Short Report: An Urban Epidemic of Human Myiasis Caused by Dermatobia hominis in French Guiana

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Abstract. We report the onset of an urban epidemic of human myiasis caused by Dermatobia hominis. To our knowledge, this is the first urban epidemic described for D. hominis. The epidemic was most likely related to exceptional weather conditions and notably high rainfall in January 2000, which may have facilitated the maturation of the pupae.

French Guiana, an overseas French administrative territory, is located on the northeastern coast of South America (latitude 04°56’13”/longitude 52°20’06”) between Brazil and Suriname. Ninety percent of its surface is rain forest; the remaining 10% is a coastal plain where 90% of the 200,000 inhabitants live. Cayenne and two adjacent towns, Rémire and Matoury, are the main urban centers (with 80,000 inhabitants). Myiasis caused by Dermatobia hominis (D. hominis) are endemic in French Guiana. Patients usually consult after staying in the forest. We report an unusual urban epidemic of myiasis caused by D. hominis during the first trimester of 2000.

From 1997 to 1999, the average number of cases of myiasis diagnosed by the Cayenne dermatology department was six. Between January 21 and March 30, 2000, 30 patients consulted for myiasis as a result of D. hominis. A retrospective study was performed on the cases of myiasis caused by D. hominis diagnosed in the dermatology department of Cayenne during the first trimester of 2000. The diagnosis was made on clinical presentation and therapeutic extraction of the larva. In most cases an entomologic identification of the larva was performed. Age, sex, number of lesions, and localization of lesions were collected from clinical files.

Thirty patients consulted for myiasis caused by D. hominis between January 21 and March 30, 2000. There were 17 men and 13 women with a mean age of 37.2 years. Forty-eight furunculous lesions (Figure 1) were counted for 30 patients (1.7 lesion/patient, range 1–4). Lesions predominantly affected uncovered skin. Nineteen myiasis were on the head, 17 on the limbs, 11 on the trunk, and 1 on the genitils. The extraction of larvae confirmed the diagnosis and allowed the entomologic identification of D. hominis. Larvae were at stages 1 to 3. Patient interviews revealed that only two cases were contracted in the forest. The other patients had never been in the forest and resided in various parts of the so called “Cayenne island” (Cayenne, Macouria, Matoury, Rémire-Montjoly). Fifteen patients (50%) lived in Cayenne center city. During the same period, a canine epidemic of myiasis caused by D. hominis was reported by Cayenne veterinarians. Figure 1 summarizes the number and geographic origin of cases.

Cutaneous myiasis are caused by the infestation of mammal cutaneous tissues by larvae of the dipter order. “Furunculous myiasis” is caused by D. hominis in Latin America and Cochliomyia anthropophaga in Africa. In the case of D. hominis, it requires another arthropod to deposit its eggs on the skin of mammals. Most reports of human botfly myiasis concern imported cases in tourists in North America, Europe, and Japan. This diagnosis is usually made after a stay in the Amazon forest. Myiasis caused by D. hominis thus represented 10% of imported tropical dermatoses in Paris. In Bolivia, the incidence of myiasis among tourists trekking in the forest is estimated at 1/190. This diagnosis usually concerns patients having stayed in the forest for professional or touristic reasons. There are no previous reports of an epidemic of human myiasis in a restricted geographic area. Moreover, the epidemic observed in 2000 is noteworthy because it affected an urban population. The proliferation of the diptera and the extension of the disease outside of the forest were probably facilitated by climatic factors: record high rainfall in January 2000 (1030.4 mm in 1 month, although the average of the previous decade was 390 mm, data Météo, France). Climatic factors (rainfall, temperature) can affect the life cycle of D. hominis. Similarly, humid soils accelerate the maturation of pupae in adult insects. Brazilian authors have described an increase of bovine myiasis in the months after heavy rainfall. The epidemic initially affected inhabitants of the peripheral areas of Cayenne and subsequently affected the center of Cayenne.

In conclusion, we present an urban epidemic of myiasis caused by D. hominis that occurred in 2000 in French Guiana. This epidemic was probably subsequent to unusual climatic conditions leading to the urban development of the diptera. We did not observe any difference in the semiology of myiasis with what has been reported elsewhere.

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FIGURE 1. Epidemic curve of myiasis cases during the first 13 weeks of 2000 in Cayenne. This figure appears in color at www.ajtmh.org.
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