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Dermoscopy of Cutaneous Leishmaniasis: Experience of the University Hospital of Tangier Based on 34 Cases

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Abstract

Introduction: Cutaneous leishmaniasis (CL) is an endemic parasitic disease in many parts of the world, including Morocco. Dermoscopy, a non-invasive diagnostic tool, has emerged as a valuable complementary method for diagnosing CL. This study aims to analyze the dermoscopic features of CL lesions in a Moroccan population.

Methods: A retrospective descriptive study was conducted at the University Hospital of Tangier between September 2021 and March 2025, involving 34 patients with confirmed CL. Each case underwent standardized dermoscopic examination prior to treatment, with subsequent clinical and dermoscopic follow-up.

Results: The average age of patients was 27.3 years, with 38% being children under 10 years old. Lesions were mostly located on the face (60%), with a predominance of papulo-nodular forms (41.2%). The most consistent dermoscopic findings included diffuse erythema (100%), comma-shaped vessels (88.2%), and scales (85.3%).

Specific features such as yellow tears (38.2%) and white starburst-like structures (35.3%) were also frequent. Treatment was based on meglumine antimoniate (systemic or intralesional), with a healing rate of 91.2%. Dermoscopic improvement was visible as early as the second week.

Conclusion: Dermoscopy provides detailed and reproducible assessment of CL lesions. It is useful for diagnosis, especially in atypical forms, and for monitoring treatment response. Its systematic use in endemic regions could improve patient management.

Keywords
Cutaneous leishmaniasis; Dermoscopy; Non-invasive diagnostic tool

Introduction
Cutaneous leishmaniasis (CL) is a vector-borne parasitic disease endemic in many regions worldwide, especially North Africa, the Eastern Mediterranean, the Middle East, and Latin America. It is classified as a neglected tropical disease by the World Health Organization (WHO) and represents a true public health problem in rural and peri-urban areas of Morocco. Diagnosis usually relies on parasitological examination, which may lack sensitivity in chronic or pauciparasitic forms.

Dermoscopy, a non-invasive imaging method initially used for skin tumors, is now increasingly used for diagnosing infectious dermatoses, including leishmaniasis. However, data on its utility in endemic countries remain limited. This study aims to analyze the dermoscopic features of CL lesions and their evolution under treatment through a case series from CHU Mohammed VI of Tangier.

Materials and Methods
This was a retrospective descriptive study conducted between September 2021 and March 2025. Thirty-four patients with parasitologically confirmed CL were included. Inclusion criteria were dermoscopic examination before any treatment and availability of complete clinical and photographic documentation. Mucosal or mucocutaneous forms were excluded.

Dermoscopy was performed using a DermLite DL4 handheld dermatoscope in both polarized and non-polarized light. Lesions were documented based on defined criteria: vascularization, keratotic structures, erythema, yellow tears, white starburst-like structures, ulcerations, and crusts. A standardized analysis sheet ensured uniform data collection. Images were digitally archived.

Variables analyzed included age, sex, number of lesions, lesion location, clinical aspect, observed dermoscopic structures, treatment modalities, and clinical/dermoscopic evolution. Data were entered into Excel and analyzed using SPSS.

Results
The mean age was 27.3 years, with a pediatric predominance (38% under 10 years). The sex ratio was balanced. Most patients came from urban areas in the Tangier-Tetouan-Al Hoceima region. Lesions were mostly facial (about 60%), particularly in children.

Clinically, the most frequent forms were papulo-nodular (41.2%), followed by ulcer-crusted (29.4%), erythematosquamous (8.8%), ulcerative-vegetative (5.9%), and some atypical forms. The average consultation delay was long (7.5 months), indicating often delayed care. Dermoscopy showed constant diffuse erythema (100%), scales in 85.3% of cases, ulcerations in 41.2%, and crusts in 52.9% (Figure 1).

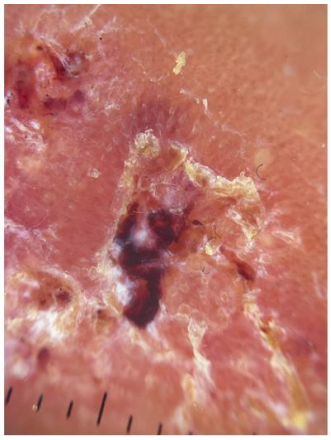

Figure 1: Dermoscopic view showing central ulceration, hemorrhagic crusts, yellow scales, and diffuse erythema.

Yellow tears were seen in 38.2% and white starburst-like structures in 35.3% (Figure 2).

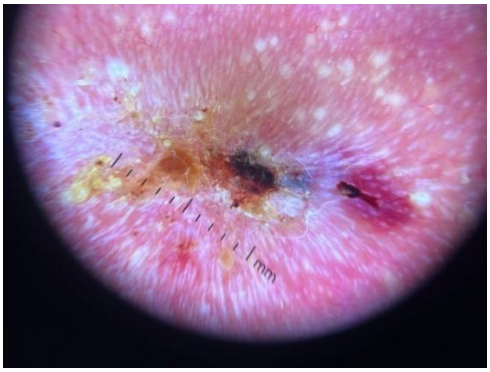

Figure 2: Dermoscopy showing diffuse erythema, yellow tears, central ulceration, and hemorrhagic spot.

Vascularization was polymorphic, mainly with comma-shaped vessels (88.2%), atypical linear vessels (70.6%), dotted vessels (61.8%), hairpin vessels (32.4%), and rarely arborizing vessels (5.9%).

Treatment was based on systemic meglumine antimoniate (55.8%) or intralesional injection (35.3%). Clarithromycin was used in some cases. Clinical outcomes were generally favorable: 91.2% achieved complete healing, with 67.6% without scarring. Dermoscopic monitoring showed a significant reduction in inflammatory signs as early as the second week.

Discussion

Our findings align with previous studies highlighting the usefulness of dermoscopy in diagnosing CL, particularly in endemic settings. Comparison with other major studies shows several consistencies and some specificities (Figure 3).

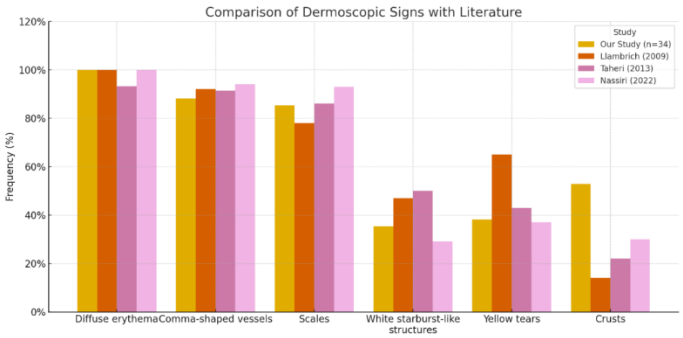

Figure 3: Comparative analysis of dermoscopic features of cutaneous leishmaniasis between our study and previously published series.

Diffuse erythema was constant (100%) in our series, as also reported by Llambrich et al. (100%) [1], Kouki et al. (97.8%) [2], and Nassiri et al. (93.2%) [3], reflecting classic dermal inflammation in CL. Comma-shaped vessels, present in 88.2% of our cases, reinforce their diagnostic value, also found in 92% of cases in Llambrich [1], 91.4% in Taheri [4], and 94.6% in Kouki [2]. They represent superficial capillary dilation.

White starburst-like structures (35.3%) were less frequent in our series but similar to Taheri (36.5%) [4]. Kouki reported a higher frequency (64.5%) [2], possibly due to a higher proportion of old fibrotic lesions. Yellow tears (38.2%) aligned with Taheri (40%) [4] and Kouki (41.9%) [2], but were less frequent than Nassiri (68.2%) [3], possibly due to differences in disease stage at the time of evaluation.

Crusts, found in 52.9% of our cases, were also common in Kouki (54.8%) [2] and Taheri (58%) [4], reflecting ulceronecrotic features. Ulcerations were seen in 41.2% of our series, close to Llambrich (44%) [1] and Kouki (47.3%) [2]. Clinically, papulo-nodular (41.2%) and ulcer-crusted forms (29.4%) matched regional data, with Nassiri reporting 37% and 30% respectively [3]. Facial involvement (55.9%) was more frequent in children (38% of our patients), as noted in other Maghrebi studies.

Regarding therapeutic follow-up, dermoscopy proved valuable. Early reduction of vascular and keratotic signs was observed by the second week. This echoes Kouki [2], who described progressive disappearance of erythema and comma-shaped vessels with intralesional Glucantime®, and Nassiri [3], who highlighted yellow tear disappearance as a good response marker.

Some rarely seen features in our series, such as targetoid structures, destroyed hairs, or red globular masses, have been sporadically reported in the literature [5-7], reflecting the diversity of presentations influenced by lesion duration, Leishmania species, and host immunity.

Overall, our findings confirm the reproducibility of dermoscopic criteria for CL. Dermoscopy is particularly useful for atypical, pauciparasitic, or multiple lesions, potentially avoiding biopsies. Its role in treatment monitoring is promising but needs validation in larger longitudinal studies.

Conclusion

This study confirms the diagnostic and prognostic value of dermoscopy in cutaneous leishmaniasis. The reproducibility of major dermoscopic criteria, their correlation with clinical data, and their evolution

during treatment highlight the importance of this tool in daily practice. Dermoscopy facilitates diagnosis of atypical forms, avoids invasive procedures, and allows rapid, reproducible therapeutic monitoring. Multicenter studies with larger cohorts will help further validate and standardize dermoscopic criteria for CL.

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