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Short Communication

Cutaneous leishmaniasis in Mullaitivu, Sri Lanka: a missing endemic district in the leishmaniasis surveillance system

S.N. Semage^a, K.P.N. Pathirana^a, S.B. Agampodi^{b,c,*}^a Sri Lanka Army Medical Services, Colombo, Sri Lanka^b Tropical Disease Research Unit, Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka^c Department of Community Medicine, Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka

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SUMMARY

The purpose of this study was to describe the emergence of cutaneous leishmaniasis in a district of Sri Lanka, documented at the national level as having zero incidence. We analyzed data from the Sri Lanka Army (SLA) to describe reported cases of cutaneous leishmaniasis for all armed forces personnel located in all 24 districts of Sri Lanka. These data are not included in the National Surveillance System. From January 2011 through February 2013, 314 armed forces personnel were confirmed as having leishmaniasis. Of these, 223 (81.4%) were working within the district of Mullaitivu at the time of investigation and another 21 (6.5%) reported that the lesion first appeared when they were working in Mullaitivu. The reported cumulative annual incidence of leishmaniasis among the army population was 7.5 per 10 000, while in the general area of Mullaitivu the incidence was 234 per 10 000. Leishmaniasis is emerging in epidemic proportions in Mullaitivu and is still not detected through the public health surveillance system. Urgent attention directed at disease surveillance and control activities is needed to control this emerging public health threat.

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1. Introduction

Since the first report of a locally acquired case in 1992,¹ cutaneous leishmaniasis (CL) has emerged as one of the most important communicable diseases in Sri Lanka.² In 2008, leishmaniasis was listed as a notifiable disease in Sri Lanka. Laboratory-based research reports and surveillance data show that the disease is endemic in the districts of Hambantota, Anuradhapura,³ Polonnaruwa,⁴ and Matara.⁵ According to the weekly epidemiological reports published by the epidemiology unit of Sri Lanka, five districts, namely Mullaitivu, Mannar, Jaffna, Batticaloa, and Badulla did not report a single case during the period 2010–2012.⁶ Of these districts, four were affected by 30 years of conflict, and the public health infrastructure and healthcare services are still developing.

The control and prevention of neglected tropical diseases are severely affected in most low-resource settings due to the lack of diagnostic facilities. In some of the zero incidence districts, the services of a dermatologist were not available during that period

and we hypothesized that the true picture of CL is not represented by the routinely reported data. In contrast, the Sri Lanka Army (SLA) has a good public health surveillance system covering the armed services personnel deployed all over the island, and leishmaniasis has been included as a notifiable disease in this surveillance system since 2011.

The disease investigation and screening process within the SLA is uniform at all their locations. Due to the problem of including a resident health division with a mobile population, SLA data are not included in the national figures published by the epidemiology unit in Sri Lanka. This non-inclusion of SLA data may have led to a gross underestimation of the disease burden in the country, as shown during the hepatitis A outbreak in Vanni, Sri Lanka in 2009.⁷

2. Study subjects and methods

Data for the present paper were derived from the SLA public health surveillance system for the period January 2011 to February 2013.

Case detection in SLA was done passively until 2012. In 2012, it was noted that one base camp was experiencing a higher incidence, and as a result, active case detection was done in that particular division located in Pudukuduiruppu area, in the district

* Corresponding author.

E-mail address: sunethagampodi@yahoo.com (S.B. Agampodi).

of Mullaitivu. During this process, 26 cases were diagnosed clinically with CL. Of these, 25 (96%) were confirmed as having CL through the demonstration of amastigotes in slit skin smears, showing a very high predictive value of clinical diagnosis. Subsequent cases were diagnosed and reported, based on the clinical diagnosis made by the dermatologist (second author). This is also the current practice in the Sri Lankan National Surveillance System, in which routine diagnosis and treatment are based on clinical grounds.

3. Results

From January 2011 through February 2013, 314 patients were confirmed as having leishmaniasis. The number of cases reported in 2011, 2012, and 2013 (February) was 149, 109, and 56 cases, respectively. The current place of work and work history were available for 274 cases. Of these, 223 (81.4%) were working within the district of Mullaitivu at the time of the investigation. Others were from Jaffna ($n = 10, 3.7\%$), Colombo ($n = 10, 3.7\%$), Kilinochchi ($n = 8, 2.9\%$), Polonnaruwa ($n = 6, 2.2\%$), Anuradhapura ($n = 5, 1.8\%$), Vavuniya ($n = 5, 1.8\%$), and five other districts ($n = 7, 2.2\%$). Of the 51 cases located in bases outside the district of Mullaitivu, 21 (6.5%) reported that the lesion had first appeared while they were located in Mullaitivu. The reported cumulative annual incidence of leishmaniasis among the SLA personnel was 7.5 per 10 000, while in the general area of Mullaitivu the incidence was 234 per 10 000 (Figure 1).

The temporal distribution of cases showed case reporting throughout the year (Figure 2). A sudden increase in cases was seen

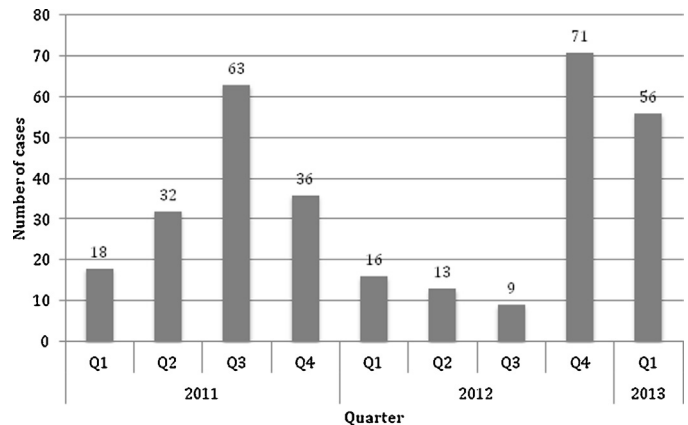


Figure 2. Temporal distribution of reported leishmaniasis cases in the Sri Lanka Army, January 2011 to February 2013.

in the last quarter of 2012 and the first quarter of 2013, due to active case detection through screening.

4. Discussion

While the surveillance of leishmaniasis in Sri Lanka depends on the availability of a dermatologist in the particular district, the SLA mobilizes the dermatologist to all base camps and this allows uniform surveillance throughout the country. Hence, the spatial distribution of cases in the SLA is not expected to be biased by the availability of a dermatologist.

The observations made in this population have major implications for leishmaniasis control in Sri Lanka. The SLA has a workforce of 200 000 and around 5000 soldiers are stationed in the Mullaitivu area. Since the end of the conflict in the north and east of the country in 2009, these soldiers have mostly been stationed in the same camp and so have not formed a mobile population. The number of cases from the district of Mullaitivu as shown in this study makes it one of the highest case loads in Sri Lanka. Even though the geographic location of the source of infection for a few cases may have been a district other than Mullaitivu due to a change in location, the majority of the cases were confirmed as having been stationed in that area for more than 6 months.

It would be expected that the clustering of cases in Mullaitivu would be associated with vector abundance and local spread of the disease. Previous studies have also suggested that the distribution of CL in Sri Lanka could be widespread⁸ and may not be truly represented by the present surveillance system. It is unlikely that only the armed forces are affected in those areas, with civilians spared. The locations of these bases are in the middle of civilian populations. We suspect that the disease could be highly prevalent among the population residing in Mullaitivu and that it might be of epidemic proportions. We strongly recommend the active surveillance of leishmaniasis in these new resettlements to reduce the burden of this important disease. In addition, this study clearly shows the challenges faced by the disease surveillance systems in resource-poor settings due to lack of awareness and diagnostic facilities.

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Conflict of interest: No conflict of interest to declare.

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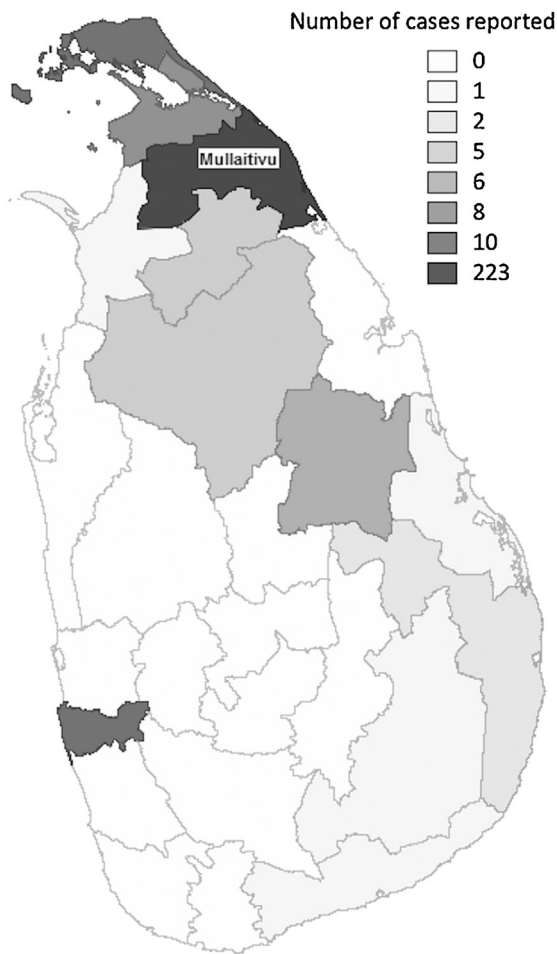


Figure 1. Leishmaniasis risk map based on cases reported from the Sri Lanka Army.

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