Atypical mycobacterial infection in insulin injection sites

A 65-year-old man with longstanding type 2 diabetes on subcutaneous insulin therapy presented with multiple abdominal wall abscesses. The abscesses were drained and he received 1 week’s course of co-amoxiclav based on tissue culture which grew *Serratia marcescens*. However, similar lesions recurred over the next 3 months. He did not have fever and was otherwise well. Glycaemic control was suboptimal (HbA1c 64–75 mmol/mol). Examination showed multiple erythematous papules and nodules of varying sizes scattered over the lower abdomen (Figure 1a). Some nodules were fluctuant and discharged purulent fluid. On further questioning it became evident that the lesions corresponded to insulin injections sites.

Biopsy of a larger nodule showed dense inflammation in the superficial and deep dermis, with focal collections of multi-nucleated histiocytes forming granulomas. Ziehl–Neelsen stain showed an isolated acid-fast bacillus. However, culture was negative for acid-fast bacilli after 8 weeks. Molecular testing for *Mycobacterium tuberculosis* was negative. Stains and cultures for bacteria and fungus were negative. A diagnosis of cutaneous atypical mycobacterial infection was made. Ciprofloxacin and clarithromycin were empirically started. All insulin vials, syringes and needles were replaced.

The lesions gradually resolved with post-inflammatory hyperpigmentation after 38 weeks of therapy (Figure 1b).

Atypical mycobacterium is an infrequent aetiology of skin infections associated with injections such as those of mesotherapy,1,2 insulin injections3,4 and insulin pump.5,6 Diabetes and the reuse of non-disposable needles in the past are predisposing factors3 but cases have been reported even with disposable needles.4 The reason for such infection in this patient was unclear as he used alcohol swabs before injections and denied reusing the needles. There were no other similarly affected patients to suggest a contaminated batch of insulin preparation. It is important to consider mycobacterial infection in recurrent or persistent cutaneous abscesses despite conventional antibiotic therapy among patients with diabetes on insulin injections.

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Figure 1. (a) Multiple skin lesions at the insulin injection sites at presentation. (b) Improvement after 38 weeks of treatment.
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References


