



Dermoscopic characterisation of angiolymphoid hyperplasia in skin of colour: A case series of six patients with review of literature

Dear Editor,

Angiolymphoid hyperplasia with eosinophilia (ALHE) is a rare, chronic, benign vascular proliferation of unknown aetiology, which typically presents as solitary or multiple pink-to-red papules or nodules on head or neck areas.^{1,2} It is usually asymptomatic, however, itching, bleeding and tenderness may be associated. Given the predilection for involvement of exposed sites and associated symptoms, if any, ALHE can be a distressing disorder for patients. Dermoscopy can be a useful diagnostic modality for this uncommonly encountered disorder, considering the rapid and non-invasive nature of the procedure. There is a shortage of literature on dermoscopy of ALHE in the skin of colour; findings are found to vary from those described in lighter skin phenotypes.³ In the current study, we retrospectively analysed the clinical profile of six biopsy-proven cases of ALHE with skin type IV–V and reviewed dermoscopic findings in a total of 17 lesions. Dermoscopy images were taken using DermLite™ DL4 (3Gen, San Juan Capistrano, CA, USA) at ×10 magnification. Dermoscopic findings were analysed for the presence of lines, dots, clod, structureless zone, vessels or else (according to International Dermoscopy Society criteria (IDS) for skin tumours for skin of colour).³ Presence of findings not delineated in the IDS criteria were recorded under “other relevant findings”.

All six patients were female (average age 39.1 years, range 24–50 years, Fitzpatrick’s phototype IV: 1, V: 5). Clinical history revealed eight lesions to be of recent onset (< 6 months) and nine lesions to be present ≥ 6 months (late lesions). None of the patients had any history of trauma or any other associations. Investigations of all patients, including eosinophil levels and renal function tests, were within normal limits. The most frequent findings were the presence of more

Table 1: Dermoscopic findings of angiolymphoid hyperplasia with eosinophilia

S. No	Dermoscopic findings	Number of lesions (% of total lesions-17)
1.	Vessels	16 (94.1%)
	Polymorphic	15
	a. Dotted + Linear + curved/serpentine	9
	b. Dotted + curved/serpentine	4
	c. Dotted + Linear	2
2.	Monomorphic	1
	a. Dotted	1
3.	Lines	
	White	15 (88.2)
	Brown	1 (5.8)
4.	Pigment network	7 (41.1)
	Dots	
	White	15 (88.2)
5.	Brown	8 (47.0)
	Structureless zone	
6.	White	10 (58.8)
	Brown	10 (58.8)
	Orange	1 (5.8)
	Pink	10 (58.8)
	a. Focal	6
	b. Diffuse	4
7.	Clods (red-purple lacuna)	12 (70.5)
8.	Erosions	3 (17.6)
9.	Other relevant findings (not in International Dermoscopy Society criteria)	
	Pigmentation structures	
	a. Peripheral rim of pigmentation	10 (58.8)
	Scales	16 (94.1%)
	a. White (W)	15 (with Y in 1, B in 2)
10.	b. Yellow scales and crusts (Y)	2 (with W in 1, B in 1)
	c. Brown (B)	3

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than one type or polymorphic vessels (most commonly a combination of dotted, linear, and curved/serpentine), with polarisations specific white structures (white structureless areas, white lines, white dots), and clods (red-purple lacunes) [Table 1]. The other notable dermoscopic findings in the present analysis were brown structures (structureless zone, dots), pink structureless zones either focally or as a diffuse background, pigment network and erosions (seen as red-brown dots/globules). In addition, the peripheral rim of pigmentation and scales (most commonly patchy white) were seen. [Figures 1a–d and 2a–e]

Literature on dermoscopy of ALHE is limited to a handful of reports [Tables 2 and 3]. Of a total of 9 cases of dermoscopy of ALHE described hitherto in the literature, only one was in skin of colour. Previous reports have reported red-to-reddish purple lacunae, polymorphic vessels, and white structures

over a red-to-pink background in dermoscopy of ALHE.⁴⁻⁷ The findings in the present study align with those described earlier. However, we found polarisation-specific white areas and pigmentation structures to be prominent features, apart from vessels and red lacunae. On dermoscopic-histological correlation, the presence of vessels, clods (red-purple lacunes), and pink background could represent a combination of underlying vascular proliferation with plump endothelial cells, intraluminal erythrocytes and haemorrhage, whereas polarisation-specific white structures might be due to underlying stromal fibrosis and alteration in collagen orientation secondary to vascular proliferation. The pigmentation structures in brown structureless zones/dots/lines, peripheral rim of hyperpigmentation, and pigment network could be due to pigmented skin phototype (IV-V). The presence of peripheral rim of hyperpigmentation, also seen in dermatofibroma, has been linked to trauma as



Figure 1a: Clinical image with corresponding multiple erythematous papulonodular lesions over the scalp of a female patient 1.

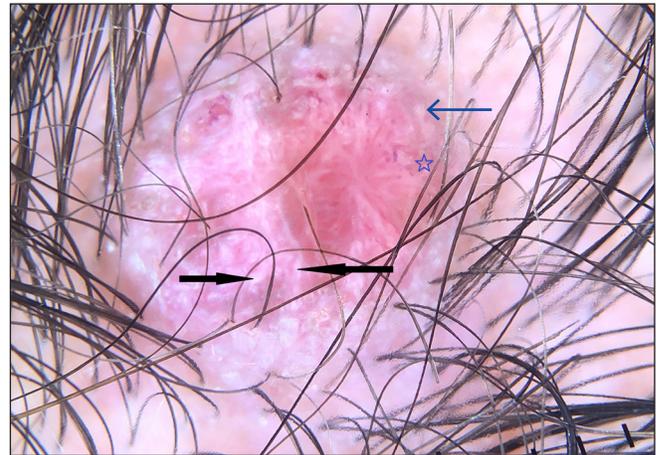


Figure 1b: Dermoscopy of lesion showing similar findings of polymorphic vessels, white structures [white structureless zones, white lines (black arrow), dots] (blue arrow), brown structureless zone (blue star), peripheral rim of pigmentation (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).



Figure 1c: Clinical image of another patient with corresponding erythematous plaque, nodule and postinflammatory hyperpigmentation over concha and antihelix of left ear of the patient 2.



Figure 1d: Dermoscopic examination showing a prominent pigment network, brown dots, along with vessels, and white structures (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).



Figure 2a: Clinical image of the third patient of angiolymphoid hyperplasia with eosinophilia (ALHE).



Figure 2b: Dermoscopy examination showing clods (red-purple lacunes, blue arrow), polarising white lines (black arrow), and vessels with a peripheral rim of pigmentation (blue star) seen (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).

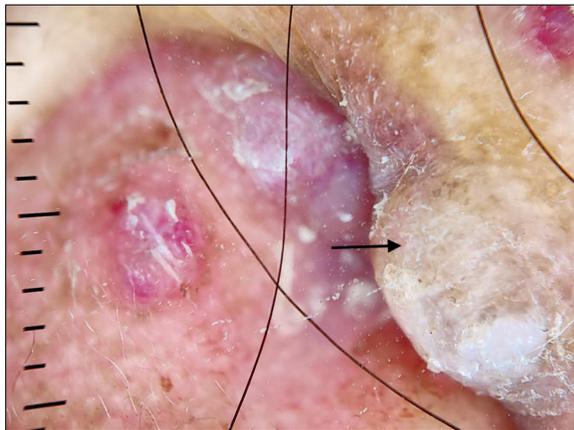


Figure 2c: Late lesion (black arrow) of the same patient 3 showing white structures, pigmentation structures with absence of clods (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).



Figure 2d: Clinical image of the fourth angiolymphoid hyperplasia with eosinophilia patient.

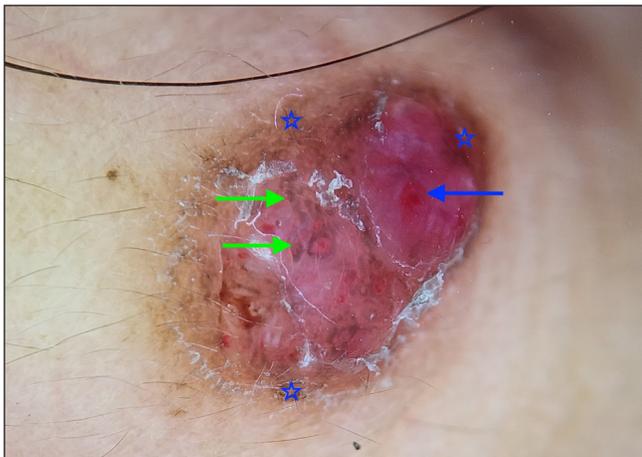


Figure 2e: Dermoscopy showing clods (red-purple lacunes, blue arrow), white scale, and pigmentation structures (green arrow) seen in dermoscopy of another patient. Note the peripheral rim of pigmentation (blue star). (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).

an underlying etiological factor.² However, no such history was elicited in our patients. We compared the dermoscopic findings between early and late lesions, which revealed more clods, red or purple and erosions in the former. In contrast, late lesions had brown structures (structureless zones, lines), pigment networks, white lines and white dots more frequently. This corroborates with the histological spectrum of ALHE, which varies according to the stage of the lesion, with vascular components more prominent in early lesions and later lesions showing inflammation around mature smaller endothelial cells and stromal fibrosis.

ALHE can act as a diagnostic challenge with a long list of differentials, including pyogenic granuloma, dermatofibroma, pseudolymphoma and Kaposi sarcoma, to name a few [Figures 3a–f]. The presence of a combination of the polymorphic vessels, white and brown structures, clods (red-purple lacunes) with pink structureless zones and erosions could be helpful dermoscopic clues in the diagnosis of ALHE

Table 2: Summary of reported cases of ALHE in the literature

Author (Year of publication)	Number of cases	Age (years)/ sex, skin type	Location of the lesions	Clinical history/morphology	History of trauma/ associations	Dermoscopic setting (polarisation or not/ magnification)
Rodriguez Lomba, et al. ⁵ 2016	2	45, Male, NS 17, female	The inner aspect of the left thigh Front of neck	Asymptomatic pink-coloured nodule Asymptomatic, multiple nodules	NS NS	polarised/NS polarised/NS
Santosa C, et al. ⁷ 2019	1	55, male, NS	Nose	Solitary, 0.5 cm nodule with a solitary ulcer. History of bleeding.	NS	NS/NS
Baştuğ NB, et al. ² 2019	2	40, female, NS 60, female, NS	Frontotemporal area Periauricular region	Pink-to-red grouped nodules, rim of brown dots, history of bleeding present There are few pinkish nodules and a history of bleeding after trauma	NS	Non-polarised/NS
Zhang LW, et al. ⁶ 2019	1	24, male, NS	Scalp	Multiple, asymptomatic, dome-shaped papules	NS	NS/NS
Kalantri M, et al. ¹ 2020	1	25, female, NS	Scalp	Multiple, asymptomatic erythematous to skin coloured, discrete and grouped, dome-shaped papules and nodules	Pregnancy	Polarised/x200
Akay BN, et al. ⁴ 2021	2	46, female, NS 35, male, NS	Right posterior auricular area Left preauricular area	Asymptomatic multinodular reddish lesion Pruritic, multiple, pink-coloured papules	NS	NS/NS

NS: not specified

Table 3: Summary of reported dermoscopic findings

Study	Dermoscopic findings (prevalence in percentage)	Corresponding terminology based on the International Dermoscopy Society consensus paper
Rodriguez-Lomba, et al. ⁵ 2016	<ul style="list-style-type: none"> Polymorphic vascular pattern (100%) (dotted, corkscrew, linear irregular vessels) Background-Diffuse pale-reddish (50%), light-pink background (50%) 	<ul style="list-style-type: none"> Polymorphous vessels- Dotted, helical, serpentine Structureless zone- red, pink
Santosa C, et al. ⁷ 2019	<ul style="list-style-type: none"> Keratin mass (100%) Pink background (100%) Ulcer on the centre (100%) Polymorphic vessels (Dotted, globular, linear irregular) (100%) 	<ul style="list-style-type: none"> White structureless zone, lines, globules Structureless zone-pink Ulceration Polymorphous vessels- dotted, serpentine
Baştuğ NB, et al. ² 2019	<ul style="list-style-type: none"> Irregular brown linear structures (50%) Red background (50%) Rim of brown dots (100%) Reddish-purple lacunes 50%) Irregular vascular structures (50%) Occasional white structureless areas (50%) Peripheral white haloes around brown dots (50%) 	<ul style="list-style-type: none"> Brown lines Structureless zone- any colour (red) Dots, any colour (brown) Clods (red-purple lacunes) NA Structureless zone-white White circles
Zhang LW, et al. ⁶ 2019	<ul style="list-style-type: none"> Abundant polymorphous globular and irregular linear vessels (100%) White structureless areas (100%) 	<ul style="list-style-type: none"> Polymorphous vessels (dotted, serpentine) White structureless zone
Kalantri M, et al. ¹ 2020	<ul style="list-style-type: none"> White, shiny, irregular areas White shiny streaks Vessels-dots, globules, linear, linear irregular, reticular Background-pink white, yellow-orange Yellow-orange crust 	<ul style="list-style-type: none"> White structureless zone White lines Polymorphous vessels-dotted, linear, serpentine branched Structureless zone- any colour (pink, yellow-orange) NA
Akay BN, et al. ⁴ 2021	<ul style="list-style-type: none"> Red clods (100%) Vessels- dotted vessels (50%), serpentine looped (50%) Subtle white lines (100%) Structureless area- pink (50%), pink brown (50%) 	<ul style="list-style-type: none"> Clods Vessels- dotted, serpentine, looped White lines Structureless zone- any colour (pink, pink, brown)

NA: not applicable



Figure 3a: Clinical image of a patient with pyogenic granuloma.



Figure 3b: Dermoscopy of pyogenic granuloma showing multiple red lacune, homogenous red zone with interconnected perpendicular white lines (also called rail lines), subtle surrounding scale (called collarette), and vessels in the periphery with conspicuous absence of pigmentation structures (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).



Figure 3c: Clinical image of a patient with dermatofibroma.



Figure 3d: Dermatofibroma showing central white structureless zone with peripheral homogeneous pigmentation on dermoscopy (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).



Figure 3e: Clinical image of a patient with pseudolymphoma.



Figure 3f: Dermoscopy of pseudolymphoma showing homogenous red background, short linear vessels with yellow-white dots representing follicular openings. (DermLite DL4; 3Gen; San Juan Capistrano, California, USA, noncontact polarised mode, 10x magnification).

when faced with red-to-pink papulonodules, although more studies with a higher number of patients are needed to affirm findings of the present study.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript, and no images were manipulated using AI.

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