We report the case of a 9-year-old boy with painful lesions of 6 weeks evolution with no pertinent medical history. One month before the appearance of the lesions, the patient had been on holiday to Bolivia and Peru, visiting the Amazon jungle and Machu Picchu. Physical exploration showed 2 round erythematous lesions, 2-cm diameter, highly infiltrated, with raised edges and an ulcerated exudative center. One was on the back of the second finger of the right hand (Figure 1), and the other on the submandibular area, where there was also a freely moveable swollen lymph node, 2-cm diameter.

Complete blood count, biochemical profile, and coagulation tests were normal. Mycobacterial culture was negative. Leishmaniasis was confirmed by a smear taken from the lesion and a range of Leishmania species were present in the parasite culture. The culture medium was
NNN prepared with rabbit blood. Polymerase chain reaction analysis was performed at the Instituto Carlos III (Majadahonda, Madrid, Spain) and proved positive for *L. braziliensis*.

The patient was treated with oral itraconazole for 1 month, with partial initial improvement. Due to persistence of the lesions, other treatments were proposed: systemic antimonials were rejected because of their frequent severe side effects and treatment was begun with intravenous liposomal amphotericin B as it is tolerated better. Treatment continued for 9 days, with complete resolution of the lesions after 1 month (Figure 2).

**Discussion**

In the Old World, cutaneous leishmaniasis is mainly caused by *L. mayor*, *L. tropica* or *L. infantum*, whereas in the New World it is caused by *L. braziliensis* or *L. mexicana*. It is important to identify which species is causing the lesion, since *L. braziliensis* can cause mucocutaneous leishmaniasis in up to 3% of the patients who do not receive treatment, whereas *L. mexicana* does not adversely affect the mucous membrane. Thus, systemic treatment is recommended for infections by *L. braziliensis*.

In the pediatric population, localized cutaneous leishmaniasis is the most common clinical form (99.13%), followed by mucosal (0.34%), chronic cutaneous (0.27%), and diffuse (0.25%) forms. The localized cutaneous form becomes manifest as an erythematous papule that develops into an ulcerated node, located in areas exposed to bites. Lesions in patients infected in the New World tend to be isolated (compared to multiple lesions in those infected in the Old World), and in children are often accompanied by swollen lymph nodes, as in the case presented. When the etiologic agent is *L. braziliensis*, lymph nodes are frequently involved (up to 42% in a series of 11 patients), and this involvement can at times precede the cutaneous lesions.

Differential diagnosis should include pyodermitis, mycobacterial infections, epithelioma, sporotrichosis, chromomycosis, etc.

Diagnosis is traditionally performed via smear, culture, or biopsy and is confirmed once the parasite is located. These tests have a sensitivity of around 87%. Polymer chain reaction analysis is also currently available and has a sensitivity of 97%.

All lesions due to *L. braziliensis* should be treated systemically because of the risk of mucosal invasion. Intravenous or intramuscular pentavalent antimonial agents have traditionally been used and have achieved cures in 90% of cases, but side effects are frequent and severe (electrocardiographic disorders, serious arrhythmias, pancreatitis, myelosuppression, myalgia, and arthralgia). In resistant cases, pentamidine or amphotericin B is used as second-line treatment. Liposomal amphotericin B is a macrolide active against fungi and *Leishmania* species that is useful in the treatment of mucocutaneous forms resistant to pentavalent antimonials and in visceral leishmaniasis. Although expensive, treatment is shorter due to its effectiveness and hospital stays are shorter than with pentavalent antimonial agents. It is tolerated better, with fewer serious side effects, and is thus beginning to be used in the treatment of the localized cutaneous forms caused by *L. braziliensis*.

Oral treatment has recently been implemented to avoid hospitalizing the patient. Ketoconazole has an 89% cure rate against *L. mexicana* and 30% against *L. braziliensis*. Another option is fluconazole at 200 mg/day for 6 weeks, with a 79% cure rate against *L. major*. Miltefosine, a phospholipid analogue of alkylphosphocholine, seems more promising with a 94% cure rate against leishmaniasis in the New World.

In conclusion, we have presented a case of localized cutaneous leishmaniasis caused by *L. braziliensis* that had excellent response to treatment with liposomal amphotericin B and was well tolerated. Liposomal amphotericin B is a effective alternative to systemic pentavalent antimonials.
good alternative to pentavalent antimonial agents because it is effective and well-tolerated, although it is more expensive than traditional treatments.

Conflicts of Interest

The authors declare no conflicts of interest.

References