Case report

A case of severe tungiasis in Nigeria

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Abstract

We present a severe case of tungiasis (sand flea disease) in an orphan with mental disease, living in a rural village in Lagos State, Nigeria. More than 1,100 embedded sand fleas were counted, causing severe pathology on the feet and difficulty walking. Lesions also occurred on the hands, elbows, and buttocks. This case shows that tungiasis may cause severe disease in a small proportion of high-risk individuals in endemic communities. Action is needed to reduce severe morbidity caused by this parasitic skin disease in this and other underprivileged communities.

Key words: tungiasis, jigger, flea, Nigeria

INTRODUCTION

Tungiasis, a parasitic skin disease caused by the penetration of the female sand flea *Tunga penetrans*, is a scourge for many people in underprivileged communities in sub-Saharan Africa, Latin America and the Caribbean Islands [1]. Tungiasis may cause severe disease resulting in deformation of digits, chronic lymphedema, ulceration and secondary infection [2, 3]. *Staphylococcus aureus* and streptococci have been isolated most frequently from lesions, and other aerobic and anaerobic bacteria (such as clostridia) have also been found [4]. Historical and recent reports have described tungiasis as a cause of tetanus [3, 5, 6].

In addition to people living in endemic communities, the disease occurs among travelers visiting these areas [7, 8]. However, tungiasis has rarely been considered a public health problem by health care professionals or policy makers or even by the scientific community.

CASE REPORT AND DISCUSSION

During field work in Angorin Beach, a small community of less than 100 people in the rural area of the city Badagry in Lagos State (Nigeria), we detected a person of

unknown age (approximately 18 years old). An orphan brought to the community by a church leader one year ago, this young man was living alone in a small hut without sanitation and only a sandy floor. Being stigmatized, he spent most of the day in this hut, where according to community members infestation occurred to a large extent. The patient did not have any access to education or health care, and hygienic conditions were precarious. In addition, he was suffering from mental disease, possibly schizothymia, and was unable to remove the sand fleas with a needle, nor did he allow others to do so.

Upon clinical examination, he presented with approximately 1,140 embedded sand fleas, 1,086 (95.3%) of them on the feet (566 on the right and 520 on the left foot). Of these, 351 (32.3%) were vital and 735 (67.7%) avital lesions, according to the Fortaleza Classification [9]. In addition, 34 lesions were evident on the hands and 12 on elbows, with remarkable hypertrophy and pseudoepitheliomatous appearance, as previously described in a case report from Brazil [10]. On the buttocks, the patient presented another four lesions.

Erythema, inflammation, fissures and desquamation of the skin were present on the feet. The entire feet were ulcerated and edematous, toe deformation was present, all toenails were deformed, and the lesions were bacterially su-

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Figure 1: Both feet, severely infested with tungiasis.

Figure 2: Plantar side of the right foot. Hundreds of vital and avital tungiasis lesions can be seen.

perinfected. Figures 1-3 illustrate the clinical aspect of the infestation. The patient had difficulty both walking and gripping.

The individual was treated topically with a plant-based repellent known to be efficacious in severe tungiasis [11] for a period of two weeks and referred to the general hospital for tetanus vaccination. The community was informed about the importance of regular inspection of feet for embedded sand fleas and their immediate extraction under sterile conditions.

Tungiasis is a typical example of a neglected tropical disease among underprivileged populations: 1) it occurs almost exclusively in poor communities; 2) it is endemic in

Figure 3: Detail of plantar side of left foot with severe tungiasis.

rural areas, 3) it is associated with stigma; and 4) there are no products on the market targeting treatment of the disease [12-14]. The present report of an extremely severe infestation exemplifies these points in a vivid way.

Several studies both historical and recent have revealed that tungiasis is common in Nigeria and other West African countries, but no case of more than a thousand lesions in one individual has been reported so far from this region [15-21]. A recent population-based study from Lagos State detected a prevalence of 45% in a rural community, with a maximum number of 87 lesions in one case [19].

Our case report shows that tungiasis may still cause severe disease in a small proportion of high-risk individuals in endemic communities. Tungiasis needs to be perceived as an important public health problem in underprivileged communities. We reiterate our recent statement that action is needed to reduce severe morbidity caused by this parasitic skin disease in underprivileged communities [22].

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