<1 case/100,000 population/year, and the disease accounts for ∼2%–3% of all leukemias in adults in the United States (1). Infections are a common complication for patients with this disease (10).

These 2 cases of imported melioidosis show that travelers with hematologic malignancies are at risk for such infections (1). Immuno-compromised travelers might be first sentinels for ongoing endemic diseases. When travelers return with uncommon diseases, physicians should check for underlying diseases. Physicians providing care for patients with hairy cell leukemia should be aware of the risk for contracting melioidosis.

Acknowledgment

We thank Laurent Meyer for reviewing the manuscript.

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DOI: http://dx.doi.org/10.3201/eid1903.121329

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Plague Epidemics and Lice, Democratic Republic of the Congo

To the Editor: Plague, a zoonotic disease caused by the gram-negative bacterium Yersinia pestis, is transmitted to humans by the bites of infected fleas (such as Xenopsylla cheopis), scratches from infected animals, and inhalation of aerosols or consumption of food contaminated with Y. pestis (1). Decades ago, Blane and Baltazard proposed that human-to-human transmission of Y. pestis could be mediated by human ectoparasites, such as the human body louse (2). This hypothesis was further supported by experimental data from animal models (3).

To further test this hypothesis among humans, we conducted a field assessment in April 2010, in which we collected body and head lice from persons living in a highly plague-endemic area near the Rethy Health District, Province Orientale, Democratic Republic of the Congo. This health district has 157,000 inhabitants, and during 2004–2009 it had more suspected plague cases (1,624 cases of suspected plague, 39 deaths) than any other health district in the Democratic Republic of the Congo. In April 2010, we visited the dwellings of 10 patients for whom suspected cases of plague had been diagnosed during January–April 2010. All patients had symptoms typical of bubonic plague, and their illnesses were reported as suspected bubonic plague. However, because of the lack of laboratory facilities in Rethy, none of these diagnoses could be microbiologically confirmed.

A total of 154 body lice and 35 head lice were collected from clothes and hair of persons living in or near the patients’ dwellings. Body lice were preserved in ethanol before
being sent to the laboratory. Total DNA was extracted by using an EZ1 automated extractor (QIAGEN, Courtaboeuf, France) and subjected to parallel real-time PCRs selective for the Y. pestis pla gene, the Rickettsia prowazekii ompB gene, a Borrelia recurrentis noncoding genomic fragment, and the Bartonella quintana internal transcribed spacer. B. quintana PCR primers and probe have been shown to be specific for B. quintana (4). Primers and probe sequences and experimental conditions have been reported (4). Negative controls contained PCR buffer without DNA, as described (4). Any amplification with a cycle threshold (Ct) <40 was regarded as positive.

Negative controls remained negative in all PCR-based experiments, which were not prone to in-laboratory contamination, and all samples were negative for R. prowazekii and B. recurrentis. Conversely, B. quintana was detected in 50 (32.5%) of the 154 body lice (Ct, 18.62–38.45) and 6 (17.1%) of the 35 head lice (Ct, 29.48–38.68). The Y. pestis pla gene was detected in 1 head louse (Ct, 38), which was negative for the other pathogens, and in 2 body lice (Ct, 37.36 and 36.97, respectively), which were positive for B. quintana.

B. quintana has been detected in head louse specimens collected in Ethiopia and Senegal (5–7) and in body louse specimens collected in Burundi, Rwanda, Zimbabwe (8), and Ethiopia (5); we add Democratic Republic of the Congo to the list. Body lice are acknowledged vectors for human-to-human transmission of B. quintana (9). Detection of Y. pestis in head and body lice has been reported (2). Detailed observations in south Morocco showed that body lice collected from blood culture–negative bubonic plague patients were negative for Y. pestis, whereas body lice collected from septicemic patients were positive according to guinea pig inoculation results (2). Further experiments in a rabbit experimental model demonstrated the possibility of direct louse-bite transmission of Y. pestis (3). A recent search for Y. pestis in head lice in Ethiopia found none (5).

Our detection of B. quintana and the plague agent Y. pestis in modern head and body lice is similar to findings of a paleomicrobiological investigation at a medieval plague site near Paris (10). There, high-throughput real-time PCR investigation of dental pulp collected from 14 teeth from 5 skeletons detected B. quintana DNA in teeth from 3 skeletons and Y. pestis DNA in teeth from 2, including 1 with co-infection. Altogether, these data suggest that transmission of B. quintana and Y. pestis has been ongoing for centuries in populations in which louse infestation is prevalent. This finding indicates that lice might play a role in transmission of Y. pestis and that preventing and controlling louse infestations might help limit the extension of plague epidemics in louse-infested populations.

This study was supported by Unité de Recherche sur les Maladies Infectieuses et Tropicales Émergentes, Unité Mixte de Recherche Centre National de la Recherche Scientifique 7278, Institut de Recherche pour le Développement 198, and Aix-Marseille Université, Méditerranée Infection, Marseille, France.

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DOI: http://dx.doi.org/10.3201/eid1903.121542

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