

# Cutaneous myiasis due to *Dermatobium hominis* in Winnipeg

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Cutaneous myiasis is an uncommon infestation in North America, with most cases arising in travelers who have recently returned from Central and South America. The majority of cases are due to *Dermatobium hominis* and present with a furunculoid nodule with local inflammation. The case reported is of a 57-year-old woman with cutaneous myiasis contracted in Winnipeg, Manitoba.

**Key Words:** *Dermatobium hominis*; Larvae; Myiasis

## Cas de myiase cutanée due à *Dermatobium hominis* à Winnipeg

**RÉSUMÉ :** La myiase cutanée est une affection rare en Amérique du Nord et elle se rencontre surtout chez les voyageurs revenus depuis peu de l'Amérique centrale et de l'Amérique du Sud. La plupart des cas sont dus à *Dermatobium hominis* et ils se manifestent par un nodule furonculoïde et de l'inflammation locale. Voici le cas d'une femme de 57 ans, atteinte de myiase cutanée contractée à Winnipeg.

Myiasis is an infection of living vertebrate tissue by the larvae of dipterous (two-winged) flies. There are several manifestations of these infections, including cutaneous, gastrointestinal, urogenital, nasopharyngeal and ophthalmomyiasis. The most common form is the cutaneous infection, which can present as furunculoid, subcutaneous infestation with tunnel formation, wound infestation and subcutaneous infestation with migratory swelling. Although it is endemic to tropical regions, there have been reports of infections in North America (1,2). The present report describes a rare case of cutaneous myiasis acquired in Manitoba, followed by a discussion of myiasis and the particular subspecies involved in this case.

### CASE PRESENTATION

A 57-year-old woman presented to the emergency department on August 28, 2001 complaining of an insect bite to her left cheek. This bite had occurred two weeks earlier while the patient was in her backyard in Winnipeg, Manitoba. The patient recalled being bitten by a mosquito, wasp or bee. For the following four days, the patient sought no treatment. A gradual swelling and redness developed over this time period. On the fifth day, the patient went to her general practitioner, who prescribed erythromycin.

Despite taking antibiotics, the redness and swelling continued to worsen and approximately five days after her first visit, she reattended her physician. On this visit, the physician stopped the treatment with erythromycin and prescribed penicillin by mouth.

During the five days after her visit, the patient reported a serosanguinous discharge coming from a small punctum at the site of the original sting.

Following the change in antibiotics, the erythema continued to progress, as did the discharge. Two days before her presentation to the emergency department she complained of a soreness developing on the globe on the left side.

At the time of assessment in the emergency department, the patient had a left periorbital cellulitis extending to the left cheek. The skin of the upper cheek was excoriated, erythematous and edematous. A white blood cell count was  $11.3 \times 10^9$  L. Of note, there was a corneal abrasion to the left eye, which responded to appropriate treatment. There was a definable punctum over the point of maximal swelling. A small insect larva appeared to be protruding intermittently from the punctum on her cheek. On squeezing her cheek on both sides of the punctum, a white insect larva approximately 10 mm in length was expressed through the punctum onto the cheek skin, as was some whitish purulent material. The larva was then sent to the microbiology laboratory, where it was identified as being of the *Dermatobium* species. Infectious diseases specialists were consulted for advice on antimicrobial therapy.

Upon removal of the larva, the patient's cellulitis completely resolved.

### DISCUSSION

*Dermatobium hominis*, an obligate parasite, is a member of the oestrodiæ superfamily, the oestridæ family and the cuterebriæ subfamily (3). It is also known as the human botfly and is endemic to tropical Mexico, South America, Central America and Trinidad. The lifecycle of the fly is quite interesting in that the female of the species will seize a blood-sucking insect, such as a mosquito, and place eggs on the abdomen of the carrier.

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When the mosquito bites a warm-blooded animal, the local heat induces the larva to hatch and drop to the skin as a stage I larva, or first instar. The larva penetrates the skin of the animal directly, or through a defect produced by the insect bite, and develops in the subcutaneous tissue. The larva proceeds through a second and third stage, or instar, in the subcutaneous tissue and then, after five to 10 weeks, the third instar emerges and drops to the ground where it forms flies over the span of two to three weeks.

Cutaneous myiasis is most often seen on areas of the body that are exposed, with *Dermatobium hominis* showing preference for the head, arms and legs (4-6). The principle manifestations of infestation are erythema, pruritis, edema and a furuncular nodule with a punctum in the area of the developing larvae. A local inflammatory reaction is almost always seen. Pain can be an associated finding. A discharge is commonly seen, which may be serous, serosanguinous or seropurulent. Secondary bacterial infection may also occur with systemic signs of infection, such as fever, malaise and lymphadenopathy.

Treatment of an infestation of *Dermatobium hominis* is complete removal of the larvae. Manual expression, as in the present case, may be adequate, but surgical excision is preferred to ensure the removal of the larvae in its entirety (7). Any leftover portion of the larvae will incite further inflammation. The surgical excision may be performed under local analgesia with relative ease. Some authors have suggested that the infiltration of lidocaine is enough to express the larvae (8,9). Another option for removal of the larvae is the occlusion of the punctum. This procedure forces the larvae to surface in order to avoid asphyxiation. Various substances, such as petroleum jelly, raw meat or fat (9-11), and gum have been tried. The main problems with this technique are that the larvae may asphyxiate without sur-

facing or the larvae may take up to 24 h to surface. If a secondary bacterial infection occurs, antibiotics will be needed.

## CONCLUSION

Although uncommon in North America, the frequency of travel to tropical and exotic climates may make cutaneous myiasis a condition that could be seen from time to time. Furthermore, the above case report demonstrates that this uncommon and unusual infestation is a possibility in Canada.

## REFERENCES

1. Rao R, Nosanchuk JS, Mackenzie R. Cutaneous myiasis acquired in New York State. *Pediatrics* 1997;99:601-2
2. Baird JK, Baird CR, Sabrosky CW. North American cuterebrid myiasis. Report of seventeen new infections in human beings and review of the disease. *J Am Acad Dermatol* 1989;21:763-72.
3. Mathieu EM, Wilson BB. Myiasis. In: Mandell GL, Bennett JE, Dolin R, eds. *Principles and Practice of Infectious Diseases*, 5th edn. New York: Churchill Livingstone 2000:2976-9.
4. Tsuda S, Nagaji J, Kurose K, Miyasato M, Sasai Y, Yoneda Y. Furuncular cutaneous myiasis caused by *dermatobium hominis* larvae following travel to Brazil. *Int J Dermatol* 1996;35:121-3.
5. Jelinek T, Nothdurft HD, Rieder N, Löscher T. Cutaneous myiasis: review of 13 cases in travellers returning from tropical countries. *Int J Dermatol* 1995;34:624-6.
6. Gordon PM, Hepburn NC, Williams AE, Bunney MH. Cutaneous myiasis due to *Dermatobia hominis*: a report of six cases. *Br J Dermatol*. 1995;132:811-4.
7. Rosen J, Neuberger D. Myiasis *Dermatobia hominis*, linn. Report of a case and review of the literature. *Cutis* 1977;19:63-6.
8. Loong PT, Lui H, Buck HW. Cutaneous myiasis: a simple and effective technique for extraction of *Dermatobium hominis* larvae. *Int J Dermatol* 1992;31:657-9.
9. Nunzi E, Rongioletti F, Rebora A. Removal of *Dermatobia hominis* larvae. *Arch Dermatol* 1986;122:140.
10. Brewer TF, Wilson ME, Gonzalez E, Felsenstein D. Bacon therapy and furuncular myiasis. *JAMA* 1993;270:2087-8.
11. Bernhard JD. Bringing on the bacon for myiasis. *Lancet* 1993;342:1377-8.