Annular serpiginous lesions with decreased sensation

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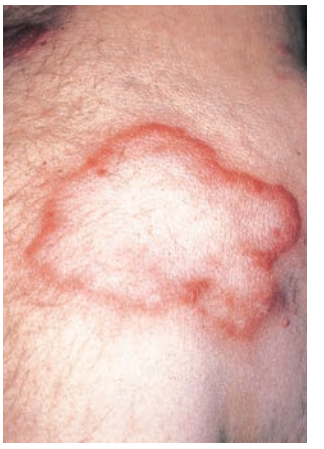
A man presents with three annular lesions that have central areas of diminished sensation. What are these lesions and how should they be treated?

Over a two-year period, a 54-year-old missionary developed on his trunk three persistent, annular lesions measuring up to 5 cm in diameter. Each lesion had an elevated, oedematous, serpiginous border that had slowly migrated, leaving a central pale area that had diminished sensation (Figure 1). Skin biopsy from the annular border revealed multiple dermal granulomas with admixed lymphocytes and occasional plasma cells. Nerves in the deep dermis were inflamed (Figure 2).



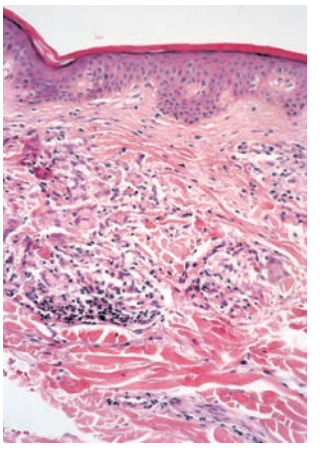


Figure 1 (left). Serpiginous annular lesion on the patient's trunk.
Figure 2 (right). Granulomatous dermal inflammation with lymphocytic component extending through the dermis and involving a deep dermal nerve.

Diagnosis

The differential diagnosis of slowly evolving, annular, serpiginous lesions that have granulomatous pathology includes the following.

- **Granuloma annulare** is associated with persistent annular lesions with a papular border. The lesions are typically localised to the limbs and are asymptomatic. Skin biopsy shows palisading granulomas with central degeneration of collagen and mucinosis.
- **Actinic granuloma and granuloma multiforme** are characterised by annular lesions with a narrow elevated rim and central pale skin. The granulomas are seen in actinically damaged skin or as a result of chronic exposure to infrared wavelengths. Skin biopsy of the rim reveals prominent collections of histiocytes that are multinucleated and contain damaged elastic fibres.
- **Syphilis, tuberculosis and leishmaniasis** may present as isolated annular lesions with central scarring. On biopsy, such lesions have multiple granulomas, as well as caseation necrosis, plasmacytosis and fibrosis in varied combinations. Diagnosis often requires culture for bacteria, PCR (polymerase chain reaction) analysis for organisms and serological tests for syphilis.
- **Tuberculoid leprosy** is the correct diagnosis and is usually associated with annular lesions that are solitary or few in number and asymmetrically distributed. Peripheral nerves may be enlarged and palpable. Major clues to diagnosis are areas of decreased sensation and the skin biopsy demonstrating granulomas that destroy cutaneous nerve bundles.

In this case, the presence of lymphocytes indicated that the lesion was not a polar example of tuberculoid leprosy; it was classified as borderline tuberculoid leprosy. Stains for leprosy bacilli were negative. This pattern of skin involvement is seen in individuals who have an intact immune system to the bacilli. In contrast, patients who lack specific immunity to leprosy bacilli have widespread nodules that on biopsy have sheets of histiocytes filled with numerous bacilli (lepromatous leprosy).

The most frequent treatment used for tuberculoid leprosy is a combination of rifampicin (Rifadin, Rimycin) 600 mg monthly and dapsone 100 mg daily for six months. More recently in paucibacillary lesions, a single dose of 600 mg rifampicin, 400 mg ofloxacin and 100 mg of minocycline (Akamin, Minomycin) – known as ROM – has been used with success. Patients with borderline tuberculoid leprosy need to be monitored for evidence of reversal reaction and increased lymphocytic and delayed hypersensitive activity that may increase nerve damage. Prednisone (Panafcort, Sone) may need to be added in this circumstance.

Keypoint

Annular lesions that are associated with decreased sensation should be considered as potentially representing leprosy. Clinical review and skin biopsy may help to confirm the diagnosis. MT

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