Denouement and Comment

Cutaneous Leishmaniasis by Leishmania infantum

The histopathologic picture with a mixed granulomatous inflammation suggested an infectious cause. Results of further testing by tissue polymerase chain reaction (PCR) was positive for leishmania, and typing revealed *Leishmania infantum* as the cause.

Leishmania antibodies were present in serum (titer 1:80). Abdominal ultrasonography and an ear-nose-throat assessment did not reveal visceral or mucocutaneous involvement. Thus, the diagnosis of cutaneous leishmaniasis by *L infantum* of the left cheek was made. The infection had most likely been acquired during the family vacation in Greece. Treatment was indicated because of the long-standing and nonhealing course of the infection and localization to the face. The species *L infantum* is known to cause visceral involvement, and although we did not have any evidence of visceral leishmaniasis in our patient, a treatment regimen similar to that for visceral involvement was considered appropriate. Liposomal amphotericin B was administered intravenously at a dose of 3 mg/kg per day on days 1 to 5, 14, and 21.[1] The lesion healed completely within 3 months with mild residual telangiectatic erythema (Figure 2).

Leishmaniasis is a zoonotic infection with a variety of mammalian reservoir hosts, including canines and rodents. Vector transmission of leishmania occurs when a female phlebotomine sandfly bites a human, where it is an intracellular protozoan parasite in mononuclear phagocytes. Depending on the *Leishmania* species and the immune status of the host, different manifestations, including cutaneous, disseminated cutaneous, mucocutaneous, or visceral leishmaniasis, may develop.[2]

Cutaneous leishmaniasis is the most common form of leishmaniasis and endemic to nearly 90 countries worldwide (northern Argentina to southern Texas, Asia, the Middle East, Africa, and southern Europe).[2,3] Formerly regarded as a disease of the developing world, leishmaniasis has become more important in nonendemic countries owing to tourism and job-related travel. The disease has spread to large areas of southern Europe, including popular destinations like Greece, Italy, Spain, and France. Skin lesions of cutaneous leishmaniasis typically appear several weeks or months after the parasite inoculation; an association with a previous trip may not be obvious. A nonhealing erythematous papule, nodule, or ulceration on exposed areas of the body together with a travel history to an endemic area should raise the suspicion for the disease. Differential diagnoses in children include other infectious dermatoses, such as ecthyma, infections by fungi, nontuberculous mycobacteria or actinomyces, and neoplasms.[2,3]

Diagnosis of cutaneous leishmaniasis is established by identifying the parasite with Giemsa-stained smears or histologic sections of infected tissues, culture of infected tissue in special media (eg, Novy-McNeal-Nicolle), or PCR.[4] As shown in our case, negative histology does not exclude *Leishmania* infection and the parasite can be detected by PCR. Subgenus identification, which is important for the choice of treatment, is made by culture or PCR. Serologic testing can help in the diagnosis of systemic forms.[3,4]

In general, patients with disseminated cutaneous, mucocutaneous, or visceral leishmaniasis require treatment. Solitary cutaneous leishmaniasis may resolve spontaneously. However, treatment is also recommended for large, multiple, nonhealing or progressing lesions or infections in cosmetically important areas, as disfiguring scars may develop. For topical treatment, different physical modalities (cryotherapy, surgical excision, and local application of heat) as well as topical drugs (paromomycin, 15%), photodynamic treatment, and local infiltration of pentavalent antimonials are effective.[2,5-7] Pentavalent antimonials (sodium stibogluconate and meglumine antimonite) have been used as first-line systemic treatment, depending on the severity of the infection and leishmania subgenus. As they can cause significant adverse effects, other treatments, such as amphotericin B, liposomal amphotericin B, fluconazole, itraconazole, pentamidine, miltefosine, and allopurinol, have been evaluated.[1,2,5-7] However, the current evidence for treatment of leishmaniasis is poor and the safety profile of each drug needs to be considered particularly in children. Leishmania vaccines or chemoprophylaxis are currently not available. Thus, for travelers to endemic countries, the use of insect repellants, insecticides, fine-mesh bed nets, and long-sleeved clothing are recommended for the prevention of leishmaniasis.

Accepted for Publication: July 21, 2009.
Correspondence: Lisa Weibel, MD, Dermatology Department, University Hospital Zurich, Gloriastrasse 31, 8091 Zurich, Switzerland (lisa.weibel@usz.ch).
Author Contributions: *Study concept and design:* Huber and Weibel. *Acquisition of data:* Huber and Berger. *Analysis and interpretation of data:* Huber, Cozzio, and Weibel. *Drafting of the manuscript:* Huber and Weibel. *Critical revision of the manuscript for important intellectual content:* Cozzio, Berger, and Weibel. *Administrative, technical, and material support:* Berger and Weibel. *Study supervision:* Cozzio and Weibel. *Patient management and treatment decision:* Berger.
Financial Disclosure: None reported.
Additional Contributions: Bernhard R. Beck, MD, and Claudine Gysin, MD, provided advice and expertise for this article.

REFERENCES

1. Pickering LK, Baker CJ, Long SS, McMillan JA, eds. *Red Book: 2006*. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006.
2. Bailey MS, Lockwood DN. Cutaneous leishmaniasis. *Clin Dermatol*. 2007;25(2):203-211.
3. von Stebut E, Sunderkötter C. Kutane Leishmaniasis. *Hautarzt*. 2007;58(5):445-458.
4. Vega-López F. Diagnosis of cutaneous leishmaniasis. *Curr Opin Infect Dis*. 2003;16(2):97-101.
5. Gonzalez U, Pinart M, Reveiz L, Alvar J. Interventions for Old World cutaneous leishmaniasis. *The Cochrane Database of Systematic Reviews*. 2009;(4):CD005067.
6. Gonzalez U, Pinart M, Rengifo-Pardo M, Macaya A, Ivar J, Tweed JA. Interventions for American cutaneous and mucocutaneous leishmaniasis. *The Cochrane Database of Systematic Reviews*. 2009;(2):CD004834.
7. Palumbo E. Current treatment for cutaneous leishmaniasis: a review. *Am J Ther*. 2009;16(2):178-182.