



ORIGINAL RESEARCH PAPER

Dermatology

THE DERMOSCPIC SIGNS OF LEIOMYOSARCOMAS OF THE SKIN: 2 CASE REPORTS AND A SYSTEMATIC REVIEW OF THE LITERATURE

KEY WORDS:

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ABSTRACT

Leiomyosarcomas of the skin (LMS) are rare malignant tumors of smooth muscles. Given their rarity, the literature regarding the dermoscopic features of LMS is limited. In this study we report the dermoscopy of 2 cases of LMS and systematically review the literature in search of dermoscopic descriptions of this tumor. After reviewing the literature and pooling together the cases we reported in this article, we found that the most common dermoscopic signs of LMS are milky red areas or erythematous background, the presence of pigment (either delicate or atypical), atypical vessels (polymorphous, linear irregular, dotted or arboriform vessels), white structures (shiny white lines or white scar-like patches), ulceration, and yellowish-white keratotic structures.¹⁻⁹ The major limitation of our review is that the terminology used by different authors for describing dermoscopic features isn't standardized, which limits the validity of comparing descriptions found in different articles. Also, as not all articles included in our review disclosed the dermoscopy images of the tumors which were evaluated, we weren't able to reevaluate the dermoscopic description of those tumors using a standardized terminology in order to assess the relative frequency of each dermoscopic finding.

Leiomyosarcomas of the skin (LMS) are rare malignant tumors of smooth muscles. Given their rarity, the literature regarding the dermoscopic features of LMS is limited.¹ In this study we report the dermoscopy of 2 cases of LMS and systematically review the literature in search of dermoscopic descriptions of this tumor.

Case 1: a 89-year-old woman presented with a 2cm reddish nodule on the preauricular area, with reported growth in the months prior to the medical evaluation. Dermoscopy revealed a vascular pattern of linear-irregular vessels with branched ramifications (arborizing vessels), erythematous background, and ulceration covered by yellowish-white keratotic structures (Figure 1). The diagnosis of dermal LMS was confirmed by histopathology and immunohistochemistry.



Figure 1. Dermoscopy (polarized light, no interface fluid or immersion medium) of the skin tumor of case 1. On the lower right, the macroscopic picture (non-polarized light) of the tumor.

Case 2: a 41-year-old male presented with a 5cm plaque with a

homogenous reddish-white background and eccentric nodularity on his back, with reported growth in the year prior to the dermatologic evaluation of the skin lesion. Dermoscopy revealed erythematous background, white structures (shiny white lines forming polygonal structures and white halo surrounding vascular structures), yellowish-white keratotic structures resembling superficial scales, polymorphic vessels (dotted vessels and linear-irregular vessels with branched ramifications) and hemorrhagic spots (Figure 2). Histopathology and immunohistochemistry confirmed the diagnosis of dermal LMS.

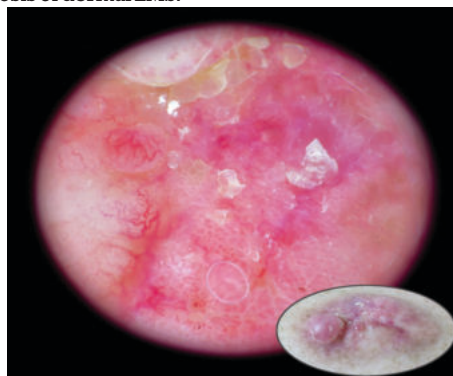


Figure 2. Dermoscopy (polarized light, no interface fluid or immersion medium) of the skin tumor of case 1. On the lower right, the macroscopic picture (non-polarized light) of the tumor.

In order to assess other possible dermoscopic features of leiomyosarcomas of the skin, we systematically reviewed the literature published until April of 2023 on the MEDLINE database using the MeSH terms for "Leiomyosarcoma" and "Dermoscopy" or "Cutaneous", searching for studies describing the dermoscopic features of cutaneous leiomyosarcomas. We identified 1066 studies, which were all screened by abstract. Out of those, 113 were retrieved for full text evaluation, and 9 studies were included in this systematic

review. Table 1 describes the findings of all studies included after full text review.

Leiomyosarcomas of the skin may present in many different dermoscopic patterns. Zaballos et al.¹ described that the most common pattern among LMS (which accounted for 44.4% of their cases) was that of an asymmetric, multilobulated tumor with white structures and linear-irregular or polymorphic-atypical vessels. In their study, 6 out of 9 lesions were misdiagnosed as either Basal Cell Carcinomas (BCC) or Squamous Cell Carcinomas (SCC). Nevertheless, this tumor may also present as pigmented lesions with either delicate or atypical pigmented networks, leading to a differential diagnosis of melanocytic lesions, such as melanoma. Interestingly, LMS may also mimic benign lesions, as both Zaballos¹ and Atzori⁷ have described patterns of presentation which resemble dermatofibromas.

Based on our review, the most common dermoscopic signs of LMS are: milky red areas or erythematous background, the presence of pigment (either delicate or atypical), atypical vessels (polymorphous, linear irregular, dotted or arboriform vessels), white structures (shiny white lines or white scar-like patches), ulceration, and yellowish-white keratotic structures.¹⁻⁸ The major limitation of our review is that the terminology used by different authors for describing dermoscopic features isn't standardized, which limits the validity of comparing descriptions found in different articles. Also, as not all articles included in our review disclosed the dermoscopy images of the tumors which were evaluated, we weren't able to reevaluate the dermoscopic description of those tumors using a standardized terminology in order to assess the relative frequency of each dermoscopic finding.

The wide array of dermoscopic findings presented by the LMS allows them to mimic different malignant tumors, most frequently BCC, SCC and melanoma. Nevertheless, even if it isn't possible to accurately diagnose LMS based solely on its dermoscopic patterns, the dermoscopic evaluation of suspected skin lesions is still invaluable, as this tumor tends to presents with dermatoscopic signs which suggest a high possibility of malignancy, such as atypical vessels, atypical pigmentation and white structures.

Ethical Statement:

This study was approved by the local Ethics Committee of the School of Medicine, Pontificia Universidade Católica do Rio Grande do Sul, Porto Alegre, RS, Brazil. VCF, GM, and TCG had full access to the data in the study and took responsibility for the integrity of the data and the accuracy of the data analysis.

Data Availability Statement:

Data available on request from the authors. The data that support the findings of this study are available from the corresponding author upon reasonable request.

Funding Information:

This study was privately funded by the research team.

Conflict of Interest Statement:

The authors have no conflict of interest to disclose.

Originality statement:

the authors state that this is an original work which has not been published and is currently not under appreciation for publication in any other Journals.

Author's contribution:

Vitor Costa Fabris:

study concept and design; data collection, analysis and interpretation of data; writing of the manuscript and critical review of important intellectual content;

Gabriela Mosená:

study concept and design; data collection, analysis and interpretation of data; effective participation in the research guidance; final approval of the final version of the manuscript.

Thais Corsetti Graziotin:

study concept and design; data collection, analysis and interpretation of data; effective participation in the research guidance; final approval of the final version of the manuscript.

Table 1. Dermoscopic descriptions of leiomyosarcomas of the skin found in the review of the literatura

Study	Number of cases	Dermoscopy
De Giorgi et al., 2008 2	1	Non-specific heterogeneous vascular pattern
Lozano Salazar et al., 2014 3	1	Homogenous brow pattern
Pasquali et al., 2014 4	1	Atypical vessels on a whitish background
Ehara et al., 2017 5	1	Peripheral brown pigmentation with yellowish-white keratotic structures on the central surface
Zaballos et al., 2019 1	9	Asymmetry (22%), multilobulated tumor (55.6%), delicate or irregular pigment network (55.6%), polymorphic vessels (55.6%), linear irregular vessels, dotted vessels, unfocused arborizing telangiectasias (11.5% each), chrysalis (37.5%), white scar-like patch (62.5%), hypopigmented areas (11.5%), milky-red areas (55.6%) and ulceration (55.6%)
De Giorgi et al., 2019 6	1	Non-specific, non-pigmented pattern. Arborizing vessels and spread telangiectasias on a background of whitish area
Atzori et al. 2020 7	1	Atypical pigmented lesion with a peripheral brownish network and central white roundish globules with scar-like features
Valsamma et al., 2021 8	1	Central homogenous yellowish-brown area and polymorphous vessels with arborising vessels around the periphery
Escobar et al., 2021 9	1	Large focused arborizing telangiectasias, with multiple ramifications, an area of delicate pigment network and whitish shiny structures
Fabris et al. (This article)	2	Erythematous background (100%), vascular structures (100%), arborizing vessels, dotted vessels and irregular vessels), yellowish white keratotic structures (100%), ulceration (50%), and white structures (50%)

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