

Cutaneous leishmaniasis: an emerging health risk in Sri Lanka

Much work needs to be done regarding specific parasite identification, epidemiology, clinical diagnosis and prevention.

In Sri Lanka leishmaniasis has been viewed as an exotic disease linked with foreign travel or as a disease of Indian immigrants. Local transmission was considered non-existent although the tropical climate with high humidity favours the breeding of sandflies, the vectors of this disease.

Since the early 1990s this view changed with the recognition of autochthonous cutaneous leishmaniasis. The first documented case in 1992 was a young man from Ambalantota who initially gave a history of contact with dry zone jungle but later denied this history (1). This was followed a few years later by a number of cases from different parts of the island. The second and third case reports were from Mahiyangana (2) and Badulla (Seneviratne JKK. Personal communication). The later cases were from Pannala, Rajangana and Pottuvil (3). All were in young men presenting as cutaneous lesions in exposed body parts and with behaviour activities related to the scrub jungle. In 1996 a study done to assess disease prevalence in an area with potential risk of exposure using the leishmanin skin test and clinical examination in schoolchildren, failed to show wide prevalence. Of the 253 children examined, in the Yalwela School, close to Mahiyangana, none were leishmanin positive, nor was there clinical evidence of the disease. Two of the children tested with leishmanin, were positive. Dr. Luigi Gradoni supplied leishmanin for this study.

With increased awareness among dermatologists, more cases were detected, especially in soldiers in the north and east. A few cases were also seen in women who had exposure to scrub jungle. In a recently reported series of six cases in permanent residents of Uva, one was of concern as the lesion was recurrent and resistant to cryotherapy (4).

Epidemiological aspects

Leishmaniasis is currently of global concern because of its high risk in military operations, international travel and its co-existence with HIV infection (5,6). Several countries have experienced epidemics, including the south Asian countries Nepal, Bangladesh and India (7,6). The disease is caused by several species of protozoans of the genus *Leishmania*. They cause a wide spectrum of clinical manifestations varying from self-healing cutaneous lesions (CL) to disseminated visceral disease (VL) and disfiguring mucocutaneous lesions.

The epidemiology varies widely ranging from enzootic disease with sporadic cases in humans, to rural zoonosis with rodents as reservoir hosts. It could be an urban zoonosis with dogs as important reservoir hosts,

whereas the visceral leishmaniasis in India and east Africa is an anthroponotic with human-to-human transmission independent of reservoir hosts.

All leishmaniasis are transmitted by different species of sandflies. The sandfly fauna of Sri Lanka has not been adequately studied. The few studies available indicate that the common sandfly is *Phlebotomus argentipes*, widely distributed in the island, and anthropophilic in the highlands (9,10). This is the vector of *L donovani*, the aetiological agent of VL (kala-azar) in India. The only other sandfly of potential vector status recorded locally is *P stentoni*, a jungle species feeding on wild rodents (11). The absence of classical kala-azar in Sri Lanka is attributed to morphological variations in the local *P argentipes*.

A retrospective study of case reports shows evidence, although not conclusive, of infection with *L donovani* or a donovani-like parasite in Sri Lanka. In 1904, Castellani reported LD bodies from the spleen at post-mortem in a 20-year old man in whom splenomegaly was clinically absent (12). In 1960 a case of post kala-azar dermal leishmaniasis was reported in a patient from Vanuniya, but local infection was not considered, as there was a doubt whether the patient was an illegal immigrant from India (13). In 1967 an English girl was diagnosed with classical VL on return to the UK after spending a few months in Sri Lanka. As the patient had brief stops in the Middle East and in Mediterranean countries during her travel, infection acquired elsewhere could not be excluded (14). In 1991, an HIV positive homosexual was diagnosed as VL within one month of his return from Sri Lanka (15). Although initially he was thought to have acquired the infection in Sri Lanka, later this was in doubt, as a detailed travel history was not available. Leishmaniasis is not known to occur in dogs in Sri Lanka, but in 1994, a German Shepherd dog from Hindagala, Kandy, taken to Geneva, developed dermatitis around the nostril and was diagnosed on serology as leishmaniasis (Dissanaike AS. Personal communication).

The question arises whether this disease emergence is due to recent introduction of the parasite with Middle East returnees or merely recognition of an existing disease.

Although cases of cutaneous leishmaniasis were reported from Middle East returnees in the 1980s (16), the vectors of classical CL are not known to be present here. Furthermore, the distribution of local cases throughout the dry zone is unlike that of a recently introduced disease. It is more likely that this is a recent recognition with increased awareness and increased risk of exposure of the population with jungle clearing, population shifts and the military activities in the north and east. Thus the epidemiology of cutaneous leishmaniasis in Sri Lanka at present

indicates a zoonotic infection in the scrub jungle associated with wild rodents or canids as reservoir hosts.

Future needs

The current evidence points to the parasite being a zoonotic *L. tropica*, a non-visceralising *L. donovani* variant, or else, an entirely new species. Both the parasite and the vector require further study. The parasite needs to be specifically identified with isoenzyme and DNA analysis. A major breakthrough was the recent successful culturing of the parasite from a local case (Perera J. Personal communication). There is also much work to be done to resolve the epidemiology of leishmaniasis in Sri Lanka.

For soldiers in the north and east it is an occupational hazard, and effective repellents to ward off sandfly bites is necessary. The medical profession, particularly the general practitioners, needs to be aware of the clinical presentations. Although lesions respond well to cryotherapy, and are usually self-limiting with development of good cellular immunity, complications can occur (4), and specific drugs such as pentavalent antimony compounds should be available for treatment.

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