, la myiase furonculeuse s'est répandue en Amérique du Nord. Il peut y avoir erreur de diagnostic et de traitement parce que le problème est peu connu en dehors des régions endémiques. Sauf erreur, on trouve un seul rapport de myiase causée par l'œstre dans les récentes publications sur la médecine d'urgence, ce qui est étonnant puisque le service d'urgence est probablement le premier endroit vers lequel se tourneront de nombreux patients atteints de ce problème. Nous présentons et décrivons le cas d'un homme de 50 ans atteint d'une myiase furonculeuse acquise au Belize. Il faudrait inclure l'infestation parasitaire dans le diagnostic différentiel d'une nouvelle lésion cutanée chez les patients qui ont voyagé dans des régions endémiques.

Introduction

Furuncular myiasis, a form of cutaneous larval infestation, is caused by *Dermatobia hominis*, the human botfly.¹ Although “bot” means “boil-like lesion,” this is a misnomer since the lesion is not a true furuncle.² Reports of this in-

festation are uncommon in North America and the condition is typically seen in travellers returning from endemic areas of Mexico, South and Central America. We present a case of furuncular myiasis to highlight an unusual cause of an abscess-like lesion seen in the emergency department (ED).

From the *Department of Emergency Medicine, Emergency Medicine Residency Program, University of Florida Shands Jacksonville, Jacksonville, Fla., the †Department of Emergency Medicine, Emergency Medicine Residency Program, Orlando Regional Medical Center, Orlando, Fla., the ‡Department of Emergency Medicine, University of Florida College of Medicine, Gainesville, Fla., and the §Department of Clinical Sciences, Florida State University College of Medicine, Orlando Campus, Tallahassee, Fla.

Received: Mar. 2, 2007; revisions received: May 14, 2007; accepted: May 14, 2007

This article has been peer reviewed.

Can J Emerg Med 2007;9(5):380-2

Case report

A 50-year-old man presented to our ED in the spring of 2006, following a recent trip to the jungles of Belize. He recalled having been bitten by many different insects, most recently about 2 weeks prior to presentation. One bite on his left upper eyelid persisted and slowly enlarged to become an erythematous papule. The lesion was mildly pruritic, especially at night. He reported a central pore with occasional serous discharge that developed over the 2 days before his presentation. The patient did not have any constitutional symptoms.

On examination, a 2-cm erythematous nodule with a central pore was present on his left upper eyelid. There was no chemosis, no conjunctival injection and the extraocular movements were normal. The crust over the central pore was removed, revealing occasional pulsatile movement within the lesion. Given the fragile location, an ophthalmology consultation was obtained. Incision and removal of the contents of the lesion was recommended. This procedure was performed electively the following day by a private ophthalmologist. The diagnosis was confirmed by visual inspection of the extracted larva (Fig. 1).

Discussion

Myiasis is the invasion of subcutaneous tissues of a vertebrate host by the larvae of the dipterous (2-winged) flies. In humans, this infestation most commonly manifests as furuncular myiasis and is due to the human botfly, *Dermatobia hominis*.³ The human botfly is endemic to the tropical regions of the New World, including Mexico, Central and South America, between latitudes 25°N and

32°S.^{1,2} Other insects including the African tumbu fly (*Cordylobia anthropophaga*) and the horse botfly (*Gasterophilus intestinalis*) can cause similar forms of cutaneous myiasis.³

The human botfly has an unusual life cycle involving an egg transfer process called phoresis.⁴ The 1.5-cm bluish-grey adult female fly deposits her eggs on the surface of a captured hemotophagous insect, usually a mosquito or fly.⁵ This vector insect passes the eggs to the skin of the secondary host. Here, the elevated temperature stimulates the eggs to release the 1-mm botfly first-stage larvae, which, within minutes, will penetrate the human host's skin, often painlessly.⁴ The first-stage larvae molt twice over 4–18 weeks, and a furuncle-like lesion develops, with a central pore that provides air for the maggot.⁴ During the second and third larval stages, as the maggot feeds and grows, symptoms include a sensation of movement within the lesion, itching and sharp pain (usually nocturnal).^{1,2} Secretions may be seen exiting the central pore, and occasionally the larva itself can be visualized. In the natural lifecycle, the 18–25-mm third-stage larvae exits painlessly from the wound and pupates in the soil for 27–78 days, after which the adult fly emerges to complete the cycle.^{4,5} The human host's wound usually heals rapidly and without complications. Lesions commonly affect exposed skin areas, but the palpebral location we describe occurs in less than 5% of cases.^{4,5}

As travel to endemic areas increases, a growing number of patients with this condition will be seen by emergency physicians in North America. Awareness of the diagnosis is important to differentiate it from other lesions, such as infected insect bites, abscesses and sebaceous cysts. Other exotic illnesses such as tungiasis, cutaneous larva migrans or cutaneous leishmaniasis may also affect travellers. The diagnosis of botfly is usually made clinically but has been aided by visualization of the presence and number of larvae via ultrasound,¹ CT scan and magnetic resonance imaging.³ The diagnostic use of ultrasound² is especially attractive given the increasing ED use of this modality for examining cutaneous lesions suspected to be abscesses.

Human infestation by *Dermatobia hominis* is usually not harmful, but failure to completely extract the larvae can be complicated by foreign body reaction or secondary bacterial infection. There are a number of reports of efforts to suffocate and force the exit of the larvae with such things as beeswax, bacon, chewing gum and petroleum jelly.² Manual or mechanical extraction have also been described.^{6,7} However, surgery may be preferable as it consistently allows for complete removal of the larvae and debridement of the cavity.² Preventative methods such as in-

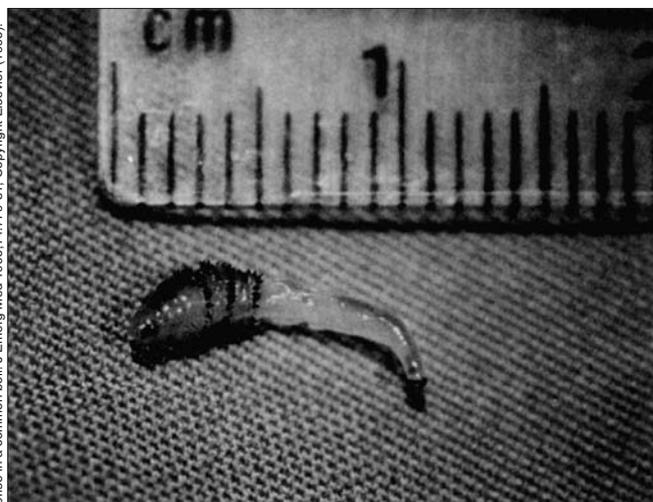


Fig. 1. *Dermatobia hominis* larva extracted from a cutaneous lesion.

sect repellants, protective clothing and mosquito nets should be advocated for travellers to endemic areas.

Conclusion

Our case illustrates the need for emergency physicians to consider parasitic infestation in patients with a new cutaneous mass. The travel history, description of the progress of the lesion and the characteristic central pore serve as important clues. Ultrasound may be useful for visualizing larvae within lesions that were initially thought to be simple furuncles.

Competing interests: None declared.

References

1. Quintanilla-Cedillo MR, Leon-Urena H, Contreras-Ruiz J, et al. The value of doppler ultrasound in diagnosis in 25 cases of furunculoid myiasis. *Int J Dermatol* 2005;44:34-7.
2. Hohenstein EJ, Buechner SA. Cutaneous myiasis due to *Dermatobia hominis*. *Dermatology* 2004;208:268-70.
3. Boruk M, Rosenfeld RM, Alexis R. Human botfly infestation presenting as peri-auricular mass. *Int J Pediatr Otorhinolaryngol* 2006;70:335-8.
4. Denion E, Dalens PH, Couppié P, et al. External ophthalmomyiasis caused by *Dermatobia hominis*. A retrospective study of nine cases and a review of the literature. *Acta Ophthalmol Scand* 2004;82:576-84.
5. Bangsgaard R, Holst B, Krogh E, et al. Palpebral myiasis in a Danish traveler caused by the human bot-fly (*Dermatobia hominis*). *Acta Ophthalmol Scand* 2000;78:487-9.
6. Johnston M, Dickinson G. An unexpected surprise in a common boil. *J Emerg Med* 1996;14:779-81.
7. Boggild AK, Keystone JS, Kain KC. Furuncular myiasis: a simple and rapid method for extraction of intact *Dermatobia hominis* larvae. *Clin Infect Dis* 2002;35:336-8.

Correspondence to: Dr. Daniel F. Brennan, Department of Emergency Medicine, Orlando Regional Medical Center, 1414 Kuhl Avenue, Orlando FL 32806; Daniel.Brennan@orhs.org