A tattooed butterfly as a vector of atypical *Mycobacteria*

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We report the first case of cutaneous inoculation of atypical *Mycobacteria* secondary to tattooing. The diagnosis of atypical *Mycobacteria* infection of the skin was confirmed on the basis of the clinical and histologic appearance, the detection of acid-fast bacilli on Ziehl-Neelsen stain, and positive polymerase chain reaction. The medical complications of tattooing, which are manifold, are briefly summarized. This case emphasizes the need for federal regulation of tattooing, which is an invasive procedures associated with infectious and noninfectious complications. (J Am Acad Dermatol 2003;48:S73-4.)

CASE REPORT

A 27-year-old woman was seen in a dermatologic clinic by one of the authors (R. W.) for evaluation of erythematous nodules near a tattoo on her right leg. The leg had been tattooed 3 months before this presentation. She was afebrile and asymptomatic but was concerned about the nodules.

Examination revealed a tattoo in the shape of a butterfly consisting of dark-blue outlining the wings and body, and green and yellow colors within the linings. There were 3 red, smooth, nontender nodules near and within the tattoo, one was 3 cm in size and 2 smaller ones were 1 cm in size (Fig 1).

A biopsy specimen stained with hematoxylin and eosin showed histiocytic granulomas with a few multinucleated giant cells and surrounding dense lymphocytic infiltrate (Fig 2). Ziehl-Neelsen stain clearly revealed acid-fast organisms. In a second biopsy performed 1 month later, no acid-fast micro-organisms were detected and a culture for *Mycobacteria* from a part of this fresh lesional biopsy specimen was negative. A part of this biopsy specimen was sent for polymerase chain reaction analysis. Analysis of the IS 6110 sequence, specific for the *M. tuberculosis* complex, was negative but analysis of the 65-kd antigen gene, common to all *Mycobacteria*, was positive.

The diagnosis of atypical *Mycobacteria* infection of the skin was, thus, confirmed on the basis of the clinical and histologic appearance, the detection of acid-fast bacilli on Ziehl-Neelsen stain, and positive polymerase chain reaction. The patient refused systemic antibiotic therapy. There was no apparent change in the size or color of the nodules since she was first seen by us 3 months earlier.

DISCUSSION

In the United States and the rest of the Western world, body art has moved from the fringes of society into the mainstream. Although tattooing and piercing are invasive procedures, tattoo artists and establishments in many communities are not subject to health inspections; tattoo artists are not required to be trained in anatomy, infection control, or elementary medical precautions; and the dyes and equipment used have not received Food and Drug Administration or other governmental approval. The medical complications of tattooing are manifold1-9 and can be classified as either infectious or noninfectious disorders. Among the noteworthy noninfectious complications are aseptic inflammation of the tattoo sites from the trauma of punctures and the depositing of foreign material into the skin (these are temporary and normal reactions)10-17; allergic hypersensitivity reactions11-12; photoallergic reactions13-15; and pseudolymphomatous,16,17 lichenoid,18 eczematous,19,20 and urticarial reactions.21 Although rare, malignant lesions have been reported to occur in tattoos. There are 7 documented cases in the English-language literature of malignant melanoma occurring in tattoos,22 and less reported but probably not fewer cases of basal cell carcinoma23 and squamous cell carcinoma.24 In addition, there are reports on psoriasis, lichen planus,25
The transmission of infectious diseases is certainly of greater significance to public health than the above sequelae of tattooing. These include local and systemic infections. Pyogenic *Staphylococcus* and *Streptococcus* infections (erysipelae, cellulitis, and gangrene necessitating amputation) were the most common and alarming complications historically.\(^1\) The gravity of the situation has changed since the advent of antibiotics, and now systemic infectious diseases associated with tattooing have become a major public health concern, example of which include syphilis,\(^6\)-\(^9\) viral hepatitis,\(^28\)-\(^30\) HIV,\(^31\) leprosy,\(^32\)-\(^36\) and tuberculosis.\(^37\)

Currently reported localized cutaneous infections include verruca vulgaris,\(^38\),\(^39\) verruca plana,\(^40\) tinea,\(^41\),\(^42\) molluscum contagiosum,\(^43\) and vaccinia.\(^44\)

The inoculation of atypical *Mycobacteria* secondary to tattooing has, to our knowledge, not been reported before. This type of infection should be added to the ever-growing list of infections transmitted via tattooing: it again emphasizes the need for federal regulation of body art.

Dr I. Solar, head of the Molecular Biology Unit at the Department of Pathology, Tel-Aviv Sourasky Medical Center, performed the polymerase chain reaction analysis.

**REFERENCES**