Images in Clinical Tropical Medicine
Resolution of Cutaneous Old World and New World Leishmaniasis after Oral Miltefosine Treatment

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An Afghan migrant who had returned from a visit to the Middle East 2 years before was seen with a non-healing painless lesion on the forearm (Figure 1A). A skin biopsy showed intracellular *Leishmania* parasites in the subcutis (Figure 1B and C), and the polymerase chain reaction (PCR) was positive for *Leishmania tropica*. At the same time, a German traveler who had returned from a vacation to Central America 1 month before was seen with progressively ulcerating painless lesions on the ankle, thigh, and forearm (Figure 2A). Scarification of the lesions’ margins showed sparse *Leishmania* amastigotes (Figure 2B and C) and the PCR from biopsies was positive for *L. braziliensis*. A 28-day treatment with oral miltefosine (2 mg and 2.5 mg/kg, respectively) was initiated in both individuals and the patients were seen at intervals of several weeks (Figures 3 and 4). All lesions healed, but both patients developed nausea and elevated liver function tests during pharmacotherapy. The highest values of aspartate aminotransferase (AST) and alanine aminotransferase (ALT) were 66 U/L and 44 U/L in the female migrant and 73 U/L and 33 U/L in the male traveler, respectively. Bilirubin levels were normal in both patients.

Figure 1. Cutaneous Old World leishmaniasis caused by *Leishmania tropica* in an Afghan woman. A. Initial presentation of the dry, plaque-like lesion with central nodule on the forearm. B. Intracellular parasites in vacuoles of a giant cell (arrowheads). Hematoxylin and eosin stain, magnification ×1,000. C. *Leishmania* in macrophages (arrowheads). Hematoxylin and eosin stain, magnification ×1,000. This figure appears in color at www.ajtmh.org.

Figure 2. Cutaneous New World leishmaniasis caused by *Leishmania braziliensis* in a German traveler after a vacation in Costa Rica and Belize. A. Initial presentation of the wet ulcerated lesion on the ankle (upper row), thigh (middle row), and forearm (lower row). Lesions were superinfected with Panton Valentine leukocidin-negative *Staphylococcus aureus*, Escherichia coli, and viridans streptococci. B. Extracellular *Leishmania* amastigote in tissue scarification. Giemsa stain, magnification ×1,000. C. Intracellular parasite in a monocyte (arrowhead). Giemsa stain, magnification ×1,000. This figure appears in color at www.ajtmh.org.

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but the male patient developed $\gamma$GT levels of 113 U/L. All values returned to normal 2 and 3 weeks after the end of treatment, respectively. Neither patient’s lesions showed clinical relapse when examined 4 months after the end of therapy. Miltefosine (hexadecylphosphocholine) has been shown to be effective in cutaneous and visceral leishmaniasis.\textsuperscript{1} At least some strains of \textit{L. braziliensis}, a species that can cause both cutaneous and mucocutaneous disease in the New World, have demonstrated a decreased sensitivity to the drug \textit{in vitro}, however.\textsuperscript{2}
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