

# Cutaneous leishmaniasis of the eyelids: Retrospective evaluation of 18 patients

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## ABSTRACT

**OBJECTIVE:** Although eyelid involvement is rare in cutaneous leishmaniasis (CL), it can cause severe ocular complications if the diagnosis is delayed and not treated. Our purpose in this study is to examine the clinical characteristics, diagnosis, and treatment methods as well as accompanying ocular complications in patients with CL diagnosis and eyelid involvement.

**METHODS:** In this retrospective study, the clinical characteristics, diagnosis, and treatment methods of the disease as well as accompanying ocular complications were examined for 18 patients with CL diagnosis and eyelid involvement between May 2018 and October 2022 in our Dermatology and venereal diseases clinic.

**RESULTS:** 10 (55%) of the patients were male and 8 (45%) were female. Unilateral lower eyelid involvement was most common (9 patients [50%]). Chalazion-like lesions (8 patients [45%]) were observed most commonly. All patients were diagnosed with CL by direct microscopic examination and were given systemic meglumine antimonite treatment. No ocular complications were observed in any of the patients.

**CONCLUSION:** It should be kept in mind that eyelid involvement may occur in CL, and ophthalmological examinations of these cases should be performed and treatment should be initiated in the early period to prevent possible ocular complications.

*Keywords:* Chalazion; cutaneous leishmaniasis; eyelid; meglumine antimonite; ptosis.

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Leishmaniasis describes a series of diseases caused by protozoan parasites of the *Leishmania* genus [1]. This disease appears in three basic forms as cutaneous, mucocutaneous, and visceral leishmaniasis [2]. The characteristics of the host, parasite, and vector determine the formation and healing process of cutaneous leishmaniasis (CL). Both the lifestyle and behaviors of the host and the reproductive and survival characteristics of the vector are important in the epidemiology of CL [3, 4]. Although CL can be observed at any age, it is more common in endemic regions, especially in children [5]. South Eastern Anatolia region in Türkiye is endemic in terms of CL, and according to the data of the Ministry of Health, approximately half

of 50381 cases detected throughout the country between 1988 and 2010 were reported from Şanlıurfa province [6].

CL lesion starts as an erythematous papule at the bite site of the infected female sandfly. It grows slowly and turns into a nodule or plaque with a tightly attached crust-covered ulcer in the center after weeks and months, and heals over time, leaving an atrophic scar [2, 5]. CL lesions are known as major mimicry diseases because they clinically resemble many diseases [1]. CL lesions are seen as single or multiple lesions, especially in the head-and-neck region (60%) [2]. It has been reported that 1.6–1.9% of patients with CL diagnosis have eyelid involvement [7, 8]. Although eyelid involvement is rare,



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the disease may cause severe ocular complications if not diagnosed early and treated [9–11].

Our purpose in this study is to examine the clinical characteristics, diagnosis, and treatment methods of the disease as well as accompanying complications of patients with CL diagnosis and eyelid involvement between May 2018 and October 2022 in our dermatology and venereal diseases clinic.

## MATERIALS AND METHODS

In this retrospective study, the files of 18 patients with CL diagnosis and eyelid involvement by clinical and parasitological examination in our Dermatology and venereal diseases clinic between May 2018 and October 2022 were retrospectively reviewed. Clinical characteristics such as age, sex, number of lesions, lesion location, lesion size and duration, CL diagnosis findings and treatments received by patient, and finally, the ocular complications detected in the detailed eye examination performed by the ophthalmologist were recorded in the patients' files.

CL diagnosis was made by dermal scraping method from solid lesions such as papules, nodules, and plaques; and by observation of amastigotes on swab material from ulcerous lesions with crust.

### Statistical Analysis

Statistical analyses were performed using SPSS software (IBM statistics for Windows version 25, IBM Corporation, Armonk, New York, USA). Continuous data were calculated as mean  $\pm$  standard deviation, and categorical data as frequency (%).

### Ethics Committee Approval

The ethics approval of the study was provided by the Ethics Committee of the Harran University Non-Invasive Clinical Research (date: November 14, 2022, number: 2022/05). The study was conducted in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines.

## RESULTS

Eighteen CL patients with eyelid lesions were included in this retrospective study. 10 (55%) of the patients were male and 8 (45%) were female. Mean age of the patients was  $10.4 \pm 5.24$ . Nine (50%) patients had lower eyelid involvement, 7 (39%) patients had upper eyelid involve-

### Highlight key points

- Cutaneous leishmaniasis lesions are seen as single or multiple lesions especially in the head and neck region.
- Eyelid involvement in cutaneous leishmaniasis is rare.
- Complications such as cicatricial ectropion, trichiasis, scleromalacia, symblepharon, blepharoconjunctivitis, corneal ulceration, pannus, interstitial keratitis, scleral nodule, and anterior uveitis may also develop in eyelid involvement.

ment, and 2 (11%) patients had lateral canthus region involvement. 11 (62%) patients had plaque lesions, 4 (22%) had ulcers, and 3 (16%) had papular lesions. Clinically, chalazion-like lesion was found in 8 (45%) patients, eczema-like lesion in 2 (11%) patients, lupus vulgaris-like lesion in 1 (5.5%) patient, sarcoidosis-like lesion in 1 (5.5%) patient, and corn cutaneum-like lesion in 1 (5.5%) patient. (Figs. 1-6) The mean lesion duration was  $5.2 \pm 2.4$  months. Mean lesion size was  $2.8 \pm 1.5$  cm. CL diagnosis was made by direct microscopic examination in all patients. All patients were treated for 21 days with systemic meglumine antimonate (MA) (20 mg/kg/day).

Involvement, including the eyelid margin, was observed in one of our patients. During the active lesion process, the patient had complaints of ocular irritation, stinging, and burning. On bio-microscopic examination, bulbar and tarsal conjunctival hyperemia and corneal punctate epitheliopathy were observed. Topical preservative-free tear and topical preservative-free steroid treatment were applied to the patient for 3 weeks. With the regression of the lesion with early treatment, conjunctival hyperemia and corneal punctate epitheliopathy symptoms disappeared. No permanent ocular complications were observed in any of the patients.

## DISCUSSION

Eyelid lesions may be caused by the bite of a vector fly on the lid, inoculation of the infection of the lid by the patient's fingers, lymphatic spread, or contiguous spread from an adjacent site [8, 10, 12]. Since the eyelids are constantly in motion, it is difficult for the vector sandflies to bite this area; however, the inactivity of the eyelids during sleep facilitates the contact of the vector sandflies with the eyelids [9, 13]. In two separate studies carried out in Şanlıurfa region of our country, where our study was also carried out, Gürel et al. [7] and Satıcı et al. [8] reported eyelid involvement as 1.6% and 1.9%, respectively. Involvement of the upper and lower eyelids and



**FIGURE 1.** CL lesions located on the lower eyelid are seen.

CL: Cutaneous leishmaniasis.

lateral canthus site can be observed in eyelid involvement [10, 14]. Involvement of the lateral canthus site is the most common [10]. In our study, unilateral lower eyelid involvement was most commonly observed. Chalazion-like lesions are most commonly observed in eyelid involvements; however, the lesions can also be observed as ulcers and unilateral chronic blepharitis [6, 10, 14, 15]. In our study, chalazion-like lesions were most commonly observed, similar to the literature data.

Lesions located on the eyelid may impair lid functions and cause ptosis and lagophthalmia if not treated early [16]. It has been shown that the large size of the lesions and their proximity to the eyelid margin increase the risk of corneal complications [9, 12, 17]. In our study, an involvement, including the eyelid margin, was observed in one patient. During the active lesion process, the patient had complaints of ocular irritation, stinging, and burning. On bio-microscopic exam-



**FIGURE 2.** Chalazion-like lesions located on the upper eyelid are seen.



**FIGURE 3.** Corn cutaneum-like lesions located on the upper eyelid are seen.



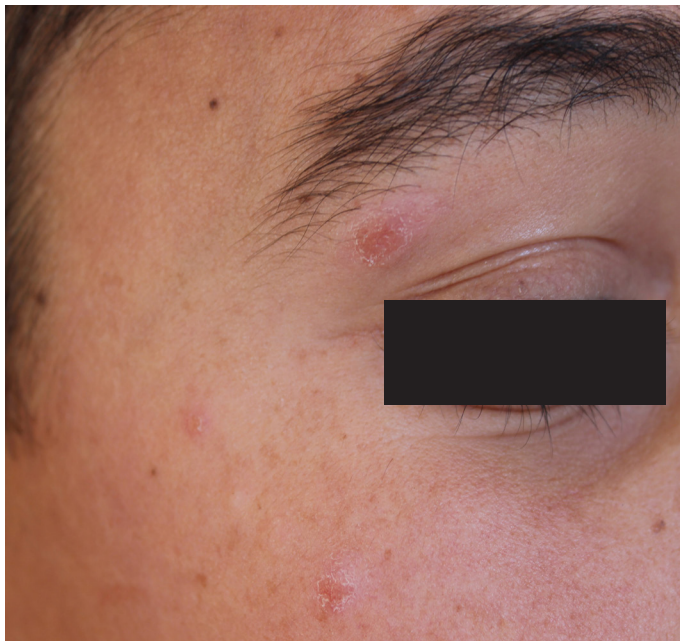
**FIGURE 4.** Sarcosoid-like lesions located on the lower eyelid are seen.

ination, bulbar and tarsal conjunctival hyperemia and corneal punctate epitheliopathy were observed. Topical preservative-free tears were applied to the patient 7 times a day (Eystil 0.15% single-dose eye drops-SIFI Pharmaceuticals) and topical preservative-free steroid treatment was applied 3 times a day (Dexasine-SE-Novartis) for 3 weeks. With the regression of the lesion with early treatment, conjunctival hyperemia and corneal punctate epitheliopathy symptoms disappeared.

Complications such as cicatricial ectropion, trichiasis, scleromalacia, symblepharon, blepharoconjunctivitis, corneal ulceration, pannus, interstitial keratitis, scleral nodule, and anterior uveitis may also develop in eyelid involvement [8, 11, 12, 18–21]. Blindness due to CL has

been reported, albeit rarely [22]. Saberi et al. [23] have found no ocular complications in 15 patients with eyelid involvement, and stated that ocular complications due to eyelid involvement can be prevented with early diagnosis and treatment. Similarly, no ocular complications were observed since the disease was diagnosed early and treated without delay in our study.

Eyelid lesions in CL patients can cause diagnostic difficulties as they have very different clinical manifestations, and the disease can be confused with numerous conditions such as paracoccidioidomycosis, histoplasmosis, rhinoscleroma, hordeolum, chalazion, cellulitis, epidermoid cysts, furuncle, dacrocystitis, lupus vulgaris, sarcoidosis, syphilis, tropical ulcers, eczema, kera-



**FIGURE 5.** Eczema-like lesions located on the upper eyelid are seen.



**FIGURE 6.** Spider bite-like lesions located on the lower eyelid are seen.

toacanthoma, basal cell carcinoma, and squamous cell carcinoma [10, 13, 14, 20–30]. Lesions of the patients in our study were also included in differential diagnosis with diseases such as eczema, impetigo, spider bite, sarcoidosis, and corn cutaneum.

CL diagnosis is made by finding amastigotes in swab material or dermal scraping smear, growth in culture, finding amastigotes in biopsy material, or detecting parasites using polymerase chain reaction methods [1, 2, 4, 5]. All patients in our study were diagnosed with CL on finding amastigotes in swab material and dermal scraping smear.

Treatment should be started immediately in order to prevent the development of complications in lesions located on the eyelid. Agents such as intralesional (IL) MA, systemic MA, IL, and systemic Amphotericin B, cryotherapy, and topical paromomycin can be used in the treatment [1, 3, 5, 8, 17, 30–32]. Durdu et al. [9] treated 59 CL patients with involvement around the eyelid as follows: 50 by IL MA, 2 by IL MA and cryotherapy, 5 by systemic MA, and 2 by cryotherapy alone. Yaghoobi et al. [10] treated 9 CL patients with eyelid involvement by systemic MA. Saberi et al. [23] treated 15 CL patients with eyelid involvement by systemic MA. Systemic MA treatment was applied to all patients in our study for 21 days to prevent the development of ocular complications.

## Conclusion

It should be kept in mind that eyelid involvement may occur in CL, and ophthalmological examinations of all cases should be performed, and treatment should be initiated in the early period to prevent possible ocular complications.

**Ethics Committee Approval:** The Harran University Non-Invasive Clinical Research Ethics Committee granted approval for this study (date: 14.11.2022, number: 2022/05).

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