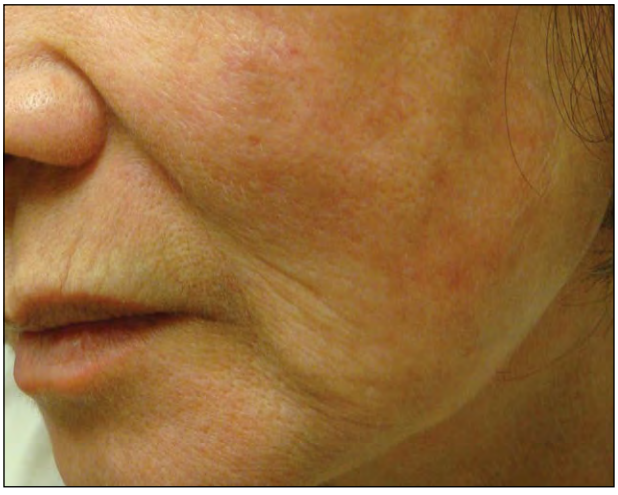
# What Is Your Diagnosis?



A 57-year-old Vietnamese woman presented with facial redness on the left cheek of 6 months' duration. She attributed the redness to an allergic reaction from eating seafood. Treatment with oral doxycycline was not effective. While living in Vietnam, she had been treated with a combination of clobetasol propionate and neomycin cream 0.05%.

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# The Diagnosis: Hansen Disease (Leprosy)

The patient initially presented with facial redness (Figure 1). Examination 2 months later in Mississippi revealed annular erythema and a mild eczematous eruption on the lower leg (Figures 2–5). Treatment with desoximetasone cream 0.25% was not successful. A biopsy performed on a follow-up visit revealed a superficial and deep perivascular lymphocytic infiltrate. A drug eruption or viral exanthem was suspected. Testing for Lyme disease and serologic studies for lupus erythematosus were negative. Direct immunofluorescence was noncontributory. A biopsy submitted for routine histology revealed epithelioid cell granulomas, some surrounding nerves. Ziehl-Neelsen stain revealed acid-fast organisms within granulomas, confirming a diagnosis of Hansen disease (leprosy).

The earliest descriptions of leprosy are from India (600 BC). The disease spread to Europe in the 4th century with a peak incidence in the 13th century. *Mycobacterium leprae* was discovered by G.H. Armauer Hansen in 1873 and was the first of the mycobacteria to be associated with skin disease.[1] Although leprosy is relatively rare in the United States, millions of infected patients have been reported worldwide, with approximately 1 case per 10,000 individuals globally.[2] Frequent travel to and immigration from endemic areas in Asia, Africa, and South America (Brazil, India, Madagascar, Mozambique, Myanmar, and Nepal [in order of descending frequency]) have led to occasional cases encountered in New York, California, and Florida; endemic disease also has been reported in Louisiana, Texas, and Hawaii. Of note, indigenous cases of leprosy also have been reported in the Mississippi Delta.[2,3] There are approximately 6500 patients with leprosy in the United States and most patients acquired the infection outside the country; approximately 3300 of these cases require active medical management.[4]

Leprosy is thought to be an aerosol-transmitted disease spread by infected nasal secretions.[5] The incubation period ranges from several months to many decades. Skin lesions and nervous system involvement are characteristic of leprosy.[5] Because early lesions may be subtle in their manifestation, leprosy can be easily overlooked if it is not considered in the clinical differential diagnosis. Early cases may have a nonspecific clinical appearance; however, as lesions progress,

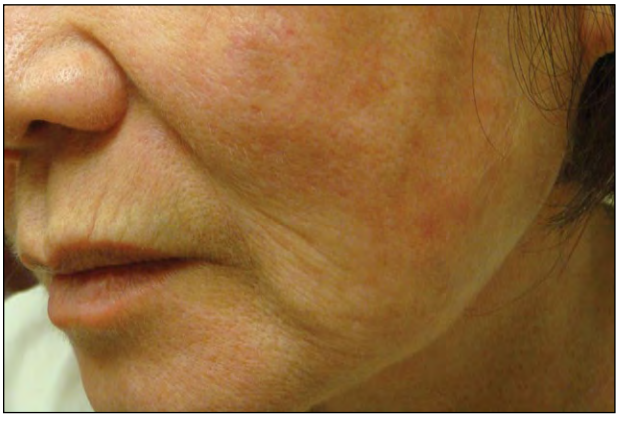

**Figure 1.** A 57-year-old Vietnamese woman with erythema on the left cheek of 6 months' duration.

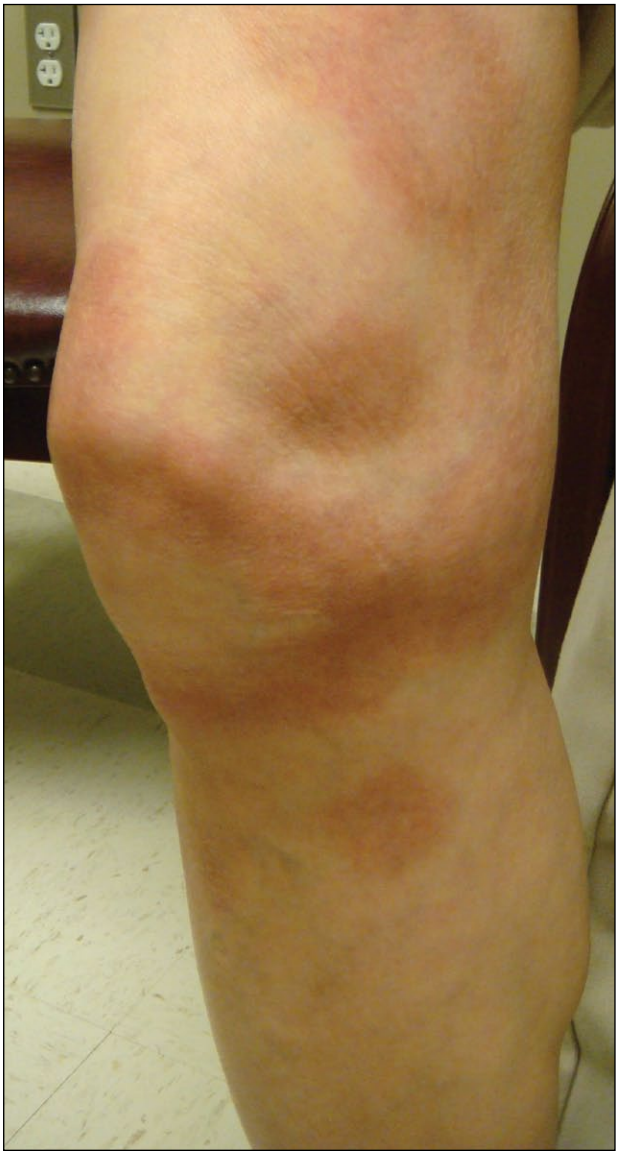

**Figure 2.** Nonspecific erythema and mild eczematous eruption on the right lower leg.

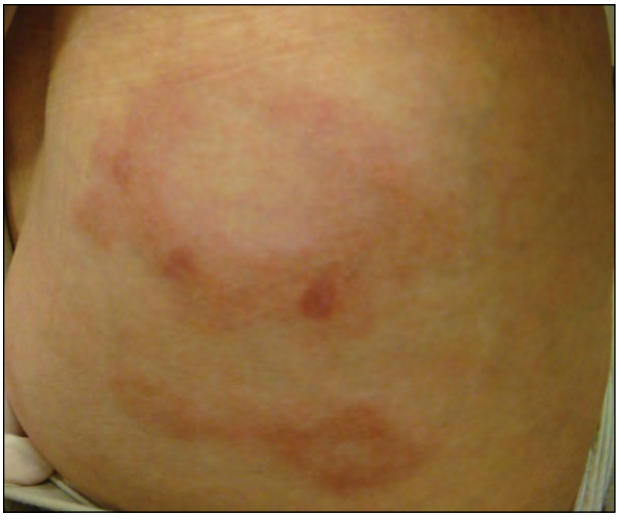

**Figure 3.** Annular, nonspecific, erythematous eruption surrounding an area of hypopigmentation on the right posterolateral back. A linear erythematous lesion is visible beneath the annular eruption.

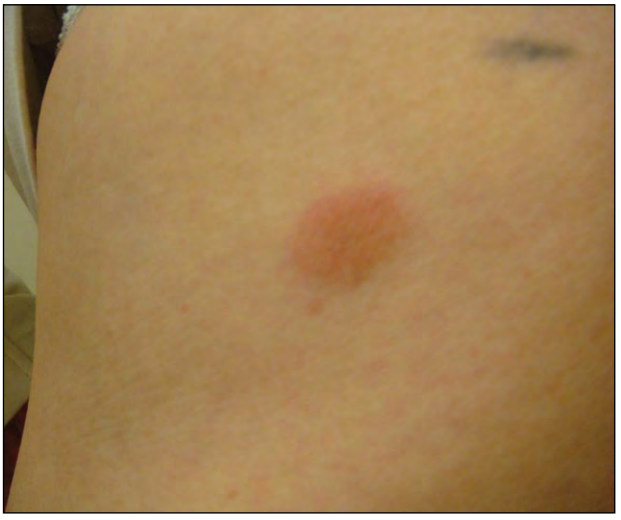

**Figure 4.** Circular nonspecific erythema.

## World Health Organization Therapy Guidelines for Leprosy Treatment

| | Treatment Regimen | |
|---|---|---|
| **Disease Classification** | **Adults (50–70 kg)** | **Children (10–14 years)** |
| Paucibacillary (single skin lesion) | Rifampicin (600 mg), ofloxacin (400 mg), and minocycline (100 mg) with one-time dose of all 3 medications together | Rifampicin (300 mg), ofloxacin (200 mg), and minocycline (50 mg) with one-time dose of all 3 medications together |
| Paucibacillary (2–5 skin lesions) | Dapsone (100 mg daily[a]) and rifampicin (600 mg once monthly) (supervised 6-month regimen) | Dapsone (50 mg daily) and rifampicin (450 mg once monthly) (supervised 6-month regimen) |
| Multibacillary (>5 skin lesions) | Dapsone (100 mg daily[a]), clofazimine (50 mg daily[a]), rifampicin (600 mg once monthly), and clofazimine (300 mg once monthly)(supervised 12-month regimen) | Dapsone (50 mg daily), clofazimine (50 mg every other day), rifampicin (450 mg once monthly), and clofazimine (150 mg once monthly) (supervised 12-month regimen) |

[a]Self-administered in adults; administration must be supervised in children.

Data from the World Health Organization.[4]

hypopigmentation and numbness begin to develop.[1] Leprosy often involves the facial nerves. Commonly, it also occurs in the ulnar and median nerves, giving rise to clawhand; the common peroneal nerve, leading to foot-drop; and the posterior tibial nerve, resulting in clawfoot and plantar insensitivity. Well-developed annular and hypopigmented lesions occur in association with granulomas.[1]

Leprosy usually is treated with a multidrug therapy regimen instituted by the World Health Organization that consists of several effective chemotherapeutic agents against *M leprae* including dapsone, rifampicin,

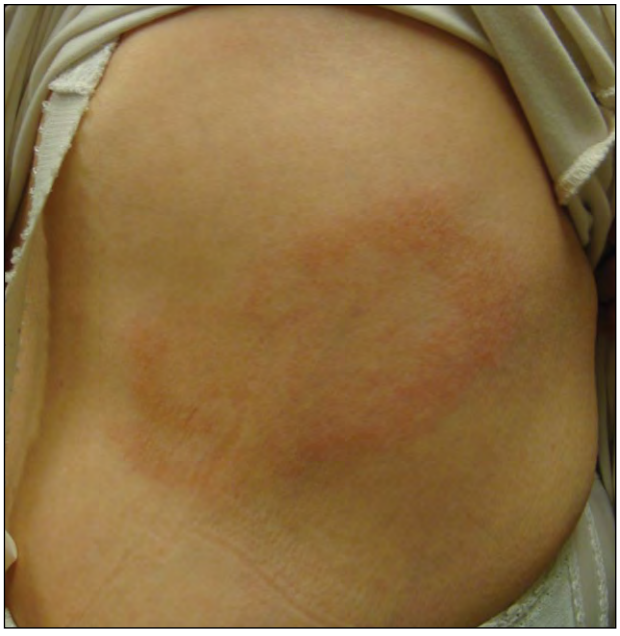

**Figure 5.** Annular, nonspecific, erythematous eruption on the right upper lateral back.

and clofazimine.[4] Rifampicin is the most effective bactericidal drug against M *leprae*. Clofazimine, which is minimally bactericidal with some anti-inflammatory properties, administered in combination with dapsone substantially decreases the risk for rifampicin drug resistance.[6] The World Health Organization advocates for the treatment of paucibacillary disease with 2 to 5 skin lesions with a combination of 2 drugs, whereas multibacillary disease is managed with triple-drug therapy, as shown in the Table.[4] For optimal results, careful follow-up is needed. Our patient was lost to follow-up for a short period of time. The stigma of leprosy often prevents patients from returning for follow-up.[7]

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