

Suspected Odyssean Malaria Outbreak in Gauteng Province, September 2014

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Abstract : Background: Odyssean malaria refers to malaria acquired by infected mosquito bites from malaria endemic to non-endemic regions by mechanical modes of transport, such as airplanes, water vessels, trains and vehicles. Odyssean Malaria is rare and is characterised by absence of travel history to malaria endemic areas. As not anticipated in non-endemic areas, late diagnosis and treatment lead to a high case fatality rate. On 26 September 2014, the Outbreak Response Unit at the National Institute of Communicable Diseases was notified of a suspected death from Odyssean Malaria in Johannesburg, Gauteng Province, a non-endemic area. The main objective of this investigation was to identify the etiological agent's mode and source of transmission. Methods: Epidemiological surveys were conducted with the deceased's family and clinical details were obtained from doctors who treated the victim in Southrand, Johannesburg. Blood samples were collected prior to death and sent to the National Health Laboratory Services, Johannesburg laboratory for a full blood count, urea electrolytes, creatinine, and C-reactive protein. Environmental assessments and entomological investigations, including collection of mosquito and larvae, were conducted at the deceased's home and surrounding areas and sent to the laboratory for analysis. Results: Epidemiological surveys revealed no travel history, no mechanical transmission through blood transfusion and no previous possible exposure of the victim to malaria mosquitoes. Laboratory findings indicated that the platelet count was low. A further smear revealed that the malaria parasite was present and malaria antigen for *P. falciparum* was positive. Entomological findings revealed that none of the six adult or larval mosquitoes collected on site were malaria vectors. Dumping sites found at the back of the house were identified as possible sites where mosquitoes from endemic places could possibly breed. Conclusion: Given that there was no travel history or the possibility of mechanical transmission (blood transfusion or needle), the research team concluded that it is highly probable that the infection was acquired through an infective *Anopheles* mosquito inadvertently translocated from a Malaria endemic area by mechanical modes of transport. We recommend that clinicians in non-endemic malaria areas be aware of this type of malaria and test for malaria in patients showing malaria-like symptoms.

Keywords : Odyssean Malaria, vector Bourne, malaria, epidemiological surveys

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