

## Are there Autochthonous Cases of Leprosy in Spain?

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### ABSTRACT

Leprosy or Hansen's disease is an infectious disease caused by *Mycobacterium leprae*. The mechanism of transmission is not well known, but it is thought that it is transmitted person to person through respiratory secretions by means of close and continuous contact. Since the Global implementation of effective multidrug therapy in the mid-80s the incidence of leprosy had decreased from 5.4 million cases per year to 210.758 cases at the end of 2015.

**Keywords:** Leprosy; *Mycobacterium leprae*; Infectious disease

### INTRODUCTION

We present 2 clinical cases, one diagnosed at the Gregorio Marañón University Hospital and another detected at the Miguel Servet University Hospital. The following parameters were analysed: Age, sex, birthplace, clinical manifestations, skin biopsy and treatment.

### CASE-I

Male 37 year old, who relates he had a nodule-papular lesion on his right temple, 6 years ago which was diagnosed as sarcoidosis without having an anatomopathological report. The lesion involuted without treatment and 2-3 years later it reappeared and disappeared again without a known treatment. In September of 2016 turned to his dermatologist because of a skin lesion in the same location that was biopsied, with total extirpation in December of the same year.

The anatomopathological study, revealed a non-necrotizing granulomatous dermatitis with polyneuronal involvement (Figures 1 and 2). The Fite-Faraco technique for detection of mycobacteria was negative. When Leprosy was suspected, a DNA extract was sent to the Fontilles Sanatorium, where DNA from *M. leprae* was detected by PCR. The patient was diagnosed with paucibacillary leprosy and treatment with Rifampin (600 mg /month) and Dapsone (100 mg /day) was prescribed for 6 months.

The patient was born and residing in Spain with no personal history of interest. He has not lived in countries or endemic areas, but he has made short trips outside Spain, all after the appearance

of the first injury. He is not a health or a laboratory worker. In the last years he has made numerous trips but none to countries that have notified more than 1000 new cases in the last 5 years, except a trip to Brazil. It was a 5 day tourism trip in 2015 with a 5-star hotel stay in Rio de Janeiro. He has not received health care outside of Spain; neither has had close relationships with people in countries with cases of leprosy or from these countries.

### CASE-II

Male, 44 years old. The patient turned to his doctor because of non-painful skin lesions on the auricular cartilages, nose wing, upper jaw and ulcerated palate lesions with little bleeding. The patient reported that they appeared 1 year ago and that have been progressively increasing in size. Also he had bilateral muscle weakness and loss of sensation in arms and legs.

Biopsies of palate lesions and serial skin biopsies were performed.

The anatomopathological study of palatal biopsy (Figure 3) revealed granulomatous lesions with abundant BAAR in masses (globis), and in the skin biopsy a necrotizing vasculitis with infiltrated lymphocytes was observed.

The patient was diagnosed with multibacillary lepromatous leprosy and generalized erythema nodosum secondary to lepromatous leprosy. He was a business-man, born and residing in Spain with no personal history of interest, all of his family was healthy. He had not made trips of interest or had had close relationships with leprosy people. The prevalence of leprosy has decreased in

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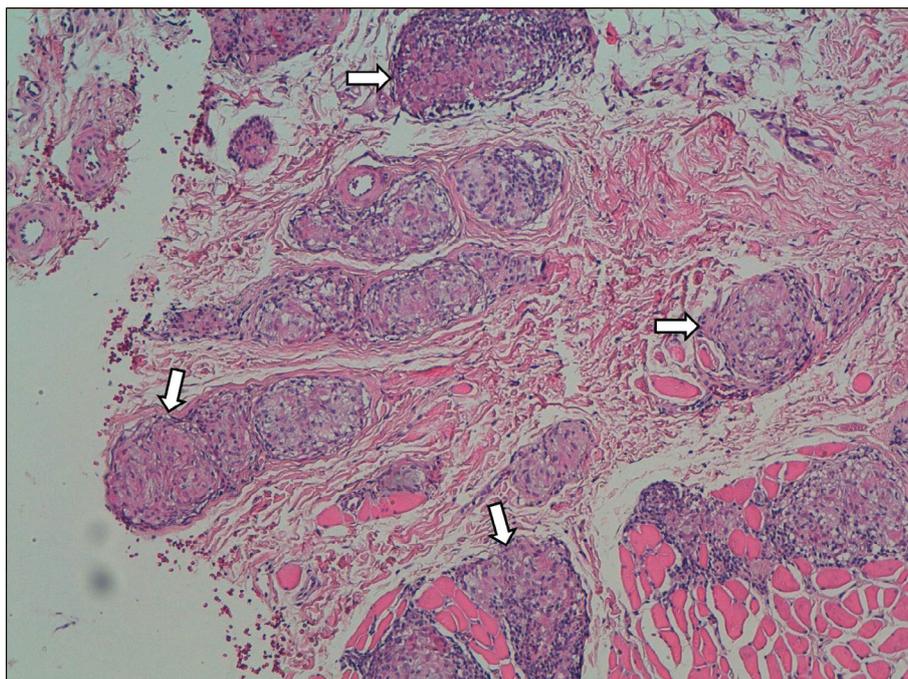
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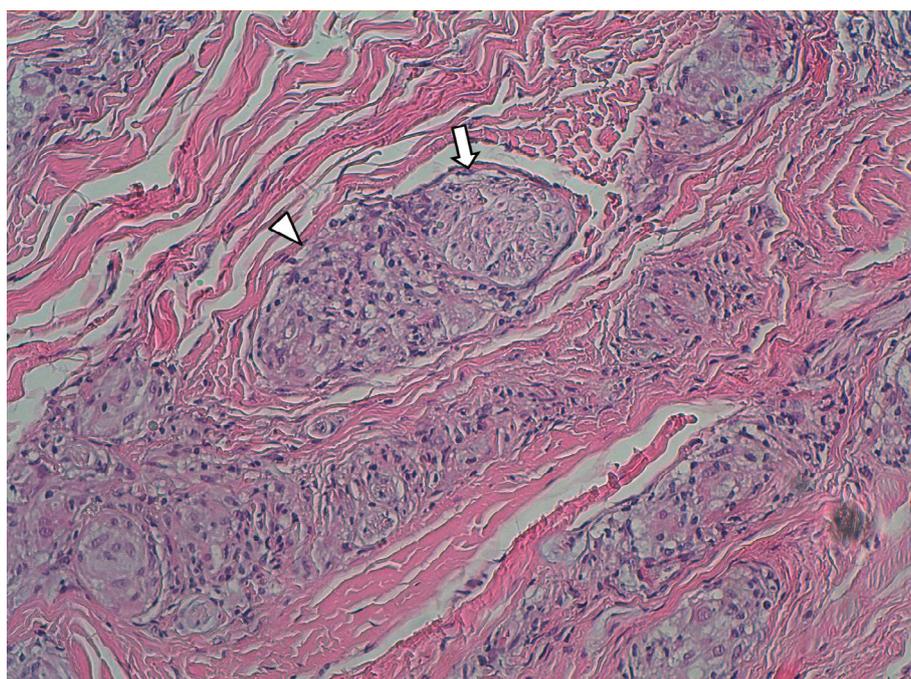
the last decades in developed and developing countries due to the improvement of hygienic conditions and provision of effective therapeutic treatment [1,2].

During 2016, the Spanish State Registry of Leprosy notified 11 new imported cases. In 4 of these 11, the clinic was multibacillary and in 7 was paucibacillary. The treatment used in 10 of the cases was the multi-therapy recommended by the WHO [3] and in one case another multi-therapy, which is not reflected in the National Epidemiological Bulletin. The treatment recommended by WHO includes three drugs for multibacillary forms (dapson, rifampicin and clofazimine) for 12 months and two drugs for paucibacillary forms (dapson and rifampin) for 6 months [4].

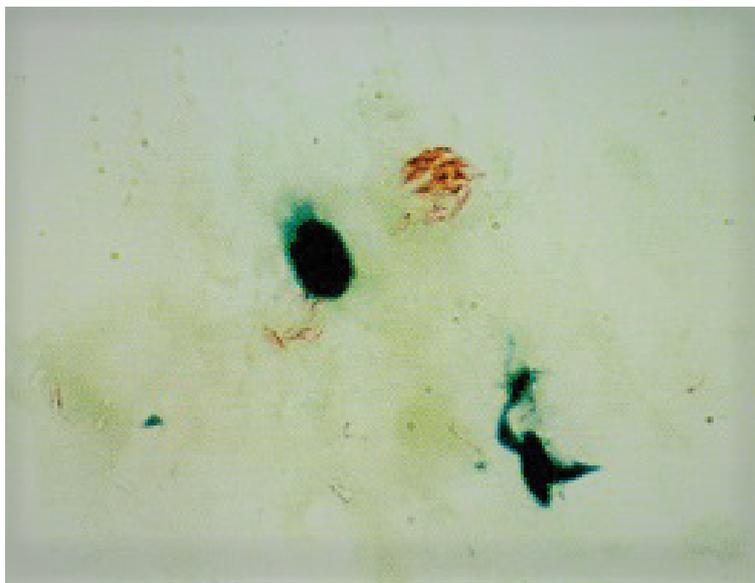
The geographical distribution is heterogeneous, but India reported 127,326 new cases accounting for 60% of the global new leprosy cases followed by Brazil with 26,395 (13%) and Indonesia with 17,202 (8%), being the rest from the sporadic world or limited to imported cases. In Europe, leprosy is not considered a public health problem. Most of the countries do not present cases and the few that are reported are mainly imported cases as it happens in Spain [4], but the fact that some cases as which present continue to appear makes us reflect on the lack of awareness of this disease, the mechanism of transmission or differences in the incubation period [5,6].



**Figure 1:** Multiple non-necrotizing granulomas (arrows) are observed surrounded by few lymphocytes located in the deep dermis that reach the underlying skeletal muscle (H & E 10X).



**Figure 2:** At higher magnification, perineural involvement (arrow) of the granulomas (arrowhead) is observed (H & E 20X).



**Figure 3:** Palatal biopsy with abundant BAAR in masses (globus).

It is thought that the mechanism of transmission occurs from person to person through respiratory secretions after close and hard-wearing contact. Some authors emphasize the possibility of existence of subclinical bacilliferous populations in the community [5,7]. This fact seems important to highlight the ignorance of the source of infection in our patients, in which no cases of leprosy were found in their close environment considering that they have not been in an endemic area for long periods or in contact with people with leprosy.

In the literature, we have found another case diagnosed in Spain that, as in ours, have also considered this problem [5]. This is an 81-year-old male from Malaga, where no leprosy antecedents or trips to endemic countries were found in his immediate surroundings [8].

## DISCUSSION AND CONCLUSION

These cases highlights the importance of several published works aimed at the early detection of possible cases of leprosy by studying the nasal exudate by PCR, since the nose is the main exit door of the bacilli. This study was conducted in people affected by untreated leprosy and in their domestic contacts. The results suggest an aerial transmission through aerosols and a high percentage of subclinical infection and asymptomatic carriers between intimate contacts, favouring the persistence of the disease. It is also possible that there are unknown reservoirs that maintain the life cycle of the bacteria without our knowledge, escaping our control.

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