

Denouement and Discussion

Early Congenital Syphilis

Although the result from the maternal RPR test was negative, early congenital syphilis (ECS) was suspected based on the mucocutaneous lesions. Rapid plasma reagin of the child's serum was reactive at a dilution of 1:32, and the *Treponema pallidum* hemagglutination assay result was also positive. The skin biopsy showed a lichenoid dermatitis with scattered plasma cells and swollen endothelial cells. Immunohistochemical analysis with a specific antibody against *T pallidum* led to the identification of spirochetes in the epidermis (**Figure 3**), confirming the diagnosis of ECS.

Serial dilutions of the maternal serum were performed; her RPR test was reactive with a titer of 1:125; and a prozone phenomenon was confirmed as the cause of the previous false-negative result. The child was treated with intravenous aqueous crystalline penicillin G. The signs and symptoms, including skin lesions, resolved within days of treatment initiation. No sequelae were detected during 2 years of follow-up.

Congenital syphilis is usually acquired by transplacental transmission, although infection can also occur during delivery through contact with genital lesions. *T pallidum* dissemination in the fetus can lead to prematurity, nonimmune hydrops, intrauterine death, and the involvement of many organs. Congenital syphilis has been divided into ECS, which occurs within the first 2 years of life, and late congenital syphilis, whose features appear after 2 years and are the destructive residua of early lesions (eg, saddle-nose deformity and dental anomalies). Common manifestations of ECS are hepatosplenomegaly, lymphadenopathy, bony lesions (diaphyseal periostitis and metaphyseal osteochondritis), central nervous system involvement, and Coombs-negative hemolytic anemia. Less common findings are glomerulonephritis and pneumonitis. Mucocutaneous involvement occurs in 50% to 70% of infants. Snuffles or syphilitic rhinitis, which can be blood tinged, are the earliest symptoms.¹ The most common skin manifestation is a copper-red maculopapu-

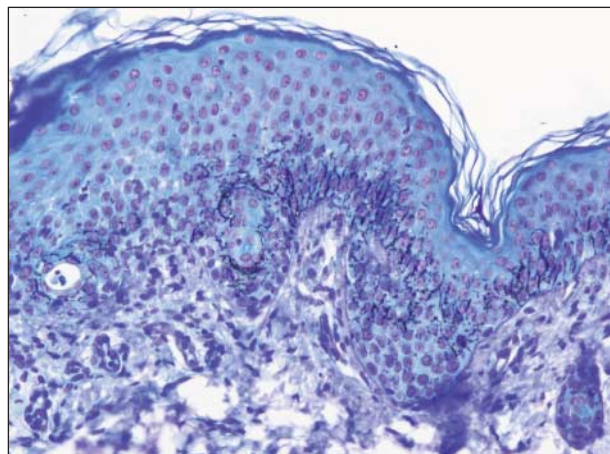


Figure 3. Warthin-Starry staining showing abundant spirochetes seen within the lower layers of the epidermis (antitreponemal antibodies; original magnification $\times 100$).

lar eruption. The hands and feet are often most severely affected, and the palms and soles can be involved.² These characteristic lesions, which are similar to the ones seen in secondary acquired syphilis, were observed in our patient. Fissures around the lips, nares, and anus occur. Acral desquamation, vesiculobullous lesions on palms and soles, and condylomata lata have also been described.²

Early congenital syphilis is usually suspected because of routine maternal screening. Management of the infant depends on when the woman receives treatment and the serological response to therapy. Our case was unusual because the maternal RPR test result was falsely negative owing to a prozone phenomenon. This occurs when high antibody titers in the serum inhibit agglutination; dilution of the serum reestablishes the proper concentration of antibody needed for antibody-antigen lattice formation. The prozone phenomenon occurs more commonly in HIV-infected persons.³

A skin biopsy may be helpful in cases of diagnostic doubt. Immunohistochemical techniques using specific antibodies against *T pallidum* have a higher diagnostic sensitivity than Warthin-Starry staining.⁴

Treatment of ECS depends on the child's age, diagnostic certainty, clinical manifestations, and adequacy of maternal treatment during pregnancy. The antibiotic treatment and follow-up recommendations are the same for HIV-infected and HIV-negative infants with ECS.

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