

Unusual Botfly Skin Infestation

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Abstract

Myiasis, the infestation of humans and animals with fly larvae, is observed in tropical, lowland areas. Dermatobia hominis is a common cause of cutaneous human infestation in these areas. Patients often present with a furuncular lesion on the extremities, back, or scalp.

We report a case of furuncular myiasis in a patient returning from a trip to South America. We will discuss the life-cycle of D. hominis and the clinical findings important in the diagnosis of myiasis.

Introduction

The infestation of humans and warm-blooded animals with fly larvae may be cutaneous, internal, or gastrointestinal. Cutaneous forms of myiasis include wound involvement and boil-like, furuncular myiasis. Several species of flies are responsible for furuncular myiasis in humans. In Central and South America, *Dermatobia hominis* infestation is the most common, although *Cuterebra* and *Cordylobia anthropophaga* may also cause myiasis.¹ Though furuncular myiasis is usually observed in the warm, lowland forests in Africa and Central and South America, global air travel has allowed for the presentation of cases of myiasis in areas where it is not classically found.²

Case Report

A 70-year old male was seen for two oozing, erythematous lesions on his forearms. The lesions developed two weeks after his return from a trip to Peru. He did not recall any significant insect bites and did not swim in any rivers while on his trip. The patient reported no ill contacts and did not have any constitutional symptoms. On physical examination, a 1.0 cm lesion with a central sinus tract oozing serosanguinous fluid was observed on the patient's right and left forearms. The patient was started on a one-week course of cephalexin. Culture of the lesion grew out a rare bacillus, interpreted as a contaminate.

At one-week follow-up the lesions had not resolved. Punch biopsies were performed at the sites of the lesions and larvae were removed. Specimens were sent for pathologic analysis. The lesions subsequently healed with no signs of infection.

Discussion

In Central and South America, *Dermatobia hominis* is one of the most common causes of furuncular myiasis in humans. Humans, however, are an accidental host of

the fly larvae, with livestock animals being the usual target of infestation.³ Female *D. hominis* botflies attach 15-30 eggs to the abdomens of various species of blood-sucking insects, including mosquitoes and ticks.⁴ When the biting insect lands on a warm blooded animal, the increase in surrounding temperature causes the eggs to hatch and the first stage larva drop off the insect. The larvae enter the human host's skin through hair follicles or breaks in the skin. The fly larvae mature through their second and third larval stages, or instars, for 4-14 weeks in the skin. During this time, an erythematous nodule with a central punctum for the larval breathing tube develops. The third instar exit the skin through the central opening and pupate in the soil.⁵ The botfly life-cycle is completed in about 3-4 months.

Clinically, the furuncular nodules resulting from *D. hominis* infestation may be confused for bacterial

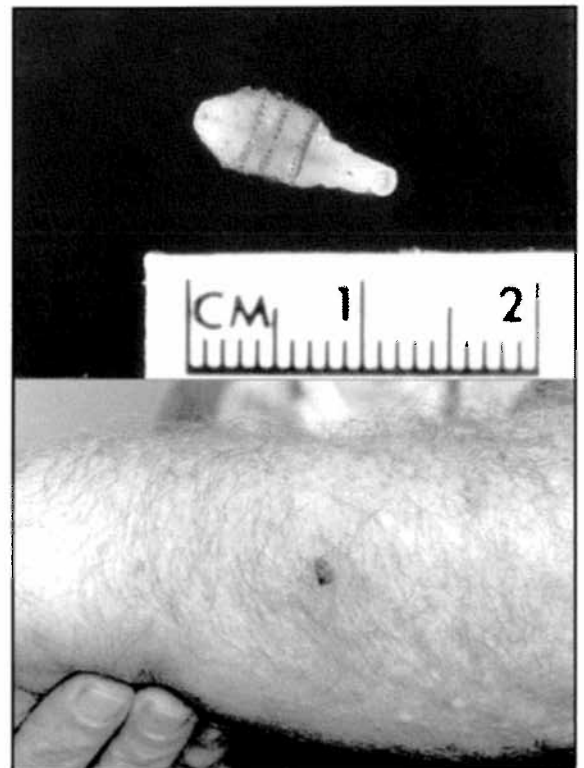


Figure 1.— (top) Flask-shaped botfly larva extracted from skin lesion. Note the characteristic rows of large, dark-brown spines encircling the organism. (bottom) Pyogenic granuloma (exuberant granulation tissue) on the forearm.

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infection, leishmaniasis, or dracunculiasis in early presentation.² These lesions initially appear as erythematous areas resembling an insect bite. Eventually the erythematous region enlarges and a central punctum often appears. Serosanguinous fluid may ooze from the lesion. Furuncles are generally found in exposed areas including the extremities, back, neck, and scalp.

There are various suggested methods of extracting the botfly larvae. Procedures include the application of a sealing ointment (Vaseline) or a slab of bacon over the breathing tube to cause the outward migration of the larva. Alternatively, the injection of lidocaine under the larva may cause enough pressure to force the instar out of the skin. The method used in this case was a punch biopsy near the central punctum and the extraction of the larva using a hemostat.⁶ This method is preferred in the late stages of larval development due to the growth of backward facing spines which cause difficulty in removal of the larva from the skin.

Grossly, the botfly larva is flask-shaped with a breathing tube on one end and oral hooks on the other. The cuticle, composed of chitin, is covered with widely-spaced, large spines. Histologically, the cuticle stains red on hematoxylin-eosin preparations. Striated muscle is located beneath the cuticle layer.¹ The tissue surrounding the larva typically demonstrates a foreign body granulomatous reaction. A diagnosis of furuncular myiasis may be made based upon the patient's history and physical examination, as well as through pathologic examination of the extracted larva.

Conclusion

Myiasis is typically found in Africa and Central and South America. The presentation of a case of myiasis in Hawaii serves as a good example of the impact of global air travel on the spread of disease throughout the world. Because of this, it is increasingly important for physicians to be familiar with conditions that are not necessarily endemic to their area.

References

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1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

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