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Elongated linear vessels simulating branching vessels and diffuse structureless orange areas as prominent dermoscopic features of diffuse flat facial and extrafacial granuloma faciale: A case series

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Abstract

Dermoscopy can be an important help for the diagnosis of skin cancers and inflammatory cutaneous diseases. The list of the dermoscopic features reported in granuloma faciale is wide and includes vascular and non-vascular features. We report here three cases of diffuse flat facial and extrafacial granuloma faciale that exhibited elongated linear vessels simulating branching vessels and diffuse structureless orange areas. The differential diagnosis between flat-type granuloma faciale, basal cell carcinoma and cutaneous sarcoidosis can be extremely difficult, making histology mandatory before any treatment.

KEYWORDS

branching vessels, dermoscopy, granuloma faciale, orange

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INTRODUCTION

Dermoscopy is a non-invasive useful tool for the diagnosis of non-melanoma skin cancers and inflammatory cutaneous diseases.

Basal cell carcinomas (BCCs) are characterized by variegated dermoscopic features, according to different subtypes, and branching vessels (BV) are typical of nodular-type BCCs, while linear vessels can be observed in infiltrating BCCs.[1] BV and linear vessels can occur in the same BCC, as well as in other dermatologic conditions, including benign and malignant skin neoplasms and inflammatory dermatoses.

Orange colour is instead typical of granulomatous diseases such as sarcoidosis, lupus vulgaris and cutaneous leishmaniosis, as well as other non-granulomatous diseases, such as pigmented purpuric dermatosis, Spitz nevi, cutaneous amyloidosis, and lichen sclerosus.[2]

We report here three cases of diffuse granuloma faciale (GF) characterized under dermoscopy by elongated linear vessels simulating BVs and diffuse structureless orange areas.

MAIN TEXT

The first patient was a 68-year-old Caucasian man that referred to us for the presence of multiple asymptomatic pink-red patches located on his forehead. Dermoscopy with DermLite DL3 was characterized by the concomitant presence of diffuse structureless white and orange areas, with elongated linear vessels simulating BVs (Figure 1a,b). He had a previous history of actinic keratoses treated with cryotherapy and photodynamic therapy.

The second patient was an 82-year-old Caucasian man who showed wide asymptomatic pink-brown patches located on the vertex of the scalp. Dermoscopy with DermLite DL3 was characterized by the presence of diffuse structureless orange areas, perpendicular white lines,

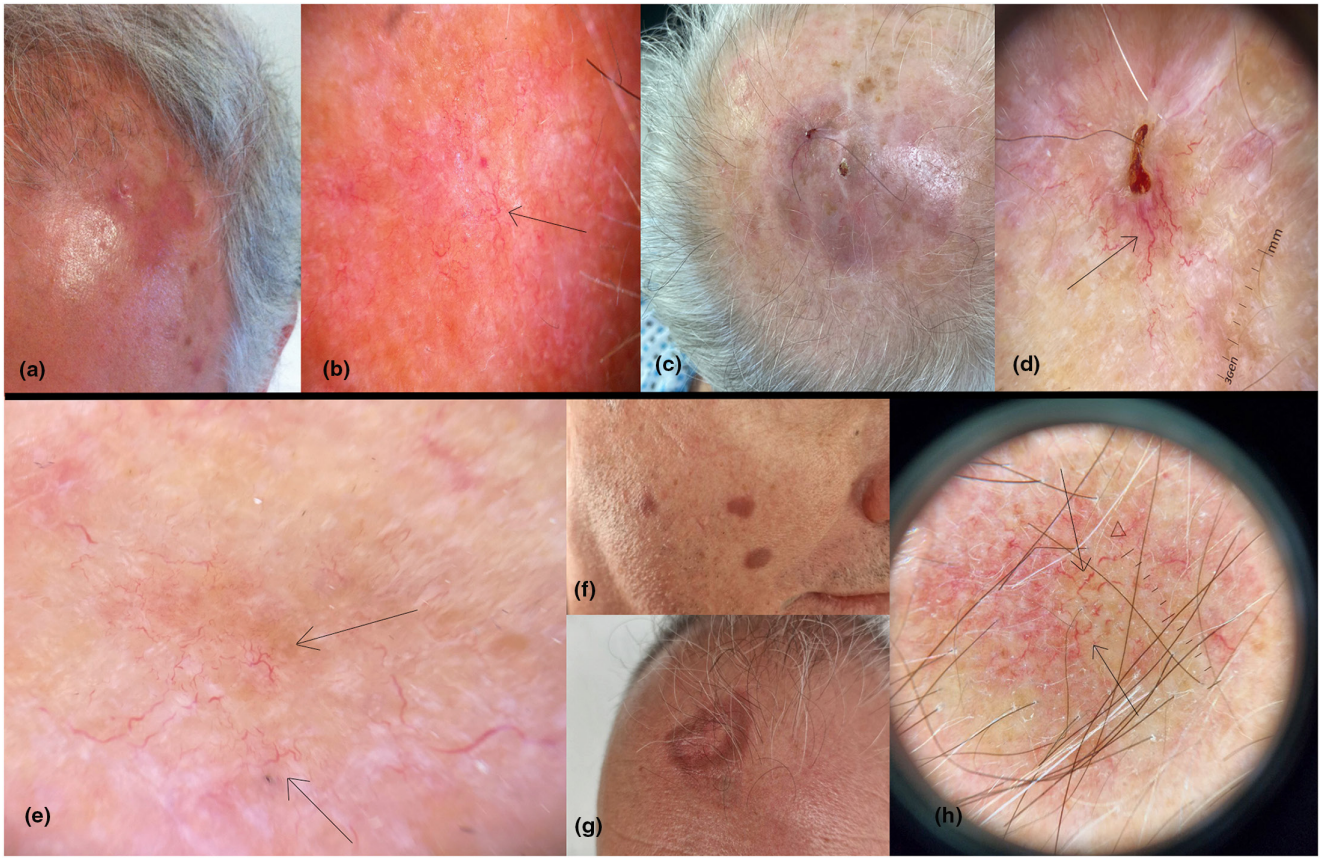

FIGURE 1 Clinical and dermoscopic features of our three patients. The first patient showed pink-red patches (a), the second one pink-brown patches (c) and the third one red-orange patches (f, g). Dermoscopy showed elongated linear vessels simulating BVs (arrow) over diffuse structureless white and orange areas in the first patient (b); elongated linear vessels simulating BVs (arrows) over diffuse structureless orange areas, associated with perpendicular white lines and a superficial haemorrhagic crust in the second patient (d, e); prominent elongated linear vessels simulating BVs on diffuse yellow-orange structureless areas in the third patient (h).

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a superficial haemorrhagic crust and elongated linear vessels simulating BVs (Figure 1c–e). He had a previous history of actinic keratoses treated with cryotherapy, diclofenac sodium 3% gel and imiquimod 3.75% cream.

The third patient was a 58-year-old Caucasian man who sought evaluation for multiple red-orange patches located on the scalp and in the malar regions, bilaterally. These lesions had been present for approximately 5 years, were stable over time and the patient's medical history was unremarkable. Dermoscopic evaluation using Heine Delta 30 revealed prominent elongated linear vessels simulating BVs on diffuse yellow-orange structureless areas (Figure 1f–h).

Histopathological examination, consistent across all three cases, revealed an intact epidermal layer and, beneath a grenz zone of normal collagen, a diffuse and nodular mixed cellular infiltrate with vascular foci in the dermis. Closer examination showed a dense polymorphous infiltrate located in the upper and lower dermis and focally even into the subcutaneous tissue. The infiltrate did not invade the epidermis and the pilosebaceous appendages but was separated from them by a narrow 'grenz zone' of normal collagen. The polymorphous infiltrate consisted of large part of neutrophils, eosinophils, mononuclear cells, plasma cells and mast cells. Some neutrophil nuclei were fragmented near capillaries forming nuclear dust. Evidence of vasculitis was observed, as some capillaries were dilated and presented eosinophilic material in the wall, along with extravasated red cells. Foci of hemosiderin were present in many macrophages (Figure 2a,b).

The diagnosis of GF in the first patient, extrafacial GF in the second one and concomitant facial and extrafacial GF in the third one was made.

Treatment consisted of pimecrolimus 1% cream twice daily for 30 days and then twice weekly for 3 months in the first patient and methylprednisolone aceponate cream once daily for 1 month and then twice weekly for 2 months in the other two. All patients achieved marked clinical improvement.

GF is a rare benign chronic dermatosis that in most cases involves the face, even though an extrafacial variant is reported, and usually occurs in middle-aged Caucasian males. The disease can present as a solitary patch or plaque or with multiple lesions, a situation defined as diffuse GF.

The clinical differential diagnosis of GF mainly includes BCCs, sarcoidosis, lupus vulgaris, lupus erythematosus, and cutaneous lymphomas.

Dermoscopy can be an important help for the diagnosis of skin cancers and inflammatory cutaneous diseases, but data on the dermoscopic features of GF are lacking.[3–10]

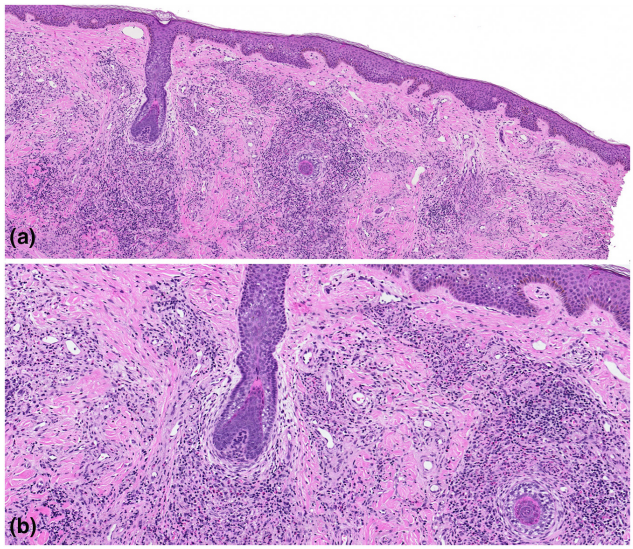

FIGURE 2 Histology showed the typical features of granuloma faciale (haematoxylin and eosin, magnification 10× in a and 20× in b): a diffuse and nodular polymorphous infiltrate in the dermis and focally into the subcutaneous tissue; the infiltrate is separated from the epidermis and the pilosebaceous appendages by a narrow 'grenz zone' of normal collagen; nuclear dust and evidence of vasculitis are observed.

The list of the dermoscopic features reported in GF, reported in Table 1, is wide and the non-vascular ones include a red background, a pink background, a reddish-orange background, whitish-greyish structureless areas, whitish streaks, linear yellow-white streaks, white striae, rosettes, scattered aggregations of brown dots and globules, blackened areas, pigmentation structures, prominent follicular orifices, perifollicular whitish halo, follicular plugs, dilated follicles, yellow dots, yellow scales.[3–10]

Considering non-vascular dermoscopic features, white areas and white structures are more frequently reported in the Literature than orange areas and this is strange for a disease that includes the term granuloma in its definition.[3–10] However, it is important to underline that even though GF is not a granulomatous disease, as the pattern of the inflammatory infiltrate is more diffuse and perivascular, an orange colour can be observed both clinically and under dermoscopy and our three patients presented diffuse structureless orange areas under dermoscopy.

The vascularity of GF has been investigated and different authors have described these vessels as linear branching or linear branched vessels, elongated focused vessels, focused and elongated telangiectasias or ectatic vessels.[3–10] Lallas and colleagues tried to compare the arborizing vessels of BCC and GF and found that BVs of their case of

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TABLE 1 Dermoscopic features of GF according to the cases reported up to now in the English literature.

Paper	Dermoscopic features
Caldarola G et al. Dermatol Ther. 2011;24 (5): 508–11	Translucent whitish-greyish structureless areas, intermingled by orthogonal whitish streaks; focused and elongated telangiectasias
Lallas A, et al. J Dermatol Case Rep. 2012; 6 (2): 59–60	Dilated follicular openings and linear, slightly arborizing vessels in a parallel arrangement, crossing all over the surface of the plaque. Red background colour and scattered aggregations of brown dots/globules
Teixeira DA et al. An Bras Dermatol. 2013; 88 (6 Suppl 1): 97–100	Pink background, with some areas blackened, white striations in different directions and prominent follicular orifices
Lallas A et al. J Eur Acad Dermatol Venereol. 2014; 28 (5): 609–14	Linear branching vessels; perifollicular whitish halo; follicular plugs; dilated follicles; pigmentation structures; yellow scales
Errichetti E et al. Dermatol Ther (Heidelb). 2016;6 (4): 471–507	Dilated follicular openings; linear branching vessels
Jardim MML et al. An Bras Dermatol. 2018; 93 (4): 587–589	Linear, branching vessels associated with marked follicles; white streaks in many directions, a yellowish area; thick and branching vessels in the periphery and marked follicles associated with a yellow-brown background in the centre of the lesion
Pampena R et al. G Ital Dermatol Venereol. 2018; 153 (3): 439–440	• Dilated follicular openings, follicular keratotic plugs, peri-follicular whitish halo and translucent whitish structureless areas on an erythematous background • An erythematous background, with ectatic vessels and whitish structures in the follicular openings
Errichetti E. Dermatol Pract Concept. 2019; 9 (3): 169–180	Dilated follicular openings; linear and/or branching dilated vessels; purpuric spots; orange structureless areas; perifollicular whitish halo; pigmentation structures; follicular plugs; yellowish scales; whitish streaks; and whitish-greyish structureless areas
Chauhan P et al. Indian Dermatol Online J. 2022; 13 (5): 686–687	Patulous follicular openings are seen as yellow dots; linear yellow-white streaks; and multiple linear vessels with branches over a diffuse reddish-orange background
Sonego B et al. Dermatol Reports. 2023; 15 (3): 9696	• An erythematous-pink background, dilatated vessels, white streaks, and multiple rosettes of about 0.1–0.2 mm diameter all over the lesions • A pink-red background, elongated telangiectasias, perifollicular whitish halo, and multiple rosettes of about 0.1–0.2 mm diameter
Savoia F et al. (present cases)	• Diffuse structureless white and orange areas, with elongated linear vessels simulating BVs • Diffuse structureless orange areas, perpendicular white lines, a superficial haemorrhagic crust and elongated linear vessels simulating BVs • Prominent elongated linear vessels simulating BVs on diffuse yellow-orange structureless areas

GF were more prominent in terms of size and number, with a parallel arrangement, while branching into smaller vessels and capillaries was less evident than in BCCs.[3] However, the linear arrangement of the vessels is not always present in GF and it is difficult to have an objective measurement of the size and number of these vessels. Our three cases of GF showed that both wide and thin elongated linear vessels simulating BVs can be observed in the same GF plaque and that branching into smaller vessels can be evident as well.

Dermoscopy is a very specific and sensitive tool for the diagnosis of BCC and BVs are considered typical of nodular BCCs. However, GF can also present vessels that mimic BVs, making the differential diagnosis between these two diseases extremely difficult.

Interestingly, the association of orange colour and elongated linear vessels simulating BVs and polymorphous vessels under dermoscopy is highly suggestive of cutaneous sarcoidosis, as shown in Figure 3a,b, and the differential diagnosis with GF can be challenging.

CONCLUSIONS

Our three cases, as well as others, reported in the Literature, did not display dermoscopic signs referring to follicular openings. In our opinion, flat GF presenting as patches lack these follicle-related dermoscopic features, while on the contrary raised GF presenting as plaques may show them.

Physicians should consider that flat-type diffuse GF may show elongated linear vessels simulating BVs and diffuse structureless orange areas under dermoscopy; the differential diagnosis with BCCs and cutaneous sarcoidosis is extremely difficult, making histology mandatory before any treatment.

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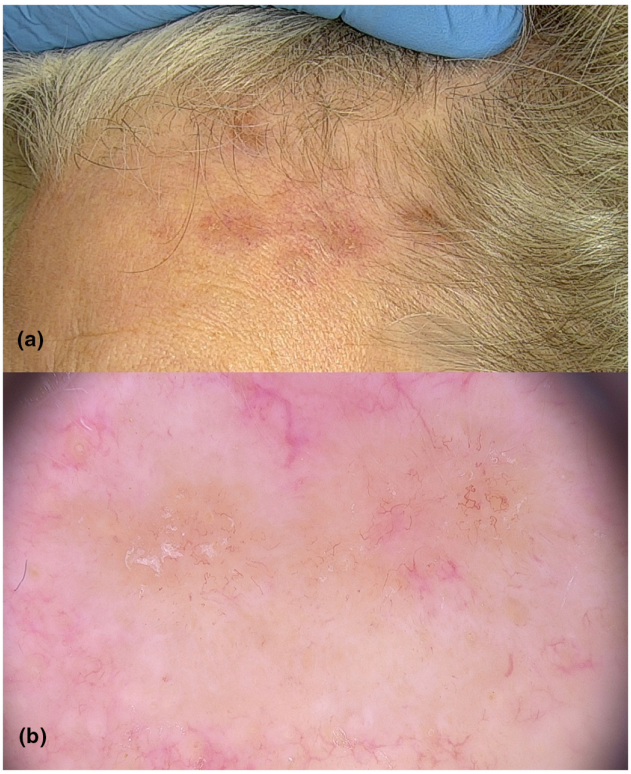

FIGURE 3 Clinical and dermoscopic features of a patient affected by cutaneous sarcoidosis. Pink orange patches (a) are characterized under dermoscopy by elongated linear vessels simulating BVs and polymorphous vessels over an orange background (b).

AUTHOR CONTRIBUTIONS

Francesco Savoia: conception and design, acquisition of data, analysis and interpretation of data; drafting of the manuscript. Matelda Medri: acquisition of data. Ignazio Stanganelli: conception and design; analysis and interpretation of data; revision of the manuscript. Davide Melandri: conception and design, acquisition of data, drafting of the manuscript. Silvia Zago: acquisition of data. Lucia Domeniconi: conception and design; revision of the manuscript. Mauro Alaibac: conception and design, acquisition of data, analysis and interpretation of data; drafting of the manuscript. Jacopo Tartaglia: conception and design, acquisition of data, drafting of the manuscript. Christian Ciolfi; conception and design, acquisition of data, drafting of the manuscript. Andrea Sechi: conception and design, acquisition of data, analysis and interpretation of data; drafting of the manuscript. All the authors have given final approval of the version to be published.

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CONFLICT OF INTEREST STATEMENT

None to declare (none of the authors have any conflict of interest to declare).

DATA AVAILABILITY STATEMENT

Data associated with this article are available and can be accessed on request from the corresponding author.

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REFERENCES

1. Peris K, Fargnoli MC, Garbe C, Kaufmann R, Bastholt L, Seguin NB, et al. Diagnosis and treatment of basal cell carcinoma: European consensus-based interdisciplinary guidelines. Eur J Cancer. 2019;118:10–34.
2. Bombonato C, Argenziano G, Lallas A, Moscarella E, Ragazzi M, Longo C. Orange color: a dermoscopic clue for the diagnosis of granulomatous skin diseases. J Am Acad Dermatol. 2015;72(Suppl 1):S60–S63.
3. Lallas A, Sidiropoulos T, Lefaki I, Tzellos T, Sotiriou E, Apalla Z. Photoletter to the editor: dermoscopy of granuloma faciale. J Dermatol Case Rep. 2012;6(2):59–60.
4. Teixeira DA, Estrozi B, Ianhez M. Granuloma faciale: a rare disease from a dermoscopy perspective. An Bras Dermatol. 2013;88(6 Suppl 1):97–100.
5. Caldarola G, Zalaudek I, Argenziano G, Bisceglia M, Pellicano R. Granuloma faciale: a case report on long-term treatment with topical tacrolimus and dermoscopic aspects. Dermatol Ther. 2011;24(5):508–11.
6. Chauhan P, Meena D. Dermoscopy of granuloma faciale in the skin of color. Indian Dermatol Online J. 2022;13(5):686–7.
7. Pampena R, Paolino G, Didona D, Longo C, Salvi M, Giona F, et al. Multiple granuloma faciale: a clinical finding from a dermoscopic point a view. G Ital Dermatol Venereol. 2018;153(3):439–40.
8. Sonego B, Sola S, Biondo G, Massone C. Two cases of granuloma faciale showing rosettes. Dermatol Rep. 2023;15(3):9696.
9. Errichetti E. Dermoscopy of inflammatory dermatoses (inflammoscopy): an up-to-date overview. Dermatol Pract Concept. 2019;9(3):169–80.
10. Kalantari Y, Peymanfar AA, Mahmoudi H, Daneshpazhooh M, Etesami I. Dermoscopy of cutaneous granulomatous disorders: a study of 107 cases. Skin Res Technol. 2023;29(1):e13273.

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