

Non-healing tuberculous ulcer of the great toe in a health care professional

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Abstract

This case report describes a 25-year-old health care professional with a non-healing ulcer of the great toe, not responding to two years of conventional treatment. The ulcer was diagnosed as a tuberculous ulcer of the great toe. Rapid healing of the ulcer was observed in response to oral anti-tuberculosis (TB; anti-Koch) therapy and local application of 3% citric acid ointment for 25 days. Complete healing of the ulcer was noted without any complications.

Keywords: non-healing ulcer, tuberculosis, citric acid treatment.

Introduction

Cutaneous tuberculosis (TB) is essentially an invasion of the skin by *Mycobacterium tuberculosis*. Cutaneous TB is a relatively uncommon form of extrapulmonary TB. Even in India where TB is commonly seen, cutaneous TB is very rare

(<0.1% of all TB cases). We report an interesting case of a tuberculous ulcer of the great toe.

Case report

A 25-year-old male doctor (MBBS graduate) presented with an ulcer of the great toe, which had failed to heal over two years. In those two years he had received numerous antibiotics from different classes as well as daily wound care with antiseptic agents (hydrogen peroxide and povidone iodine as Betadine). The patient did not chew tobacco or smoke and did not consume alcohol. Physical examination revealed a single ulcer on the right great toe (Figure 1).

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Figure 1. TB ulcer of the great toe – before application of citric acid ointment.

All haematological investigations were within normal limit. An x-ray of the chest was normal. The culture and sensitivity of pus discharge from the ulcer yielded *Staphylococcus albus* susceptible to ampicillin, erythromycin, gentamicin, amikacin, tetracycline, carbenicillin, cloxacillin, cephalixin, cefuraxime, ciprofloxacin, pefloxacin and vancomycin, and resistant to co-trimoxazole. Acid fast staining of pus discharge from the ulcer revealed numerous acid fast bacilli (4+). ELISA for anti-

Mycobacterium tuberculosis antibodies showed 140 units of IgG/ml and 1.0 of IgM.

Based on these results, the case was diagnosed as a non-healing tuberculous ulcer of the great toe. As there had been no response to various antibiotics and local wound care over two years, a decision was made to start anti-TB (anti-Koch) treatment. Rifampicin 450 mg, isoniazide 300 mg, pyrazinamide 1.5 gm and ethambutol 800 mg were used. For local wound care, daily application of 3% citric acid ointment was substituted for the previous antiseptic agents. This treatment resulted in complete healing of the ulcer after 25 applications of the citric acid ointment (Figure 2). No adverse effects of the 3% citric acid ointment were noted. The anti-Koch therapy was continued for a full six months.



Figure 2. TB ulcer of great toe – healed ulcer after 25 applications of citric acid ointment.

Discussion

Cutaneous TB is a relatively uncommon form of extra-pulmonary TB. In most of the reported cases, it has been primary cutaneous TB that occurs as a result of primary inoculation of TB bacilli in individuals with no previous exposure to tuberculous infection, and often affecting health care professionals¹⁻⁴. In our case, fomites may have caused this primary cutaneous TB through a skin abrasion on the great toe.

The case was treated by conventional antibiotics and local wound care therapy for two years without the possibility of TB being considered as there were normal haematological findings and no other clinical symptoms suggesting TB.

After the confirmation of diagnosis, anti-Koch therapy and citric acid were used. The choice of citric acid was based on literature showing it can be highly effective in the treatment of a variety of chronic wound infections not responding to conventional parenteral or oral antibiotic therapy and more usual local wound care management⁵⁻⁷. This approach resulted in rapid healing of the ulcer.

These results indicate that when an ulcer does not heal in spite of conventional antibiotic therapy and local wound care for long durations, chronic TB ulceration needs to be considered in a country where TB is endemic, or in those either visiting or migrating from such a region.

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