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Case Reports in Clinical Medicine

Loa loa microfilaremia in a blood donor—A case report

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ABSTRACT

We report a case of *Loa loa* microfilaremia in a healthy blood donor. The potential for transfusion-transmitted infection and the possibility of transfusion-associated allergic reactions calls for stringent donor requirements. We recommend that all blood products be additionally screened for possible hemoparasites.

Keywords: *Loa loa*; Microfilaremia; Transfusion; Antibodies; Asymptomatic

1. INTRODUCTION

In endemic regions, peripheral circulation of infectious pathogens, potentially transmissible during transfusion, is a common occurrence in infected hosts [1,2]. With the onset of human immunodeficiency virus (HIV) and the potential for hepatitis infection, enrolment standards and testing for blood donors were revised globally. In western countries, a history of travel to endemic locations leads to deferral of a potential donor [3], plus blood and its products thoroughly screened for potential transfusion-transmissible infectious agents [4,5]. In developing countries however, even though blood products are screened for HIV and hepatitis, problems persist due to dangers posed by hemoparasites for which donors are not routinely tested, potentially exposing recipients of such products to the risk of infection. In this report, we present a case of *Loa loa* microfilaremia in a healthy, asymptomatic blood donor, as part of a preliminary study assessing the prevalence of transfusion-transmittable hemoparasites, and determining the risk of possible transmission to recipients. The implications for donor recruitment and blood donation policy is analyzed.

2. CASE REPORT

In this study, 200 blood donors were recruited at the Blood Donors Clinic, Lagos University Teaching Hospital, Nigeria. The hospital is a major tertiary referral centre, catering to the health needs of a multiethnic, diverse group of people (city population ~20 million) [6], with the donor's clinic receiving 30 - 50 donors daily, averaging ~13,000 annually. The cohort chosen was representative of the global blood donor population. Donors were interviewed about recent illness or recovery from such, and finger-pricked for hemoglobin levels. Donors that have had a recent contact with an antimalarial were removed from the study. Stained thin and thick films, from individual samples, were examined for various hemoparasites (*Plasmodium*, *Loa loa*, *Babesia*, *Trypanosoma*) and further analysis.

A physically healthy male donor, ~25 years of age, was found with a high intensity of *Loa loa* microfilaremia by microscopy. This was surprising since all donors were based in Lagos, and considering this is an urban, cosmopolitan city, unexpected. On interview, it was discovered that the donor had just relocated to Lagos from the Middle Belt region of the country. Prior to relocation, his occupation was subsistence farming, for which he was outdoors and exposed to several insect bites daily. This region is highly endemic for loiasis [7], and co-infection with onchocerciasis is a common occurrence. We hypothesize he had been exposed and infected, on account of his occupational demands..

3. DISCUSSION

This is a highly significant observation, considering the implication for donor recruitment and donation policy. Urbanization in Lagos has eroded the chance of contact between the populace and *Chrysops silacea*, the vector of the parasite, which is usually associated with forests and forest patches. This donor had no formal education and is a case study of the rural-urban migration. This is a transported infection, carried around by the donor, with no possibility of vectorial transmission. Significantly though, due to the high demand for blood and its products in many developing countries, a negative re-

sult for HIV and hepatitis might qualify a potential donor, irrespective of hemoparasites the donor may be harboring [8]. Microfilaria may survive in humans for as long as 2 to 3 years, with survival rate enhanced when transfused in whole blood. Though transfusion-transmitted microfilaremia may cause no disease, it is associated with the production of antibodies directed against its cuticle [9], which might be a contributory factor to transfusion reactions observed in some recipients. These reactions can be exacerbated if a naïve Western recipient or a previously un-exposed individual is transfused with such products in an emergency. The prevention of transfusion-related hemoparasites will require a highly stringent screening exercise, and rejection of all infected samples, where possible [10].

4. CONCLUSION

Based on our findings, we recommend that Giemsa-stained thin and thick blood films from eligible donors, be carefully examined for hemoparasites, leading to the identification of infected samples and rejection of such.

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