CASE REPORT

Autochthonous lepromatous leprosy in a Spanish woman with burns on both feet and skin lesions

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Summary The incidence of leprosy is decreasing worldwide and it is considered a rare disease in developed countries. In Spain, leprosy is mainly an imported disease with only few autochthonous cases seen. The diagnosis is difficult because of a low index of suspicion and the absence of visualisation of fast-acid bacilli in the lesions. Here, we report an autochthonous case of leprosy diagnosed after 4 years of evolution of skin lesions. Mechanical rupture of the biopsy helped finally to make the correct diagnosis of the disease.

Keywords: Lepromatous leprosy, Spain, mechanical rupture, skin biopsy

Introduction

Leprosy may be defined as a chronic contagious granulomatous disease that usually involves the skin and peripheral nervous system. The current incidence of leprosy is very low in developed countries,1–4 but some autochthonous cases could be observed worldwide. Lepromatous leprosy is a type of leprosy characterised by many lesions with bacteria, hair loss, nerve involvement, limb weakness and disfigurement.5 Due to its rarity, physicians could not be aware of the possibility of autochthonous transmission in developed countries,
Case Report

A 55 year old Spanish female was admitted at the Plastic Surgery Department to our hospital for performing skin grafts on both feet due to severe burns from hot water. During the initial interview, the patient reported some non-pruritic skin lesions in both legs, arms and trunk for 4 years. A physical examination revealed numerous lesions in both legs, of vascular aspect, that fuse forming plaques with whitish centre. The lesions were arranged asymmetrically, irregular edges, resizable and with conservation of rude tactile sensitivity (Figure 1A). Moreover, the patient had madarosis in the eyelashes and eyebrows (Figure 1B). In the left eye, ectropion and lagophthalmos was observed and keratitis punctata was discovered by the ophthalmologist. On both feet, the patient had second-degree burns and deformities compatible with neuropathic arthropathy (Figure 1C). No thickening of the radial, medianus, peroneal and ulnar nerves was detected.

After debridement and performing of skin grafts, some cutaneous biopsies were taken for both histopathologic and microbiologic study. Histopathologic examination by means of a...
Haematoxylin-eosin stain showed chronic inflammation signs with a perivascular infiltrate of neutrophils and histiocytes without the presence of granulomas. No Ziehl-Neelsen stain was performed in the pathology laboratory.

However, in the microbiology laboratory a Ziehl-Neelsen stain with a small sample obtained from a cutaneous biopsy was carried out, but no fast-acid bacilli (FAB) were observed. Due to the high index of suspicion of leprosy, the biopsy was placed on saline solution with glass beads and a mechanical rupture by vortexing was performed and then centrifugated. A new Ziehl-Neelsen stain was then carried out from the pellet, showing FAB and globi (Figure 1D). A specific polymerase chain reaction (PCR) for *Mycobacterium leprae* from the biopsy was performed and a positive result was obtained. Molecular study for resistance was carried out and the microorganism was susceptible to rifampicin, dapsone and ofloxacin (Genotype LepraeDR, Hain-Lifescience, Nehren, Germany) (performed in the Mycobacteria Reference Centre, Oviedo, Spain). A diagnosis of lepromatous leprosy was established and treatment with rifampicin (600 mg/day), dapsone (100 mg/day) and clofazimine (100 mg/48 hours) was started and prescribed during 2 years. At 6 months of follow-up, the patient remained clinically stable with a favourable outcome.

**Discussion**

The incidence of leprosy is currently decreasing worldwide, although the new case detection rate remains high, with about 250,000 new cases being registered each year. In Spain, according the leprosy registration state, 11 new cases were diagnosed in 2014 as well as eight in 2015, and the majority of them were seen in the immigrant population. In 2015, the number of prevalent cases was 34, lower than the previous year (*n* = 40), being the prevalence of 0.0073 cases per 10,000 inhabitants. These data show that leprosy in Spain is mainly an imported disease, although some autochthonous cases have been also seen.

Leprosy diagnosis in developed countries requires now a high index of suspicion, due to being a rare and chronic disease whose symptomatology is appearing slowly and progressively. Diagnosis may be difficult, because the direct stain from the sample can be negative, as in our case, so several procedures such as the mechanical rupture of the biopsy could be necessary for the correct visualization. Moreover, histopathologic findings are usually non-specific due to the absence of granulomas, as occurred in the lepromatous form.

Global leprosy eradication is difficult, although its control involves an early diagnosis and a rapid and correct therapy. Some days after the treatment has begun, the patient is not contagious.

The treatment of choice of leprosy is based on rifampicin and dapsone association; clofazimine may be added in the cases of lepromatous leprosy. Although drug resistance does not represent a threat, the experts in the field advise about a treatment monitoring in all cases. With regard to drug resistance study, the most appropriate method for its detection is the DNA sequencing, because mutations in three genes involved on the rifampicin, ofloxacin and dapsone resistance have been already identified.

In summary, although leprosy is decreasing worldwide and is an unusual disease in developed countries, physicians should be still aware about this entity, including autochthonous population, in order to make a correct diagnosis and avoiding severe complications.
References