

# A case of transfusion transmitted malaria in Switzerland

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On July 29<sup>th</sup>, 1999 a 70-year-old male patient was operated on at the University Hospital, Zurich for coronary artery disease and aortic aneurysm. One month later on August 25<sup>th</sup> a second operation was necessary. On both occasions he received a total of 26 units of blood-products, 16 units of packed cells and 10 of fresh frozen plasma.

Two weeks after the second operation there was an unexplained deterioration in his general wellbeing. He developed a fever and his laboratory tests showed signs of acute infection. 22 days after re-operation the fever reached 40 °C. The next day the laboratory reported the presence of plasmodia in blood smears. Retrospectively plasmodia could be found in a blood smear prepared 3 days earlier. The diagnosis of falciparum malaria was established. In spite of appropriate antimalarial treatment the multimorbid patient died 3 days later due to circulatory and multiorgan failure.

As the patient had not travelled to tropical regions in the recent past, alternative explanations for the malarial infection were evaluated. Airport malaria was considered as a possibility, as the patient lived close to the International Airport in Zurich, where such cases have been observed previously. A retrospective analysis of the transfused red cell

units was initiated to exclude transfusion malaria. 16 donors of red cell concentrates were recalled for a malaria falciparum IFTA antibody test. One of the donors showed a malaria antibody titer of >160 (normal value <40) 3 months after the index donation, when repeated of 640. At this time no malarial parasites could be found in the blood smears of this donor. 3 weeks later a control revealed low numbers of *P. falciparum* gametocytes. A further month later (without treatment) the blood smears showed asexual parasitaemia and *P. falciparum* PCR was positive. PCR analysis confirmed the identical species of *P. falciparum* in donor and recipient, thus proving transfusion associated aetiology of the patient's disease. A serothes specimen of a previous donation of the donor was available for malaria screening. Similar to the index donation it proved to be malaria falciparum antibody positive. Because of the benign course of the malaria infection the donor was treated with a course of Malarone.

The donor in question is a 30-year-old native from Cameroon, his parents coming from Cameroon and Guadeloupe respectively. He left Cameroon 10 years ago, was last there for a visit 6 years ago, and has since not been to any tropical area endemic for malaria. Before moving to Switzerland he lived in

France for 8 or 9 years, close to International Airport Paris-Roissy. He has always been in good health and does not recall having had any fever attacks in the last few years. He remembers having had malaria at the age of 15, when still living in Cameroon. He has donated blood twice since moving to Switzerland. The recipient of the first donation is in good health and has been tested malaria falciparum antibody negative.

The origin of the malaria infection of the index donor is unclear. It must have been acquired before his first blood donation in Switzerland. Acquisition during his last visit in Cameroon 6 years ago appears unlikely as chronic asymptomatic malaria falciparum infection of several years of duration is unlikely [1, 2]. We assume that the donor acquired his malaria more recently, most likely during his stay near Paris-Roissy Airport. Likewise baggage malaria (importation of malaria infected mosquitos in the luggage of travellers returning from vacation in tropical areas) [3] must be considered.

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