

# A leg with an ulcer

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## CASE REPORT

An 87-year-old man came to the Dermatology Outpatient Clinic with a painless ulcer on his left lower leg, which had slowly progressed over eight months. It started with a papule which subsequently erupted, slowly increased in size and became an ulcer. His medical history revealed a 'calcified primary complex' on a chest X-ray made in 1945 and rheumatoid arthritis (RA). For the past 2.5 years he had been treated for his RA with prednisone and methotrexate (MTX) during which the ulcer had appeared. On dermatological examination there was an undermined ulcer measuring 1.5 x 2 cm with yellow purulent exudate (figure 1). There were no signs of venous insufficiency and duplex ultrasound showed normal vascular function. He was referred to the Internal Medicine Department for further analysis and treatment. He had no complaints. Physical examination revealed no abnormalities. Laboratory tests were normal besides an erythrocyte sedimentation rate (ESR) of 23 mm/h. A human immunodeficiency virus (HIV) test was negative. A chest X-ray showed linear fibrotic markings in both lungs. An MRI of the left lower leg showed a lesion ventrolateral from the distal fibula with continuation to the overlying skin and without signs of osteomyelitis.

**Figure 1.** An undermined ulcer on the lateral side of the left lower leg measuring 1.5 x 2 cm with yellow purulent exudate



## WHAT IS YOUR DIAGNOSIS?

See page 89 for the answer to this photo quiz.

## DIAGNOSIS

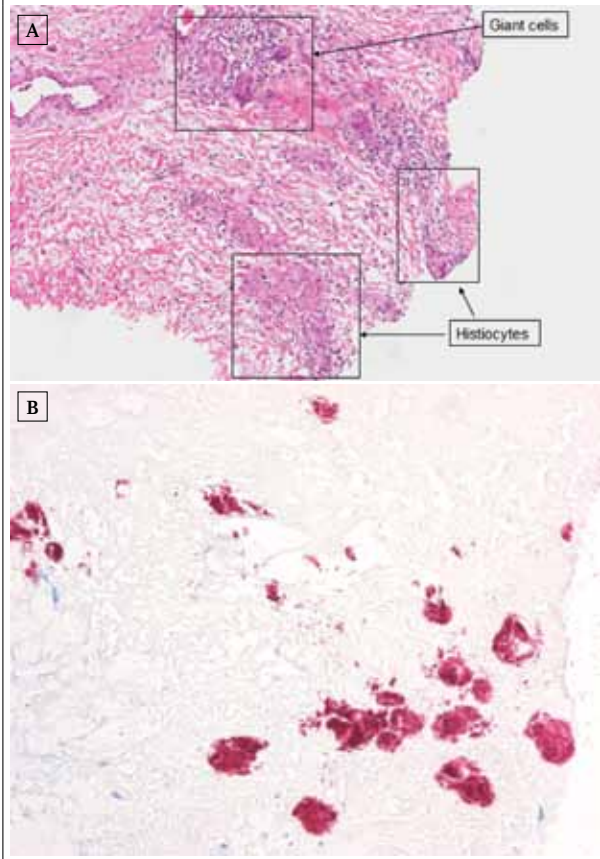
This report describes a rare presentation of cutaneous tuberculosis (TB) localised on the left lower leg. A skin biopsy showed granulomatous inflammation in the dermis and on Wade-Fite staining (modified Ziehl-Nielsen) many mycobacteria were seen (figure 2). Both nucleic acid amplification and tissue culture were positive for *Mycobacterium tuberculosis* sensitive to all antituberculous drugs. There was no active pulmonary tuberculosis. The TB infection in our patient had been latent for a period estimated to be more than 65 years. Reactivation was

most likely due to the immunosuppressive therapy in combination with his increasing age. Standard quadruple therapy was initiated consisting of pyrazinamide, isoniazid, ethambutol and rifampicin daily for two months followed by four months of continuation therapy with isoniazid and rifampicin. Treatment was intensified with ethambutol and moxifloxacin for another six months due to the formation of an underlying abscess which was shown on another MRI scan. This resulted in a complete cure 15 months after start of the treatment.

Cutaneous TB accounts for 1 to 2% of all TB cases.<sup>1</sup> This can occur after primary infection or, possibly after many years, by reactivation of latent infection. There are various clinical presentations such as scrofuloderma, lupus vulgaris, tuberculosis verrucosa cutis and tuberculous gumma. Our patient had a tuberculous gumma which compromises about 5% of all cases of skin TB.<sup>2</sup>

Tuberculosis gumma or metastatic tuberculous abscesses develop as a result of haematogenous metastasis. It can be distinguished from the resembling scrofuloderma because there is no underlying tuberculous focus such as a bone or lymph node. It mainly manifests in immunocompromised patients; however, several cases have been described in immunocompetent persons<sup>3</sup> whereas others have reported gummas at the site of previous sterile trauma.<sup>4</sup> This cases emphasises the importance of considering cutaneous TB in patients with unexplained dermatological lesions, especially when the person is immunocompromised.

**Figure 2.** Biopsy from the bottom of the ulcer with (A) granulomatous inflammation with giant cells and histiocytes (200x magnification) and (B) a Wade-Fite staining (modified Ziehl-Nielsen) showing many mycobacteria (200x magnification)



## REFERENCES

1. Umopathy KC, Begum R, Ravichandran G, Rahman F, Paramasivan CN, Ramanathan VD. Comprehensive findings on clinical, bacteriological, histopathological and therapeutic aspects of cutaneous tuberculosis. *Trop Med Int Health*. 2006 Oct;11(10):1521-8.
2. Kumar B, Muralidhar S. Cutaneous tuberculosis: a twenty-year prospective study. *Int J Tuberc Lung Dis*. 1999 Jun;3(6):494-500.
3. Almagro M, Del Pozo J, Rodriguez-Lozano J, Silva JG, Yebra-Pimentel MT, Fonseca E. Metastatic tuberculous abscesses in an immunocompetent patient. *Clin Exp Dermatol*. 2005 May;30(3):247-9.
4. Vidal D, Barnadas M, Perez M, Coll P, Alomar A. Tuberculous gumma following venepuncture. *Br J Dermatol* 2001 Mar;144(3):601-3.