

## Heat, Oriental sore, and HIV

Neha Prasad, Bhikiam C Ghiya, Ram A Bumb, Himanshu Kaushal, Anjali A Saboskar, Claudion Lezama-Davila, Poonam Salotra, Abhay R Satoskar

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Department of Dermatology, STD and Leprosy, SP Medical College, Bikaner, Rajasthan, India (N Prasad MBBS, Prof B C Ghiya MD, R A Bumb MD); Institute of Pathology (ICMR), Safdarjung Hospital Campus, New Delhi, India (H Kaushal MSc, P Salotra PhD); and Departments of Pathology and Microbiology, Ohio State University, Columbus, OH, USA (C Lezama-Davila PhD, A A Satoskar MD, A R Satoskar MD)

Correspondence to: Prof Ram A Bumb, H-3, PBM Hospital Campus, Bikaner, Rajasthan, India  
dr\_bumb@rediffmail.com

or Prof Abhay R Satoskar, Department of Pathology, The Ohio State University, Columbus, OH 43210, USA.  
abhay.satoskar@osumc.edu

For the ELISA HIV TRI-DOT and HIV COMB test see <http://jmitra.co.in/jmlwebsdiagraphid.aspx>

For ThermoMed see [www.thermosurgery.com](http://www.thermosurgery.com)

In January, 2009, a 34-year-old man presented to our hospital with a 6-month history of four, well-defined, non-tender, erythematous plaques of area 1–3 cm<sup>2</sup> on his right hand (figure A). Parasitological examination of a skin smear and biopsy sample confirmed a diagnosis of cutaneous leishmaniasis. Restriction-fragment length polymerisation PCR identified<sup>1</sup> the causative species as *Leishmania tropica*. Our patient also had oral candidosis. He had no history of overseas travel, but his work as a truck driver took him all over India and he had had multiple sexual contacts with sex workers from many regions. HIV infection was confirmed by ELISA HIV TRI-DOT and HIV COMB (Delhi, India). His viral load was 145 600 copies per mL and CD4-cell count was 180 per  $\mu$ L.

Our patient's HIV infection was treated with zidovudine, lamivudine, and nevirapine. The cutaneous leishmaniasis was treated with twice-weekly intralesional injections of sodium stibogluconate 0.5 mL/cm<sup>2</sup> (100 g/L) for 6 weeks. Despite an increase in CD4-cell count to 240 per  $\mu$ L after 24 weeks, he did not improve clinically or parasitologically. The lesions were then treated by a single application of radiofrequency-induced heat therapy for 60 s under local anaesthesia (2% lidocaine) by use of a localised current field radiofrequency generator (ThermoMed 1.8; Thermo-surgery Technologies Inc; Arizona, USA). He was given oral nimesulide and topical fusidic acid cream for 5 days. Our patient responded well to the heat therapy, with complete healing of the lesions within 12 weeks. At follow-up a year later, the fine scarring and hyperpigmentation of the lesions had decreased (figure B).

*Leishmania* spp can cause cutaneous, mucocutaneous, and visceral disease. Systemic pentavalent antimonials are the recommended treatment for cutaneous leishmaniasis, but they are toxic, and adherence with treatment is poor because daily injections for 3 weeks

or longer are needed. In HIV-infected individuals antimonial treatment is associated with relapses because a healthy immune system and CD4-expressing T cells are needed for optimal anti-parasitic activity.<sup>2</sup> However, cutaneous leishmaniasis in HIV-infected patients taking antiretroviral therapy can respond to antimonials probably owing to improved immune function.<sup>3</sup> Our patient did not respond to intralesional sodium stibogluconate despite an increase in CD4 cells after HAART, perhaps because the causative agent was *L tropica*. Cutaneous leishmaniasis caused by this species is difficult to treat, takes longer to heal, and can visceralise.<sup>4</sup> Successful management in HIV-infected individuals is crucial, because HIV-induced immune suppression can lead to rapid widespread dissemination of parasites and development of diffuse disease. Radiofrequency-induced heat therapy is effective and even better than antimonials in treatment of lesions caused by *L tropica* in immunocompetent individuals,<sup>5</sup> but its effectiveness in immunocompromised patients is unclear. The treatment is effective, causes little or no damage to underlying healthy tissue, and is easy to administer, and adherence by patients is better. As well as in this patient, heat therapy was highly effective in cutaneous leishmaniasis in a 28-year-old HIV-infected man who did not respond to sodium stibogluconate and subsequent rifampicin for 3 months. Both patients have remained disease free for a year after treatment. Therefore, radiofrequency heat therapy should be considered as first-line treatment for cutaneous leishmaniasis in HIV-infected patients.

### Conflicts of interest

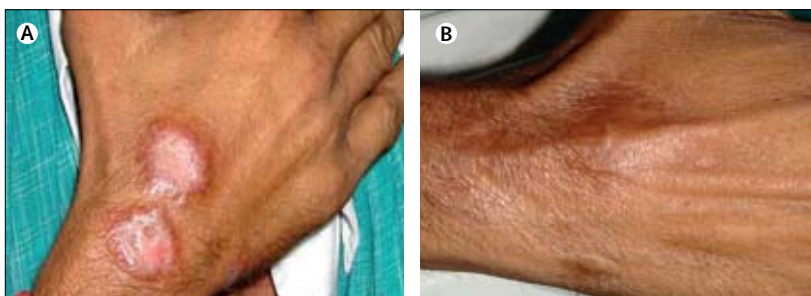
The patient was treated with a ThermoMed 1.8 heat therapy machine donated by ThermoSurgery Inc to S P Medical College, Bikaner.

### Contributors:

NP, BCG, RAB, and ARS looked after the patient; HK and PS did the PCR analysis; AAS reviewed the pathology; RAB, ARS, and CML wrote the paper. Written consent to publish was obtained.

### References

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**Figure:** Successful treatment of antimonial-refractory cutaneous leishmaniasis in HIV-infected patient by local radiofrequency heat therapy (A) lesions before start of the treatment, and (B) same lesions showing complete healing with minimal scarring 1 year after treatment.