

## An Under-Recognised Cause of Polyarthrititis: Leprosy

### Dear Editor,

Polyarthrititis is an uncommon manifestation of leprosy. We describe a case initially diagnosed with rheumatoid arthritis, leading to delayed treatment.

A 57-year-old Indonesian Chinese gentleman without known leprosy contact presented with peripheral inflammatory polyarthrititis for 2 years. Examination revealed tender metacarpo-phalangeal joints and synovitis of the wrists and ankles. Investigations showed raised white cell counts, positive rheumatoid factor and negative anti-cyclic citrullinated peptide (anti-CCP) antibodies. Radiographs of affected joints were normal. The patient was diagnosed with rheumatoid arthritis and treated with prednisolone, methotrexate and non-steroidal anti-inflammatory drugs.

Four months later, he developed numbness and hyperesthesia in all limbs, with thickened peripheral nerves. Nerve conduction tests demonstrated sensori-motor neuropathy.

Further history revealed rashes on his feet for a year. Multiple erythematous papules were present on his soles (Fig. 1). Leprosy was considered in view of the skin lesions and neuropathy with thickened nerves. Slit skin smears performed on a skin lesion on the left foot demonstrated



Fig. 1. Multiple erythematous papules present on both soles.

acid-fast bacilli with bacterial index: 6+ and morphological index: 1%. Histologically, Wade-Fite stain was positive showing acid-fast bacilli in the dermis. Treatment was started with rifampicin, clofazimine, dapsone and prednisolone for erythema nodosum leprosum in lepromatous leprosy.

It is important to be aware of leprosy in a patient from an endemic area such as Indonesia. Leprosy can present as inflammatory polyarthrititis similar to rheumatoid arthritis, with a prevalence of 4.4%, affecting both genders equally.<sup>1</sup>

Two types of lepra reactions are associated with arthritis. Type 1 reactions occur in borderline forms of leprosy after initiation of therapy. Type 2 reactions are due to immune complex deposition, which can occur in the skin or joints. Erythema nodosum leprosum (ENL) occurs in type 2 reactions, usually after initiation of treatment, and arthritis may occur concurrently. Our patient initially presented with polyarthrititis and was treated with prednisolone and methotrexate. He subsequently developed erythematous papules and nodules on his soles, together with neuropathy. Prior immunosuppressive therapy could have resulted in a more subdued presentation of ENL in this case.

The duration of arthritis ranges from 5 days to 14 years. Patients experience polyarthrititis affecting the wrists, with morning stiffness in 30% of patients.<sup>1</sup> All patients have polyneuritis,<sup>2</sup> thus a thorough re-examination is required when neurological symptoms appear. Up to 44% of leprosy patients have a positive rheumatoid factor but all have negative anti-CCP antibodies. Radiographs are normal or similar to rheumatoid arthritis.<sup>3</sup>

Rheumatoid arthritis and leprosy-related arthritis may share similar features but patients with leprosy-related arthritis have morning stiffness of a shorter duration, absence of extra-articular manifestations of rheumatoid arthritis, negative rheumatoid factor in most patients and unremarkable radiographs.<sup>1</sup> These features help to differentiate between the two. It is possible for leprosy to occur simultaneously with autoimmune arthritis, especially after treatment with anti-tumour necrosis factor (anti-TNF) therapies<sup>4</sup> but in this case, the patient did not receive such treatment.

Histology is the gold standard for diagnosing leprosy, with Wade-Fite stain showing acid-fast bacilli within the dermis or nerve fibres.

Patients with multibacillary leprosy are treated with rifampicin, clofazimine and dapsone for 12 months.<sup>5</sup> Patients with erythema nodosum leprosum require addition of daily clofazimine or thalidomide and those with arthritis require corticosteroids.

In conclusion, it is important to recognise leprosy-related arthritis and differentiate it from rheumatoid arthritis. The majority of patients with leprosy have a negative rheumatoid factor but a false positive result may occur in a minority. Definitive diagnosis and classification of leprosy requires a skin biopsy with Wade-Fite stain and slit skin smears.

Khor Jia Ker, <sup>1</sup>*MBBS, MRCP (UK)*, Jiun Yit Pan, <sup>1</sup>*FRCP (Edin), FAMS*, Nai Lee Lui, <sup>2</sup>*MBBS (Spore), MMed (Int Med), MRCP (UK)*, Hong Liang Tey, <sup>1</sup>*MBBS, MRCP (UK), FAMS*

<sup>1</sup>National Skin Centre, Singapore

<sup>2</sup>Singapore General Hospital, Singapore

Address for Correspondence: Dr Khor Jia Ker, National Skin Centre, 1 Mandalay Road, Singapore 308205.

Email: [kjker@nsc.gov.sg](mailto:kjker@nsc.gov.sg)

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