



## Eyelid Cutaneous Leishmaniasis: A Case Report

*Moein DOROODGAR*<sup>1</sup>, *Masoud DOROODGAR*<sup>1</sup>, *\*Abbas DOROODGAR*<sup>2</sup>

1. School of Medicine, Shabid Beheshti University of Medical Sciences, Tebran, Iran
2. Dept. of Medical Parasitology, School of Medicine, Kashan University of Medical Sciences, Kashan, Iran

\*Corresponding Author: Email: adoroudgar@gmail.com

(Received 18 Jul 2016; accepted 15 Oct 2016)

### Abstract

Cutaneous leishmaniasis (CL) is the most common parasitic disease transmitted by vectors in Iran. CL is endemic in many urban and rural parts of Iran and usually caused by two species of *Leishmania* as *L. major* and *L. tropica* transmitted to humans from parasite reservoirs by the bite of female sandflies. We report a case of ocular leishmaniasis with eyelid involvement presentation. The patient was a 70-yr-old housewife woman referred to Health Care Center in city of Kashan, central Iran in 2012. The disease was diagnosed by direct smear, culture, and PCR from the lesion. PCR was positive for *L. major*. Her lesion was treated with systemic meglumine antimonate (Glucantime) (20 mg/kg/day) for 20 days.

**Keywords:** Eyelid cutaneous leishmaniasis, *Leishmania major*, Ocular leishmaniasis

### Introduction

Leishmaniasis is used to describe the diseases associated with known species of *Leishmania* parasite. The parasites are transmitted by the bite of sandflies (Family: Psychodidae. Subfamily: Phlebotominae). Due to species of the *Leishmania* and the host immune response it can cause different clinical entities (1, 2). Leishmaniasis is endemic in 98 countries with more than 350 million people at risk. CL is the most common form with 1.5 million new cases per year (3). In the old world, common parasites were *L. major* and *L. tropica* transmitted by *Phlebotomus papatasi* and *P. sregenti* respectively. In The new world, CL is caused by *L. Braziliensis*, *L. amazonensis* and *L. mexicana* which vectors are *Lutzomyia wellcomei* and *L. flaviscutellata* (1).

Up to 90% of cases of CL occur in Afghanistan, Algeria, Islamic Republic of Iran, Saudi Arabia and the Syrian Arab Republic, in Bolivia and Brazil, Colombia, Nicaragua and Peru (3). Both form of rural and urban CL, Zoonotic CL (ZCL) and

Anthroponotic CL (ACL) are existing in foci of the disease in Iran (4). About 20,000 cases of CL are reported every year and the actual number may be 4 or 5 times higher (4-6). In fact, CL is considered one of the most important parasitic diseases in Iran with a few reports of atypical clinical forms (7).

Annually several cases of CL are reported in endemic area of Kashan (Isfahan Province, central Iran).

Here a case of ocular leishmaniasis (OL) with eyelid involvement is reported. The disease was diagnosed by direct smear, culture of lesion, and PCR for *L. major*, and *L. tropica* by RAPD-PCR method which compared to reference stocks: *L. tropica* (MHOM/IR/IR/99) and *L. major* (MHOM/IR/75/ER) and the results were obtained. The data related to the patient was analyzed by descriptive statistics and bands of PCR product was compared to the standard marker (XIV) strains (Fig. 1).



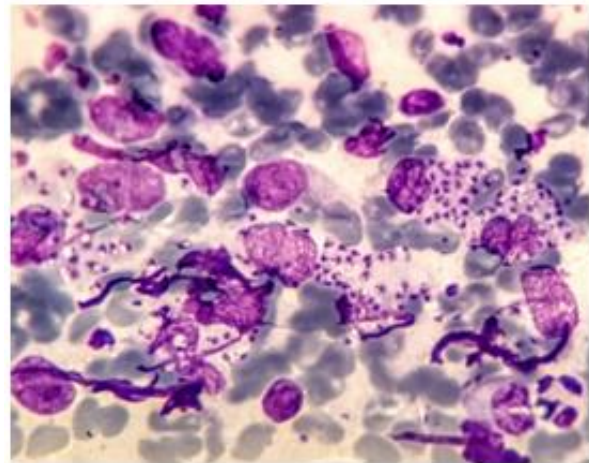
**Fig. 1:** RAPD-PCR technique results in isolated strain and standards: 1- *L. tropica* (MHOM/IR/IR/99), 2- *L. major* (MHOM/IR/75/ER), 3- Marker (100 bp), 4- Unknown strain

### Case report

A 70-year-old housewife woman with a complaint of an ulcerative lesion on her upper lid of left eye which was non pruritic was referred to a health center of Kashan (Fig. 2). The lesion size was about 2 cm in 1 cm, was not tender, and was crusty and painless. Her wound was a small nodule initially, enlarged slowly, and after about a month became to current form. At the beginning, the antibiotic treatment was performed for 10 days that failed to heal the lesion. Direct smears were taken from the edge of skin lesion of patient by using vaccine style and were fixed with pure methanol. Following the staining of samples by Giemsa, CL was confirmed by observation of the leishman bodies (amastigotes) by a light microscopy (Fig. 3). After culture examination on NNN medium, PCR was positive for *L. major*. The patient treated with systemic meglumine antimonate (Glucantime) for 20 days (20 mg/kg/day). Three months after treatment, the lesion healed and only a small scar was remained on the surface of the eyelid.



**Fig. 2:** A 70-yr-old woman with lesion of left eyelid



**Fig. 3:** Direct Smear was positive for Leishman bodies (Giemsa stain)

### Discussion

Cutaneous leishmaniasis is transmitted by the bite of infected female sand flies with *Leishmania* parasites. Because of sandflies, mouthparts are very short; they are unable to bite through clothing. Therefore, CL usually occurs in an uncovered part of body (1, 8). Although the face is an exposed area, but it is an unusual site specially eyelids (6, 9). The possibility of presence of eyelashes and the frequent movements of the eyelids prevent sand fly bites (8, 10). In the season of sandflies activity, more blood sucking is occurred from sunset to sunrise (1). Although bite of eyelids is possible during the rest and sleep, but inci-

dence of cases is much less than bites of the other body parts such as hands and feet. The studies on epidemiology of ocular leishmaniasis confirm the reality that this disease has low incidence (2). In Turkey, 33 ocular leishmaniasis in 987 (1.93%) and 2 out of 718 (0.3%) patients with CL respectively were reported (11, 12). In Iran, Modarres-Zadeh et al. reported four cases of OL from 1950 to 2005 that two of them ended in blindness (2). *L. major* was the main agent of the unusual leishmaniasis in this study and in some cases reported from Iran (6, 10, 13, 14).

Although CL is a self-limiting disease, but untreated ocular leishmaniasis may cause ophthalmologic side effects and can potentially be very serious for eyes. Early diagnosis and vigorous treatment may prevent blindness (2, 15). Now there is no effective vaccine to prevent the disease and treatment is done with drugs (16, 17). The Pentavalent antimonial compounds are the first line drugs of treatment for all forms of leishmaniasis (18).

CL is endemic in many parts of Iran and ocular leishmaniasis should be considered in these areas. In recent years some cases of ocular leishmaniasis has been reported in Iran (2, 9, 15). Diagnosis and treatment of leishmaniasis is done free in Iran. North of Isfahan Province is one the endemic areas for CL caused by *L. major* (19). The described case is a native person who is living in endemic area Kashan County and had no history of trip to other endemic areas of Iran.

### Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

### Acknowledgments

All collaborators with this case are appreciated especially the patient for her cooperation. The authors declare that there is no conflict of interest.

### References

1. Service M (2009). *Medical entomology for students*. 4<sup>th</sup> ed. Cambridge University Press. UK. pp.: 93-102.
2. Modarres Zadeh M, Manshai K, Shaddel M, Oormazdi H (2006). Ocular Leishmaniasis, Review Article. *Iran J Ophthalmol*, 19(3): 1-5.
3. World Health Organization (2010). Control of the leishmaniasis. Geneva [Online] [http://whqlibdoc.who.int/trs/WHO\\_TRS\\_949\\_eng.pdf](http://whqlibdoc.who.int/trs/WHO_TRS_949_eng.pdf)
4. Ministry of Health and Medical Education of Iran (2012). Care Guide Cutaneous Leishmaniasis in Iran. <http://health.behdasht.gov.ir/?fkeyid=&siteid=435&pageid=53871&catid=289&dview=1189>
5. Doroodgar A, Sayyah M, Doroodgar M, Mahbobi S, Nemetian M, Rafizadeh S, Rassi Y (2012). Progressive increasing of cutaneous leishmaniasis in Kashan district, central of Iran. *Asian Pac J Trop Dis*, 2(4): 260-263.
6. Hajjaran H, Mohebbali M, Akhavan AA, Taheri A, Barikbin B, Nassiri S (2013). Unusual presentation of disseminated cutaneous leishmaniasis due to *Leishmania major*: Case reports of four Iranian patients. *Asian Pac J Trop Med*, 6(4):333-336.
7. Shiee MR, hajjaran H, Mohebbali M, Doroodgar A, Hashemisaadat M, Teimouri A, Afzali H, Shirzadi MR (2012). A molecular and parasitological survey on cutaneous leishmaniasis patients from historical city of Kashan in Isfahan province, center of Iran. *Asian Pac J Trop Dis*, 2(6): 421-425.
8. Veraldi S, Bottini S, Curr`o N , Gianotti R (2010). Leishmaniasis of the eyelid mimicking an infundibular cyst and review of the literature on ocular leishmaniasis. *Int J Infect Dis*, 14 (Suppl 3): e230-2.
9. Ayatollahi J, Ayatollahi A and Shah Cheraghi H (2013). Cutaneous Leishmaniasis of the Eyelid: A Case Report. *Case Rep Infect Dis*, 2013:214297.
10. Sadeghian G, NilforooshZadeh MA, Ansari N (2004). Palpebral Leishmaniasis with Trichiasis: A case report. *Iran J Dermatol*, 7(2): 112-115.
11. Satici A, Gurler B, Aslan G, Ozturk I (2004). Ocular involvement in cutaneous leishmaniasis.

- sis: four cases with blepharoconjunctivitis. *Eur J Epidemiol*, 19(3): 263–266.
12. Ul Bari A, Rahman S.B (2008). Many faces of cutaneous leishmaniasis. *Indian J Dermatol Venereol Leprol*, 74(1):23-7.
  13. Mortazavi H, Mohebbali M, Taslimi Y, Sadeghipour P, Ansari M, Kamyab K, Talebi M, Khamesipour A (2015). Hoarseness as the Presenting Symptom of Visceral Leishmaniasis with Muco-Cutaneous Lesions: A Case Report. *Iran J Parasitol*, (10)2: 296-300.
  14. Moravvej H, Barzegar M, Nasiri S, Abolhasani E, Mohebbali M (2013). Cutaneous Leishmaniasis with Unusual Clinical and Histological Presentation: Report of Four Cases. *Acta Med Iran*, 51(4): 274-8.
  15. Abrishami M, Soheilian M, Farahi A, Dowlati Y (2002). Successful treatment of ocular leishmaniasis. *Eur J Dermatol*, 12(1): 88-9.
  16. Khanjani Jafroodi S, Farazmand A, Amin M, Doroodgar A, Shirzadi MR, Razavi MR (2015). Methanolic Extract's Activity of *Artemisia absinthium*, *Vitexagnus-castus* and *Phytolaca americana* Against *Leishmania major*; in vitro and in vivo. *Int Arch Health Sci*, 2(2): 69-74.
  17. Griewank K, Gazeau C, Eichhorn A, Von Stebut E (2010). Miltefosine efficiently eliminates *Leishmania major* amastigotes from infected murine dendritic cells without altering their immune functions. *Antimicrob Agents Chemother*, 54(2):652-9
  18. Haldar AK, Sen P, Roy S (2011). Use of Antimony in the Treatment of Leishmaniasis: Current Status and Future Directions. *Mol Biol Int*, 2011:571242.
  19. World Health Organization (2010). Leishmaniasis: Country profiles. <http://www.who.int/leishmaniasis/resources/IRAN.pdf?ua=1>