CASE REPORT

Autochthonous borderline tuberculoid leprosy in a man from Florida

GABRIEL VILLADA*, MINA ZAREI*, RICARDO ROMAGOSA*, PATRIZIA FORGIONE**, GABRIELLA FABBROCINI*** & PAOLO ROMANELLI*
*Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, Miami, Florida, USA
**Dermatology Section, Regional Reference Center for Leprosy, Ascalesi Hospital, Naples, Italy
***Division of Clinical Dermatology, Department of Systematic Pathology, University of Naples Federico II, Via Sergio Pansini 5, Naples, Italy

Accepted for publication 6 November 2015

Summary Leprosy (Hansen’s disease) is a chronic contagious granulomatous disease principally affecting the skin and peripheral nervous system, caused by Mycobacterium leprae. In this report, we present a case of autochthonous leprosy in a man from Florida as the first human case reported from this region. Authors believe dermatologists need to be aware of the possibility of autochthonous transmission of leprosy in the Eastern-Southern United States, and should consider leprosy in any patient with atypical skin lesions, even when a history of contact with armadillo is missing.

Keywords: Tuberculoid Leprosy, Eastern-Southern United States, Florida, Histology

Introduction

Leprosy is a chronic contagious granulomatous disease principally affecting the skin and peripheral nervous system, caused by Mycobacterium leprae. Leprosy was discovered by Armauer Hansen in Norway in 1873. Borderline lepromatous leprosy is a type of leprosy that...
can manifest by a large number of lesions, with various aspects such as infiltrations, plaques and nodules. In this report, we present a case of autochthonous leprosy in a man from Florida as the first human case reported from this region.

**Case Report**

A 76 year-old male presented with a skin rash of 2 months’ duration. The rash started in the right abdomen and spread to the rest of the abdomen and the lower extremities. Examination showed multiple slightly indurated oval erythematous edematous non-scaly plaques on the trunk and proximal upper and lower extremities, bilaterally, ranging in size from 1.0 to 1.5 cm in diameter. The lesions were asymptomatic. The clinical diagnosis was atypical nummular dermatitis. Two 4 mm punch biopsies were taken from the lesions on his flank for histological evaluations. On further clinical examination, ulnar and lateral peroneal nerves were palpable, but non-tender. Neurological examination showed mild hypoesthesia on both hands, as well as on the medial ankle, bilaterally. Histologic examination of the biopsied specimens showed a granulomatous inflammatory dermal, involving the upper dermis and extending into the deep dermis. The granulomas consisted of epithelioid histiocytes with occasional multinucleated giant cells, without necrosis. Several cutaneous nerves showed perineural granulomas (Figure 1).

A Fite stain revealed rare acid-fast organisms within cutaneous nerve twigs. Based on the physical examination and histological findings, borderline tuberculoid leprosy was diagnosed. The patient was born in Strasbourg, PA, moved at age 3 to Indiana and grew up on a farm. He moved to South Florida in the 1950s. He never lived in, or travelled to, a foreign country, but had a home in North Carolina where he went every summer for 20 years. He admitted taking a cruise to Panama and Costa Rica for a few days in 1997. He denied any contact with armadillos as the possible source of the disease. Standard multidrug therapy with rifampicin and dapsone was started. The patient responded well to therapy with resolution of the lesions over a period of several months. He experienced a mild reversal reaction that resolved with prednisone.

![Figure 1. Granulomatous inflammation involving cutaneous nerves in deep dermis (H&E, × 200).](image-url)
Discussion

Although no evidence of contact with armadillo was established, we suspect that this case of autochthonous leprosy was acquired from the armadillo in Florida. Of the 150 to 250 cases of leprosy diagnosed each year in the United States, 30 to 40, occurring in US-born Americans who have never traveled to areas where the disease is endemic, are thought to be due to contamination from armadillos. The Armadillo population in the United States results from two sources. The largest population was derived from armadillos that crossed the Rio Grande into Texas in the 19th century and have been expanding since, to north and east. The second population was derived from captive armadillos that were released in south-central Florida in the early 20th century and expanded north and west. These two populations merged at the end of the 20th century and have now a continuous distribution across the southeastern United States. In 1975 Walsh found that wild armadillos in Louisiana were infected with mycobacteria indistinguishable from *M. leprae*. DNA homology studies confirmed that the infection was due to *M. leprae*, while retrospective serological studies demonstrated that the natural zoonosis had been present before armadillos were used in leprosy research, and, therefore, did not result from an accidental contamination of the animals. Several studies confirmed the prevalence of infected animals in western states (Texas, Louisiana), but failed to demonstrate any significant presence to the east of the Mississippi River. Most of the cases of armadillo transmitted leprosy occur in the region of the western Gulf of Mexico. In 2009 Loughry published data showing a significant presence of infected animals at substantial distances east of the Mississippi River, in Mississippi and Alabama, indicating that leprosy was spreading eastward. This is consistent with the recent cases of zoonotic transmission from armadillo that have been reported in Georgia and in Mississippi, therefore indirectly confirming the spreading of leprosy in the armadillo population, as does our case, the first to be reported in Florida.

Dermatologists need to be aware of the possibility of autochthonous transmission of leprosy in the Eastern-Southern United States, and should consider this diagnosis in their differential in patients with skin lesions compatible with leprosy, even when a history of contact with armadillo is missing.

References