CASE REPORT

New etiology of leprosy in Myanmar: another two patients

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Introduction

The Central Special Skin Clinic in Yangon General Hospital is the main specialist clinic of the National Leprosy Control Program in Myanmar. It takes part in the Drug Resistance Surveillance Program of WHO as a sentinel site in Myanmar. About 20 specimens from suspected drug resistant cases have been sent yearly since 2007 to the Japan Leprosy Research Centre to determine drug resistance. Two patients affected by Mycobacterium lepromatosis were detected through specimens sent in 2017.

A new etiology of Hansen’s disease, M. lepromatosis was reported in 2008. In Myanmar two patients with M. lepromatosis were reported in 2014, and now two more patients were identified during 2017. In this report, the two patients detected in 2017 will be described.

Case Reports

CASE 1

In 2016, a 68 year old male patient, residing in Bago Division came to the Central Special Skin Clinic (CSSC) with flesh coloured skin lesions over most of his body, for a year. He had a history of Hansen’s disease diagnosed more than 20 years previously and had taken dapsone monotherapy for more than 3 years. After that, he was free from skin lesions until last year, when he noticed that his skin became slightly thickened and skin nodules appeared gradually over most of the body.

At CSSC, he had a slit-skin smear examination, which showed a BI of 6+ and an MI of 5%. Both earlobes were slightly thickened and madarosis was also present, but there were no
He was treated as a lepromatous relapse and a biopsy was taken for drug resistance testing. The PCR tests undertaken at the Japan Leprosy Research Center in 2017 showed *M. lepromatosis*, but no mutation in the drug resistance determining regions (DRDR).

**CASE 2**

In 2013, a 24 year old male patient, living in Yangon came to CSSC, because of nodules on the ear lobes and thickening of the facial skin of 3 years duration. Both ulnar nerves and posterior tibial nerves were thickened. Slit-skin smears showed a BI of 5+, and an MI of 3%. He was diagnosed with lepromatous leprosy. During his first year of treatment, he experienced intermittent episodes of Erythema Nodosum Leprosum (ENL) and was treated with prednisolone, clofazimine, and chloroquine.

After completing 12 doses of MDT (MB), his skin smear result still showed a BI of 5+ but the MI was 0%. Because of the high BI, MDT (MB) was continued up to 24 doses. After completion of 24 doses, the BI was the same. Suspecting drug resistance, a biopsy was sent to the Japan Leprosy Research Center. The result, reported in 2017, showed *M. lepromatosis*, with no mutation in the DRDR.

**Method**

The slit-skin smear specimens were placed into 70% ethanol prefilled screw capped PCR tubes used for DNA extraction. Nucleotide sequencing of the drug resistance determining region in the *rpoB*, *folP1* and *gyrA* genes were determined using PCR and direct sequencing (Figure 1).

**Discussion**

Both of the patients infected with *M. lepromatosis* presented here had lepromatous leprosy with skin nodules as a clinical sign. This is inconsistent with previous reports from Mexico and a patient of Mexican origin studied in Arizona, both of whom had Diffuse Lepromatous Leprosy (DLL), which is characterised by diffuse infiltration but no lepromatous nodules. In a subsequent report, a patient with nodular lepromatous leprosy was infected with *M. lepromatosis*.

In our two cases there was a delayed response to MDT, but there was no mutation in the DRDR of *M. lepromatosis*. Although no drug resistance mutations have been seen so far in *M. lepromatosis*, one study of Mexican patients, analysed in Japan, did find some base changes in the DRDR of *M. lepromatosis*, but all mutations were silent.

These case reports suggest that *M. lepromatosis* is more widespread than previously thought. They were only discovered because of examinations done through the drug...
resistance surveillance programme, so it is important that this is expanded to many more cases, both new and relapsed, to give a more complete picture of the epidemiology of this new organism.

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References

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