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### RESEARCH ARTICLE

#### DERMOSCOPY OF GRANULOMA ANNULARE AND NECROBIOSIS LIPOIDICA

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##### Manuscript History

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#### Abstract

Granuloma annulare (GA), Necrobiosis lipoidica (NL) are non-infectious cutaneous granulomatous disorders, these diseases share the common histological denominator of granuloma, in recent years dermoscopy has been shown to aid in the recognition of several cutaneous granulomatous disorders, including necrobiosis lipoidica and granuloma annulare, and here we report the dermoscopy patterns of NL and GA and highlight the dermoscopy differences between these diseases.

**Objective:** To describe the dermoscopy features granuloma annulare and necrobiosis lipoidica and the dermoscopy differences between these diseases.

**Materials and Methods:** We analyzed all dermoscopy images of patients with biopsy-confirmed GA and NL not currently treated. A total of 8 patients, including 4 patients affected by NL and 4 patients with a diagnosis of GA were included in this retrospective study. Dermoscopy evaluation of all lesions in patients with granuloma annulare the vascular pattern was dominated by Unfocused vessels over a pinkish/ reddish background linear-irregular vessels and branched vessels were seen in 3 and 1 lesions, respectively on pinkish background, yellowish-orange areas at the periphery of the lesion and several white areas were also evident with diffuse linear striae. In patients with necrobiosis lipoidica. Dermoscopy evaluation of all lesions in patients with necrobiosis lipoidica, Diffuse structureless, yellowish areas in all lesions, and Well-focused vessels with branching and serpentine, in long-standing lesions, vascular structures appearance and a diameter that decreases from the center to the periphery of the lesion in 3 lesion, in one lesion ulcerations, with yellowish crusts, brownish reticular structures, and whitish structureless areas.

**Conclusion:** This study highlights the value of dermoscopy examination, a careful assessment of the different dermoscopy structures, helps in the diagnosis of pathologies that may have clinical similarities such as granuloma annulare necrobiosis lipoidica.

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#### Introduction:-

Granuloma annulare (GA), Necrobiosis lipoidica (NL) are non-infectious cutaneous granulomatous disorders, these diseases share the common histological denominator of granuloma (1) the diagnosis of non-infectious cutaneous

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granulomatous disorders is usually suspected based on morphological findings, localization, and anamnesis. Although clinical differentiation is not always easy, in recent years dermoscopy has been shown to aid in the recognition of several cutaneous granulomatous disorders, including necrobiosis lipoidica and granuloma annulare, and here we report the dermoscopy patterns of NL and GA and highlight the dermoscopy differences between these diseases.

### Objective:-

To describe the dermoscopy features granuloma annulare and necrobiosis lipoidica and the dermoscopy differences between these diseases.

### Materials and Methods:-

We analyzed all dermoscopy images of patients with biopsy-confirmed GA and NL not currently treated.

### Results:-

A total of 8 patients, including 4 patients affected by NL and 4 patients with a diagnosis of GA were included in this retrospective study, patient demographics and clinical data of the lesions are summarized in tables 1 and 2. None of the reported cases was under treatment for the cutaneous manifestation at the time of evaluation.

The mean age of patients 42 years, and there was a significant female predominance (7 women). Two patients with GA had a solitary lesion, whereas the remaining patients presented with a disseminated variant. Clinically, it consists of annular erythematous plaques with a regressing center, varying in size from 2 to 3 cm in diameter,

Dermoscopy evaluation of all lesions in patients with granuloma annulare the vascular pattern was dominated by Unfocused vessels over a pinkish/ reddish background linear-irregular vessels and branched vessels were seen in 3 and 1 lesions, respectively on pinkish background, yellowish-orange areas at the periphery of the lesion and several white areas were also evident with diffuse linear striae (fig A :a-b).

In patients with necrobiosis lipoidica, the clinical appearance is large purplish erythematous plaques with atrophic centers. Dermoscopy evaluation of all lesions in patients with necrobiosis lipoidica, Diffuse, structureless, yellowish areas, and Well-focused vessels with branching and serpentine, in long-standing lesions, vascular structures appearance and a diameter that decreases from the center to the periphery of the lesion ( fig B : a-b) , in one lesion ulcerations, with yellowish crusts, brownish reticular structures, and whitish structureless areas.

**Table 1:-** Patient demographics and clinical and dermoscopy characteristics of NL

Patients	Age /sexe	Vascular pattern	Yellowish-orange areas	whitish structureless areas.	Another sign
1	45, Women	Focused vessels with branching	Diffuse Yellowish areas	whitish structureless areas at center of lesions.	—
2	38, Women	Focused vessels serpentine and branching	Diffuse Yellowish areas	absent	lesion ulcerations, with yellowish crusts
3	42, Women	Focused vessels serpentine	Diffuse Yellowish areas	absent	—
4	50, women	Focused vessels serpentine and branching	Diffuse Yellowish areas	whitish structureless areas at center of lesions.	—

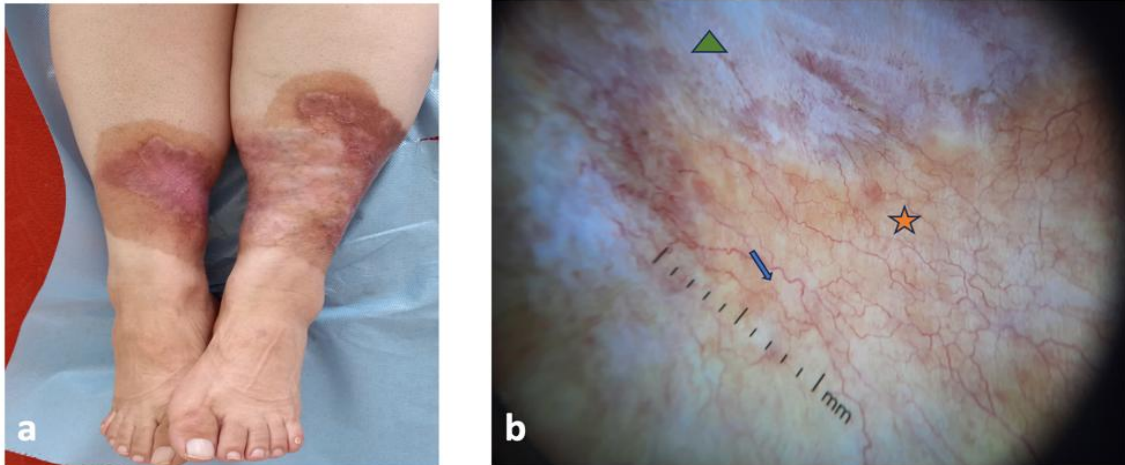
**Table 2:-** Patient demographics and clinical and dermoscopy characteristics of GA.

Patients	Age /sexe	Vascular pattern	Yellowish-orange areas	whitish structureless areas.
1	55, Women	Unfocused irregular vessels over a pinkish background	Yellowish-orange areas at the periphery of the lesion	whitish structureless areas linear
2	37, Women	Unfocused irregular vessels over a reddish background	Yellowish-orange areas at the periphery of the lesion	whitish structureless areas at center of lesions.
3	45,, Women	Unfocused vessels over a pinkish background	Diffuse Yellowish-orange areas	whitish structureless areas linear
4	46, Men	Unfocused vessels over a reddish background	Yellowish-orange areas at the periphery of the lesion	whitish structureless areas linear



**Fig. 1 . a** Clinical examination of a 45-year-old woman suffering from generalized GA shows several roundish reddish plaques on her back foot.

**b** .Dermoscopy examination : unfocussed branching vessels over a faint pinkish background ↘ , Yellowish-orange areas at the periphery of the lesion ★ ,brownish spots and several whitish irregular areas ▲



**Fig. 2 . a** Clinical examination of a 33 -year-old woman suffering from Necrobiosis lipoidica : large purplish erythematous plaques with atrophic centres.

**b** .Dermoscopy examination : Diffuse structureless yellowish areas★, Well-focused vessels with branching and serpentine ↘ whitish structureless areas ▲

### Discussion:-

Granuloma annulare, necrobiosis lipoidica iscutaneous granulomatous disorders noninfectious. These diseases sharing the common histologic denominator of granuloma formation. These diseases can be similar on a clinical, which makes the diagnosis difficult, the interesting of dermoscopy is to assist the clinician in the diagnosis.

Granuloma annulare (GA) is a benign and common inflammatory skin condition of unknown aetiology. Necrobiosis lipoidica (NL) is a chronic granulomatous dermatitis that typically presents as skin-colored to violaceous papules or nodules. These may be discrete or form annular or roundish plaques. It mainly affects women in middle age. The lesion is characterized by a well-circumscribed plaque with an atrophic, waxy, yellow brown telangiectatic center and raised violet-colored edges. The lesion associated with necrobiosis lipoidica (NL) typically appears as a single growth on the lower extremities, specifically the pretibial and medial malleolar regions. While the clinical features of NL are usually sufficient for diagnosis, distinguishing it from other granulomatous skin lesions can be challenging. Dermoscopy can aid in the differential diagnosis of NL and granuloma annulare (GA) by objectively identifying distinct vascular structures for each pathology and analyzing areas with yellowish and orange structures, as well as other signs, particularly in areas without whitish structures.

The vascular pattern in dermoscopy of GA, according to the most recent and large study, is the presence of unfocused vessels with a variable morphology (dotted in 52.0%, linear-irregular in 44.0%, and/or branching in 28.0% of cases) over a pinkish-reddish background (prevalence rate of 88.0%). Earlier studies reported lower prevalence rates (41.7%–76.6%) possibly due to the subtle nature of vessels in granuloma annulare (5). According to our study, the presence of unfocused vessels with variable morphology (linear-irregular, and branching) over a pinkish-reddish background is a nearly constant dermoscopy feature of GA (4).

For NL, the studies report the evolution over time of the dermoscopyvascular patterns of NL at different stages of progression (2). Particularly in long status lesions, vascular structures generally show a sharp appearance and a diameter that decreases from the center to the outer edge of the lesion. This is due to epidermal atrophy, which makes the dermal vessels towards the skin floor, thus appearing sharper and larger (especially in the center of the lesions because epidermal thinning is more pronounced in this location).

As a result, our observations are limited to lesions at an advanced stage, which explains the vascular pattern found, which is dominated by serpentine vessels. dermoscopy of necrobiosis lipoidica include diffuse or focal shape-

yellowish-orangish regions, a yellower hue in comparison with different granulomatous dermatoses owing to the possible presence of lipid deposits within the epidermis, compared to granuloma annulare the area without yellowish structure is characterized by yellowish orange structureless areas.

Diffusely distributed, Studies by Enzo Errichetti and Aimilios Lallas have established a correlation between the association of areas without yellow-orange structure, particularly those with a diffuse distribution, and a histological pattern of palisading granuloma (6). Other dermoscopy signs can be used to distinguish granulomas from lupoid necrobiosis, in particular the whitish structures found in the annular granulometries and probably the result of the frequent occurrence of collagen degeneration/mucin deposition in the GA, and for necrobiosis lipoidica. Other less specific dermoscopy signs include ulcerations, whitish or yellowish crusts, whitish desquamations, brownish reticular structures and whitish areas without structure, the latter being more frequent in older lesions.

### **Conclusion:-**

This study highlights the value of dermoscopy examination, a careful assessment of the different dermoscopy structures, helps in the diagnosis of pathologies that may have clinical similarities such as granuloma annulare, the detection of blurred vessels of variable morphology (dotted line, in lipid necrobiosis, the vascular pattern is dominated by well-focused vessels of variable or branched or serpentine shape and diffuse yellowish areas.

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