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A Most Unfortunate Needlestick Injury

Why the doctor paid a taxi for the nurse

A few months ago when I was inserting an intravenous catheter into the cubital vein of a patient with malaria I accidentally stung the assisting nurse in the back of her hand with the needle that was withdrawn from the catheter. As the nurse had an adequate hepatitis B vaccination titre I advised her to contact me only if she developed fever. Eighteen days later she called and said that she had flu. I asked her to come to the hospital for a thick smear, but she wanted to go to bed and take some aspirin. Besides, she was alone at home and had no money for transport. Afraid of the possible consequences of her staying at home and feeling guilty, I offered to pay for a taxi.

On examination she had a temperature of 39.5°C without any other abnormal findings. A thick smear showed two ring stages of *Plasmodium falciparum* per 100 leucocytes. The number of leucocytes was $2.8 \times 10^9/l$, the other laboratory results were normal. She was treated with 600 mg of oral quinine three times a day for three days and three tablets of Fansidar on the third day. She recovered well.

The patient with malaria had acquired her infection in the Gambia. She had not taken any antimalarial medication at the time of the accident when her parasitaemia was 277/100 leucocytes (=0.2% parasitised red blood cells). Despite this low grade of parasitaemia and the minimal transfusion of blood from the patient to the nurse, transmission apparently took place. If you assume entrance of one single, parasitised red blood cell into the circulation and a multiplication factor of 10 every two days you can expect a total of 10^9 parasites at day 18. Assuming no sequestration you would expect a parasitaemia of about 7/100 leucocytes.

The case teaches us that the normal incubation period for *P falciparum* malaria (10 to 16 days) does not apply in cases of needlestick malaria. Since the liver stage is bypassed it may be as short as seven days but with a very small inoculum symptoms can start 18 days after the accident, as seen in our patient. Previous reports on accidental inoculations showed incubation periods varying from seven to 17 days and up to 24 days in case of blood transfusions.

It would probably have been a safer course of action, however, to have treated the nurse immediately after the injury.

Michael A Van Agtmael

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