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• Case Report

Leech therapy in treatment of cutaneous leishmaniasis: a case report

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1 Introduction

Application of leeches has been a common treatment measure since ancient times[1–3] and descriptions can be found in the works of Pliny, Galen, Avicenna and Themison.[4] Since 1980, leech therapy has had an increasing therapeutic presence in Europe.[5] Leech therapy is quite common in the treatment of skin diseases, among others. It has also been used in traditional Persian medicine and by folk practitioners in the treatment of dermatological diseases, such as cutaneous leishmaniasis (CL).[6]

CL is a common and important disease in the world. Every year, 20 000 cases of CL are reported in Iran. *Leishmania tropica* and *Leishmania major* are two of the most common leishmania species distributed in more than 18 out of the 31 provinces in Iran. *Leishmania major* is the most frequent species in Fars Province, in the south of Iran.[7] The number of cases of leishmaniasis in this region has risen sharply in recent years. During 2001–2008, the cases reported in Fars Province comprised approximately 25% of the total number of CL cases in the country (44 464 cases). From 2005 to 2008, the number of cases increased from 192 to 484 in Shiraz, the capital of Fars Province.[8,9]

Different medications, such as pentavalent antimony, pentamidine, amphotericin B, miltefosine, metronidazole, azols and other systemic drugs, are used to treat CL.[10] These medicines are quite expensive and can have considerable side effects. Moreover, the therapeutic response to these medicines is not satisfactory.[11] Hence, other interventions may be beneficial. The current case report describes a non-conventional treatment for CL.

2 Case report

Two patients participated in this study. First, we received consent from the patients to participate in the study and to use his or her lesion photos in publication.

A 56-year-old man visited a physician in a private clinic with a wound on his left hand. The wound had developed after a trip to Kherameh, an area in Fars Province with pervasive CL. The chronic wound was diagnosed as CL on the basis of smear test and clinical appearance. The patient was prescribed azithromycin (capsules: 250 mg)

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and metronidazole (tablets: 250 mg), two medications that are used for treatment of CL in Iran, as well as 4 months of cryotherapy. However, the wound did not heal. Thus, the patient switched to another physician. After clinical diagnosis, the second physician prescribed leech therapy. The patient's hand was photographed before leech therapy sessions.

A 43-year-old woman also visited a physician in the clinic. She had received a wound on her face 6 months earlier ago in Estahban, an area in Fars Province where CL was not endemic. She had used no drugs for treatment of CL when she came to the clinic. She was diagnosed with CL and underwent leech therapy. Her face was photographed before and after the therapy.

It should be noted that neither patient was taking medication for hemodilution nor did they have insect bite allergies. The patients also had no systemic disorders or other diseases, such as hemophilia, anemia, and type 1 diabetes. Additionally, since leeches (*Hirudo orientalis*[12]) used in the clinic were provided by Iran's Institute of Research on Hejamat, they would rarely lead to an infection.

The intervention was performed by application of 5 leeches in 4–5 sessions at intervals of 2 to 4 weeks. In each session, the leeches were placed on the wounds for 30–45 min to extract 5–6 mL blood. The lesions were photographed before leech therapy sessions.

3 Results

For the male patient, leech therapy was conducted four times at 1-, 2-, 3- and 4-week intervals (Figures 1A–1D), and the lesion was completely healed after two months (Figure 1E). The healing process was also followed up for five months after the first leech therapy session, and the lesions showed no relapse (Figures 1F and 1H).

Leeches were used five times with 2-week (Figures 2A–2D) and 1-month (Figure 2E) intervals for the woman, whose case was followed for one and half years after the first leech therapy (Figures 2F–2I). The lesion was completely healed after 6 months (Figure 2G), and showed no relapse after one and half years (Figures 2G–2I).

Figure 1 The photograph of patient's hand with cutaneous leishmaniasis before and after leech therapy
A: before leech therapy + first session; B: second session; C: third session; D: fourth session; E–H: two, three, four and five months after the first session, respectively.