Photodynamic Therapy in the Treatment of Cutaneous Leishmaniasis☆

Terapia fotodinámica en el tratamiento de la leishmaniasis cutánea

To the Editor:

Leishmaniasis encompasses a group of diseases caused by protozoa of the genus *Leishmania*. These infections affect millions and are endemic in the Mediterranean, North Africa, the Middle East, India, and Central and South America. Three clinical variants are distinguished on the basis of the culprit species and the patient's immunity: a cutaneous form is confined to the skin, a mucutaneous form affects both skin and mucosal tissues, and a reticuloendothelial form affects organs. Some three quarters of new cases are cutaneous, and although they may resolve spontaneously, choice of treatment is important because disfiguring cribriform scarring is common.[1]

A 10-year-old boy originally from Morocco who had been living in Spain for 2 months was brought for examination of an asymptomatic 3-month-old lesion on a lower eyelid. He was in good health and had no systemic symptoms. Physical examination revealed an oval erythematous plaque with slightly infiltrated borders and a firmly adhered crust in the center (Fig. 1A). A similar plaque was found on his left forearm (Fig. 1B). The locations of the lesions in exposed areas of skin in a patient from a geographic area where *Leishmania* species are endemic led to a diagnosis of cutaneous leishmaniasis (CL). Microscopic examination of a Riu-stained skin smear revealed macrophages with amastigotes, confirming the diagnosis (Fig. 2). Polymerase chain reaction (Spanish National Microbiology Center, Instituto de Salud Carlos III) was used to identify the species as *Leishmania major*.

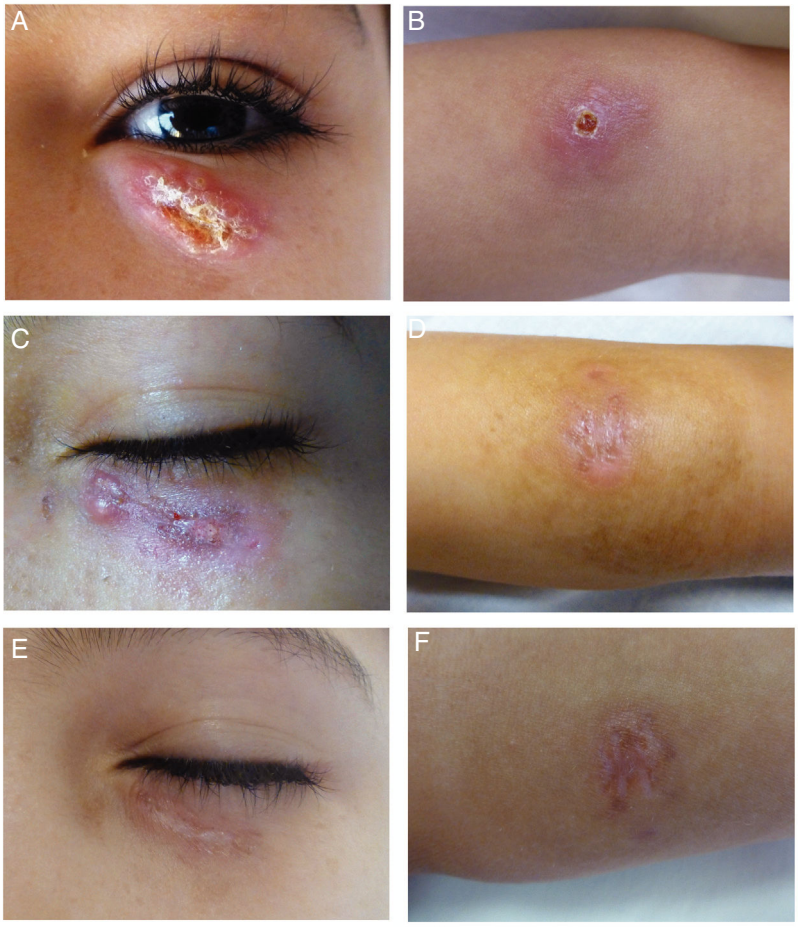

Figure 1 A–B, Lesions caused by *Leishmania major* before treatment. Note the erythematous oval plaque, the slightly infiltrated borders, and the central crusting on the lower eyelid and left forearm. C–D, Clinical response to 4 sessions of photodynamic therapy. E–F, Response 3 mo after treatment ended.

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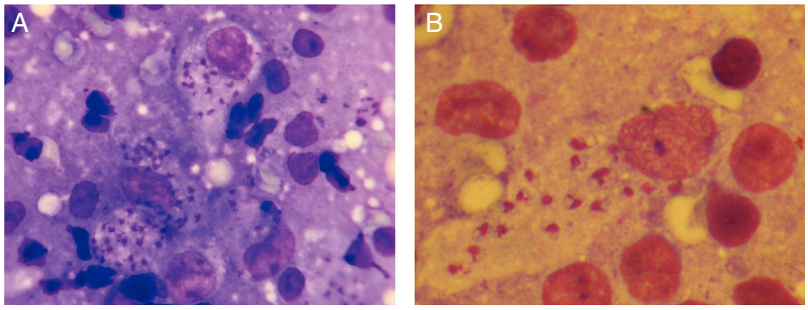

Figure 2 Microscopic views of the smear from the border of the eyelid lesion. A, Macrophages with amastigotes of *Leishmania major* (Riu's stain, magnification, × 400). B, Greater magnification (Riu's stain, magnification, × 1000).

We evaluated available treatments and started photodynamic therapy (PDT) with methyl amino-levulinate as the photosensitizing agent. Each session started with removal of the crust and application of the photosensitizer on the lesion and 5 mm around it. After a period of occlusion (3 hours), each site was irradiated with narrow spectrum (70–100 mW/cm) visible red light (Aktilite CL128, Galderma, Lausanne, Switzerland) at a peak of 630 nm and a total energy level of 37 J/cm^2. The eyes were protected with shells (Spectraview Shield, Sperian, Honeywell, Morris Plains, NJ, USA), and the light was adjusted to fall near the free border around the eyelid, leaving a nonirradiated distance of 3 mm at the upper border. PDT was repeated weekly until clearing was complete after 7 sessions and only residual signs could be observed. Three months after treatment ended there was a superficial hypopigmented scar (Fig. 1, C–F). The main adverse effect was slight to moderate pain. The patient tolerated the pain well when we interrupted irradiation for brief intervals, during which the area was air-cooled.

Choosing a treatment for CL is challenging because of the scarcity of evidence analyzing risks and benefits. Various guidelines have been published but there is no international consensus. The Infectious Diseases Society of America (IDSA) has established clinical criteria for identifying cases with the worst prognosis (Table 1). Once a risk group has been determined, the physician can consider systemic treatments for complicated variants and topical alternatives for uncomplicated ones.[2] If we had followed this approach strictly, the facial lesion would have been eligible for systemic treatment with miltefosine, azoles, pentavalent antimonials, amphotericin B, or pentamidine. All these drugs have potential adverse effects of various types.[3] After consideration of our patient's young age, the presence of only 2 isolated lesions, and the facial location of one of them as the only criterion for categorizing the case as complicated, we ruled out systemic treatment. The nonsystemic alternatives available included intralesional antimonial injection, which is relatively contraindicated around the eyelids and in acral zones; paromomycin; and PDT.

According to the summary of product characteristics for the PDT material, this modality is indicated for treating actinic keratosis, Bowen disease, and certain basal cell carcinomas.[4] Approval has also been given in recent years for treating skin infections that are refractory to conventional treatment.[5,6] The germicidal effect of porphyrins was described in 1988 when *Leishmania* parasites disappeared from macrophages on exposure to hematoporphyrin and menadione.[7] Based on these findings the first use of PDT with aminolevulinic acid for CL was described in 2003.[8] One patient with multiple lesions, half of which provided the controls, received topical paromomycin on 5 lesions and PDT on the other 5. Better and faster results were achieved with PDT. In the first randomized clinical trial comparing PDT to paromomycin, published in 2008, all patients treated with PDT improved and over 90% experienced complete clearing.[9] Although our patient's tolerance to pain on irradiation was at an acceptable level, greater tolerance can be achieved

Table 1 Clinical Features That Affect the Treatment of CL[2].

Uncomplicated CL	Complicated CL
Infection by species not associated with mucosal involvement	Infection by species associated with mucosal involvement
No mucosal involvement	Subcutaneous nodules
No signs of complicated CL	Large, swollen lymph nodes
Single or few lesions	More than 4 lesions >1 cm in diameter
Small lesion (diameter, <1 cm)	Single lesion >5 cm
Location accessible for topical treatment	Location or size inappropriate for topical treatment
Aesthetically unimportant location	Lesions on the face (including ears, eyelids, and lips), fingers, large toe, or genitals
Immunocompetent patient	Immunocompromised patient
Lesion that resolved without treatment	Failure of topical treatment at 2–3 mo

Abbreviation: CL, cutaneous leishmaniasis.

with daylight PDT, which has been proposed as an alternative when conventional facilities for PDT are unavailable.[10] Daylight PDT can be self-administered and is less painful.

In summary, PDT is a safe, less aggressive treatment that does not generate resistance and can achieve full clearance of CL lesions. It leaves residual scars that are not depressed and provides optimal long-term aesthetic results. These characteristics make it an effective alternative treatment for CL in our clinical practice.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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Usefulness of 2% Topical Diltiazem in Chondrodermatitis Nodularis Helicis: A Report of 2 Cases☆

Utilidad del diltiazem tópico al 2% en la condrodermatitis nodular del hélix: descripción de 2 casos

To the Editor:

Chondrodermatitis nodularis helicis (CNH) is a benign inflammatory disease that affects the skin and cartilage of the helix and, less frequently, the antihelix. Intense pain on touching the affected area is reported by many patients with CNH, necessitating treatment. The etiology of CNH is unknown. However, it has been proposed that prolonged pressure on the atrial and perichondrial cartilage, an anatomical region with little protective subcutaneous cellular tissue, may result in local ischemia followed by transepithelial removal of degenerated material. Consequently, many authors consider CNH a form of perforating dermatosis.[1] Risk factors include chronic actinic damage, exposure to low temperatures, and repeated local trauma.[2] Treatment is challenging. Several therapeutic approaches, with varying cure rates, are described. We present 2 cases of CNH treated successfully with 2% topical diltiazem, a therapeutic option not described to date.

The first patient was a 74-year-old man who was seen for an erythematous nodule with central ulceration on the left antihelix (Fig. 1A). The lesion was painful to the touch and had appeared 4 months earlier. The second patient was a 46-year-old man with a history of chronic hepatitis C virus infection and parenteral drug addiction who was seen for a painful nodule with severe ulceration on

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