

Airport malaria: Rare but with possible serious implications

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Malaria is mainly a travel-associated infection in Belgium, where between 2016 and 2019, 327 to 420 cases were reported annually by the National Reference Laboratory. Local transmission is only sporadically

reported.

In their paper published in *Eurosurveillance*, van Bortel et al investigate various hypotheses regarding possible sources and paths to infection of two patients. They conclude that the most likely route of transmission was through an infectious exotic *Anopheles* mosquito that was possibly imported via the international airport of Brussels or the military airport Melsbroek. The two people who died lived close to both airports (at a distance of 5 km) and based on genomic analysis of the parasites identified in the two cases, the most likely origin of the malaria parasite *Plasmodium* was Gabon or Cameroon.

No travel history, no suggested local transmission

During the second COVID-19 wave in Belgium, a person in their 80s with obesity and [arterial hypertension](#) presented to the emergency ward of a peripheral hospital with acute-onset diarrhea and dyspnea for one day. On admission on 29 September 2020, the patient had fever (38.7 °C), yet was conscious and oriented. Despite [antibiotic therapy](#) and supportive treatment, the patient rapidly deteriorated and died of refractory shock on 30 September 2020.

Diagnosis of severe malaria caused by *P. falciparum* was made retrospectively when malaria was diagnosed in the second hospitalized case—the first patient's spouse who was admitted to hospital a day later. Both tested negative for SARS-CoV-2.

A diagnosis of severe malaria was made based on the dyspnea, hyperparasitemia and lactic acidosis.

Neither of the two patients had a recent travel history so an entomological investigation followed to search for presence of *Anopheles* mosquitoes as potential vectors in the couple's house and

garden as well as in a wider area around their house to assess possible routes of local transmission.

A single dead female mosquito was collected in the couple's house and identified as *Anopheles claviger* but was tested negative for the presence of the malaria parasite (*Plasmodium* spp.). In addition, the investigation did not reveal any travel-associated malaria case that could have been identified as index case. The authors conclude that "it is very unlikely that local *Anopheles* mosquitoes were responsible for the two local malaria cases."

A case of Odyssean malaria?

During the potential transmission time beginning of September 2020, the temperatures in Belgium were quite high, which, according to the authors, could have favored the survival of introduced exotic *Anopheles* [mosquitoes](#). The authors argue that given that the proximity of the couple's residence to the international airport Brussels and the military airport Melsbroek, an infectious exotic *Anopheles* mosquito could have survived and reached the house as import of exotic *Anopheles* species has been previously reported in Belgium.

So-called Odyssean malaria, also referred to as [airport](#), port or suitcase malaria, is the result of a mosquito bite from an imported infectious exotic mosquito. "The conclusion of this possible route of infection is often based on excluding other hypothesis, since a direct observation of this event is very unlikely," state van Bortel et al, who acknowledge that "Odyssean malaria remains a rare event. Yet, it has significant implications, particularly for the patient, as delayed or missed diagnosis of the cause of illness often results in high rates of complications and mortality."

The authors advocate for awareness among health care practitioners

working near airports as they should consider [malaria](#) as a [differential diagnosis](#) when laboratory and/or clinical features such as recurrent and unexplained fever or severe thrombocytopenia are observed even without obvious exposure abroad.

More information: Wim Van Bortel et al, Two fatal autochthonous cases of airport malaria, Belgium, 2020, *Eurosurveillance* (2022). [DOI: 10.2807/1560-7917.ES.2022.27.16.2100724](#)

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