knee and ankle joints (Fig. 1B). After one injection of tocilizumab, serum CRP and SAA levels became normal and morning stiffness and shoulder pain improved. By March 2009, a total of five infusions of tocilizumab had been administered without any exacerbation of symptoms or any elevation of serum CRP or SAA levels. MMP3 reduced from 508-727 to 334 ng/ml. Ga-citrate scintigraphy also showed a marked reduction of uptake in the bilateral shoulders and hands, and in the left ankle joint (Fig. 1B). However, just before the sixth administration, cholecystitis occurred and tocilizumab treatment had to be stopped. At 3 months after the cessation, the disease activity flared up with shoulder pain and morning stiffness, leading to an increase in the methylprednisolone dose from 6 mg/day to 8 mg/day.

In this report, we demonstrated the ameliorative effect of tocilizumab on symptoms caused by RS3PE. To the best of our knowledge, this is the first report to evince the efficacy of tocilizumab for RS3PE. A response to low-dose corticosteroids and absence of relapse after 2 years of treatment are characteristics of RS3PE [5] but our patient was refractory to corticosteroids and then the present case was thought to be a rare one. Increased serum concentration of IL-6 has been observed in patients with RS3PE [2, 3], and therefore IL-6 inhibition with tocilizumab might constitute a novel strategy for treatment of RS3PE. Indeed, reported here, tocilizumab treatment resulted in a remarkable suppression of clinical symptoms, accompanied by a reduction in MMP3 levels as well as in Ga-citrate uptake in joints. Although tocilizumab treatment had to be discontinued due to the complication of cholecystitis in the patient, tocilizumab can be considered a viable option for treatment of refractory RS3PE.

Rheumatology key message
• The ameliorative effect of tocilizumab highlights the role of IL-6 in the development of RS3PE.

Acknowledgements
We thank Dr Yusuke Kuwahara, Dr Sumiyuki Nishida, Dr Toru Hirano and Dr Mari Kawai for clinical support.

Funding: This work was supported by the Program for Promotion of Fundamental Studies in Health Sciences of the National Institute of Biomedical Innovation.

Disclosure statement: T.K. holds a patent for tocilizumab. All other authors have declared no conflicts of interest.

Toshio Tanaka1, Keisuke Hagihara1, Yoshihito Shima1, Masashi Narazaki1, Atsushi Ogata1, Ichiro Kawase1 and Tadamitsu Kishimoto2

1Department of Respiratory Medicine, Allergy and Rheumatic Diseases, Osaka University Graduate School of Medicine and 2Laboratory of Immune Regulation, Osaka University Graduate School of Frontier Biosciences, Osaka, Japan

Accepted 5 November 2009

References

Rheumatology 2010;49:826–828
doi:10.1093/rheumatology/kep405
Advance Access publication 21 December 2009

Tropical rheumatology in a UK District General Hospital: a case report of leprosy presenting as acute vasculitis

Sir, In their recent editorial, Adebajo et al. highlighted the need for increased awareness of tropical illnesses to avoid problems of misdiagnosis and mismanagement [1]. Leprosy is a medical mimic and should be suspected in patients from leprosy-endemic areas, even in the absence of classical cutaneous features [2]. We wish to report a case of lepromatous leprosy, presenting as primary vasculitis to a UK District General Hospital.

A 23-year-old, previously well, Brazilian woman, presented to the general physicians with a 10-day history of sudden onset of polyarthritis, unresponsive to treatment with ibuprofen, and a diffuse necrotizing rash. She had lived in the UK for the past 4 years, with no recent travel abroad. Examination revealed fever (37.9°C), tachycardia (110 beats/min), tender axillary and inguinal lymphadenopathy and a symmetrical synovitis of elbows, wrists, ankles and MCP joints. She had widespread tender erythematous nodules over her face, arms and legs with truncal sparing (Fig. 1). There was an area of incipient necrosis over her right cheek.

Initial investigations revealed raised CRP of 191.8 mg/l (–6 mg/l), aspartate transaminase 180 IU/l (7–35 IU/l) and γ-glutamyl transpeptidase of 90 IU/l (5–50 IU/l). Routine biochemistry and full blood count was otherwise normal. Examination revealed fever (37.9°C), tachycardia (110 beats/min), tender axillary and inguinal lymphadenopathy and a symmetrical synovitis of elbows, wrists, ankles and MCP joints. She had widespread tender erythematous nodules over her face, arms and legs with truncal sparing (Fig. 1). There was an area of incipient necrosis over her right cheek.

Initial investigations revealed raised CRP of 191.8 mg/l (–6 mg/l), aspartate transaminase 180 IU/l (7–35 IU/l) and γ-glutamyl transpeptidase of 90 IU/l (5–50 IU/l). Routine biochemistry and full blood count was otherwise normal.

Correspondence to: Toshio Tanaka, Department of Respiratory Medicine, Allergy and Rheumatic Diseases, Osaka University Graduate School of Medicine, 2-2 Yamada-oka, Suita City, Osaka 565-0871, Japan.
E-mail: ttanak@imed3.med.osaka-u.ac.jp
Fig. 1 Vasculitic rash affecting extensor surface of left elbow (A); skin biopsy showing perineural and perivascular granulomatous inflammation with haematoxylin and eosin staining (B); and Wade–Fite staining demonstrating multiple acid-fast bacilli diagnostic of lepromatous leprosy (C).

normal. Electrocardiograph confirmed a sinus tachycardia and a chest X-ray was normal.

The patient became increasingly unwell with persistent pyrexia and peri-orbital inflammation. A working diagnosis of vasculitis was made and she was given two intravenous pulses of 1 g methylprednisolone on Days 3 and 5 of admission. This empirical treatment was commenced whilst awaiting results of further investigations, including a skin biopsy. There was marked improvement of the rash within 48 h but on Day 5 she developed numbness in a stocking distribution with preserved reflexes and power.

Normal or negative investigations included ANAs, ANCAs, RF, creatinine kinase, complement, throat swab, anti-streptolysin O titre, EBV and CMV serology and urine microscopy.

Skin biopsy showed perivascular and perineural necrotizing granulomatous inflammation. Wade–Fite staining confirmed the presence of multiple acid-fast bacilli clustered in nerve endings (Fig. 1). A diagnosis of lepromatous leprosy with erythema nodosum leprosum was made and the patient was transferred to The Hospital of Tropical Medicine, where combination therapy of rifampicin, dapsone, clofazimine and prednisolone was commenced.

Musculoskeletal complications of leprosy are common [3] and range from arthralgia to Charcot’s joints [3, 4]. If arthritis is present, a symmetrical small-joint polyarthritis mimicking RA is frequently found and the combination of arthritis, neurological involvement and skin lesions can be misinterpreted as primary vasculitis [4]. The subsequent diagnostic delay can be a number of years, even in countries with endemic leprosy, such as India [5–8]. Untreated leprosy results in severely reduced quality of life, mainly due to diffuse irreversible nerve damage [9]. Moreover, the use of systemic immunosuppressive agents for a presumed non-infective condition can impact on the disease activity and progression to the more severe lepromatous form of leprosy [8]. Features of lepromatous leprosy on general physical examination include widespread poorly defined macules, peripheral sensory neuropathy and wrist and foot drop. Conversely, paucibacillary tuberculoid leprosy is associated with well-circumscribed hypopigmented lesions, palpable nerves due to granulomatous inflammation and associated loss of nerve function.

Superimposed on chronic infection with Mycobacterium leprae, patients can experience acute immune-mediated hypersensitivity ‘reactions’ often triggered by treatment. Erythema nodosum leprosum is caused by humoral (type III) hypersensitivity and is a systemic disorder comprising uveitis, neuritis, arthritis, dactylitis, lymphadenitis and orchitis. These features are found in our case, highlighting the fact that reactions can occur prior to treatment. This type of reaction is more common in patients with multi-bacillary lepromatous leprosy.

This case highlights two important points. First, the need to investigate for underlying causes in acute vasculitis. Second, with increasing globalization, leprosy can present with musculoskeletal manifestations even in non-endemic areas. Leprosy should be excluded in any patient presenting with the combination of arthritis, skin and nerve involvement in any migrant or returning traveller from endemic areas, including Brazil, Madagascar, Mozambique, India and Nepal.

**Rheumatology key message**

- Leprosy should be considered in migrants and travellers presenting with rheumatological symptoms, even after years of leaving endemic areas.

**Disclosure statement:** The authors have declared no conflicts of interest.

**Anushka Soni**¹, **Roope Manhas**¹, **Lawrence John**², **Lindsay Whittam**³ and **Lyn Williamson**¹

¹Department of Rheumatology, ²Department of Histopathology and ³Department of Dermatology, Great Western Hospital, NHS Foundation Trust, Swindon, UK

Accepted 2 November 2009

Correspondence to: Anushka Soni, The Great Western Hospital, NHS Foundation Trust, Marlborough, Swindon SN6 8BB, UK. E-mail: anushkasoni@doctors.net.uk

**References**


neuritic leprosy—a rheumatologist’s dilemma.