SHORT REPORT: CUTEREbra CUTaneous MYIASIS, New Hampshire, 2004

Rachel N. Plotinsky,* Elizabeth A. Talbot, and Harry Davis

Epidemic Intelligence Service, Office of Workforce and Career Development, Centers for Disease Control and Prevention, Atlanta, Georgia; New Hampshire Department of Health and Human Services, Bureau of Disease Control and Laboratory Sciences, Concord, New Hampshire; Dartmouth College, Hanover, New Hampshire; Franklin Pierce College, Rindge, New Hampshire

Abstract. We describe a cluster of patients in New Hampshire with Cuterebra cutaneous myiasis.

INTRODUCTION

Although myiasis, or invasion of tissues by immature flies, is uncommon among humans in the United States, Cuterebra (rodent or rabbit botfly) are endemic to certain areas of North America, particularly the northeastern United States and southeastern Canada and are known to cause myiasis among small animals.1 Approximately 60 cases of myiasis caused by botflies endemic to the United States and Canada have been reported in the literature. We describe four patients with Cuterebra myiasis in New Hampshire.

CASE REPORTS

Patient 1. A 44-year-old man presented to his health-care provider in early September 2004 with a 7-mm raised erythematous lesion with central necrosis, located on his left thigh. The patient was administered a dose of cefazolin intramuscularly while in the health-care provider's office for an infected insect bite and was prescribed a course of oral cephalaxin. The patient also began applying wet-to-dry dressings to the lesion. One week later, he returned to his health-care provider because a small larva had emerged from the lesion. Erythema around the lesion had improved. The patient was instructed to continue cephalaxin. The larva was determined by an entomologist to be a Cuterebra larval instar, or immature Cuterebra.

Patient 2. A 4-year-old boy was examined in late August 2004 by a pediatrician because his mother was concerned about what she thought was an insect bite on his left cheek. She had been able to express drainage from the lesion. The physician prescribed application of bacitracin ointment to the lesion. Three days later, the child's parents noticed that the lesion was pulsating and used tweezers to remove a larva from the lesion. At a follow-up appointment 2 weeks later, the area around the lesion was pruritic and swollen, but improved.

Patient 3. An 8-year-old girl visited her pediatrician in mid-August 2004 because she had two raised erythematous lesions on her right cheek with areas of excoriation consistent with insect bites. Hydrocortisone cream was recommended. The day before her follow-up visit 11 days later, her mother noticed a moving white spot in the center of one lesion; the other lesion had nearly resolved. The child's father squeezed the lesion, and a white larva was extruded. At the follow-up visit, the child had a 15-mm indurated area on her right lower cheek with a central opening. No fluctuance or drainage was apparent. The child was prescribed a course of amoxicillin-clavulanate. The larva was identified by an entomologist as a Cuterebra larval instar (Figure 1).

Patient 4. A 41-year-old woman was first examined in a local emergency department in early August 2004 because of a lump on the right side of her neck. She was prescribed oral cephalaxin for a presumed insect bite or bacterial infection. On follow-up at her primary care provider's office, an erythematous area with a central circular opening near her occiput on the right side was noted, with scant drainage of serosanguinous fluid. Drainage from the lesion was cultured, and the patient was continued on cephalaxin. Five days later, the patient returned, complaining that the lesion continued to drain and now was more painful. Culture performed at the previous visit had no growth of bacteria. The physician incised the lesion but was unable to fully drain it. The patient was then referred to a dermatologist.

At the visit with the dermatologist, the physician noted motion beneath the skin surface at the site of the lesion. Myiasis was suspected, and the dermatologist excised the larva. The patient continued on cephalaxin and was instructed to apply bacitracin to the lesion. At a follow-up appointment 2 weeks later, the area around the lesion was pruritic and swollen, but improved.

DISCUSSION

All patients described in this report acquired Cuterebra cutaneous myiasis in New Hampshire. None had traveled outside of the state in the 3 months preceding symptom onset. Cuterebra species are endemic to New Hampshire, and natural hosts are lagomorphs (e.g., rabbits and hares) and rodents.1 When botfly eggs that have been laid near the dwelling places of these hosts hatch, the larvae invade the tissue of the host species. After limited development, the larva exits the host tissue and pupates in the soil.2 In cases of human infection, hatched larvae can enter broken or even intact skin, or eggs can be deposited into intact skin by adult flies.3,4 Within the host, the larva completes three developmental stages, or instars, and eventually leaves the host to continue its development into pupa and adult fly. The resultant inflammation often appears as an abscess.

These patients share features of previously described myiasis acquired in North America: human cases often present in the late summer and fall months, and the locations of lesions among these four patients reflect the most common areas affected: face, scalp, neck, shoulders, and chest.5 All had fu-
runcular, or subcutaneous, myiasis, one of the most common forms of human myiasis. All patients visited medical providers at least twice, and all were placed on either topical or oral antibiotics. Of these four patients, three had lesions from which larvae emerged spontaneously or were extracted by family members and did not require excision of the lesion. Although *Cuterebra* myiasis is typically self-limited, the majority of affected persons choose to have the larva removed if it does not emerge spontaneously. This can be done either by simple excision or by occlusion of the hole through which the larva breathes, typically by using petroleum jelly. By suffocating the larva, it will emerge from the skin. After the larva is removed from the lesion, the inflammation resolves spontaneously. Usually no antibiotics are needed, although secondary bacterial infections can occur.

In botfly-endemic areas of North America, clinicians should consider cutaneous myiasis among patients presenting with lesions that have a characteristic central opening in the skin and perceived or visible movement or among patients with furunculosis or cellulitis that does not respond to antibiotic treatment.

Received August 9, 2006. Accepted for publication November 2, 2006.

Authors’ addresses: Rachel Plotinsky, Epidemic Intelligence Service, Office of Workforce and Career Development, Centers for Disease Control and Prevention, Atlanta, GA, and New Hampshire Department of Health and Human Services, Bureau of Disease Control and Laboratory Sciences, Concord, NH. Present address: Dartmouth-Hitchcock Medical Center, Section of Infectious Disease and International Health, One Medical Center Drive, Lebanon, NH 03756, Telephone: +1 (603) 650-5000, Fax: +1 (603) 650-6110, E-mail: Rachel.N.Plotinsky@hitchcock.org, plotinsky@hotmail.com. Elizaabeth A. Talbot, New Hampshire Department of Health and Human Services, Bureau of Disease Control and Laboratory Sciences, Concord, NH, and Dartmouth College, Hanover, NH. Present address: Dartmouth-Hitchcock Medical Center, Section of Infectious Disease and International Health, One Medical Center Drive, Lebanon, NH 03756. Harry Davis, Franklin Pierce College, Rindge, NH.

REFERENCES