

Shiny White Lines and Rosettes: New Dermoscopic Observations in Acroangiokeratosis

Acroangiokeratosis (of Mali) is an uncommon reactive vasoproliferative disorder associated with chronic venous hypertension due to any underlying cause. The disorder bears a striking resemblance with Kaposi sarcoma both clinically and histologically and therefore, it is also known as pseudo-Kaposi sarcoma. We describe new dermoscopic observations, hitherto unreported of this disorder, in an Indian male with Fitzpatrick skin type IV.

A 60-year-old male, with long-standing bilateral lower limb varicose veins, presented with an ill-defined soft dusky red plaque measuring about 5 × 3 cm involving the gaiter region of the left leg [Figure 1]. The lesion was asymptomatic and had begun as a small papule, which attained the current state over the past few months. Non-contact dermoscopy under polarized mode using DermLite™ DL3 (3 Gen Inc., San Juan Capistrano, CA, USA) showed a coppery red background, brown dots, globules and structureless areas,



Figure 1: An ill-defined soft dusky red plaque involving the gaiter region of the left leg

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reddish-pink structureless area [Figure 2], shiny white structures (lines, globules and structureless areas), red globules, dotted vessels [Figure 3], and multiple four-dot clods (white rosettes) [Figure 4]. Histopathological analysis of the lesion revealed a thinned out epidermis with effaced rete ridges, diffuse proliferation of small vessels in an edematous and slightly fibroplastic dermis, which characteristically exhibited elongated or epithelioid endothelial cells [Figure 5], thus confirming the diagnosis of acroangiokeratosis. Also noted in the dermis were extravasated red blood cells and hemosiderin deposits [Figure 6].

Acroangiokeratosis is considered to be a reactive angioproliferative disorder, occurring more commonly in males in the setting of chronic venous hypertension. It is also associated with congenital or acquired arteriovenous malformations and limb paralysis. It is clinically characterized by soft erythematous to violaceous papules, plaques or nodules predominantly involving the lower legs either unilaterally

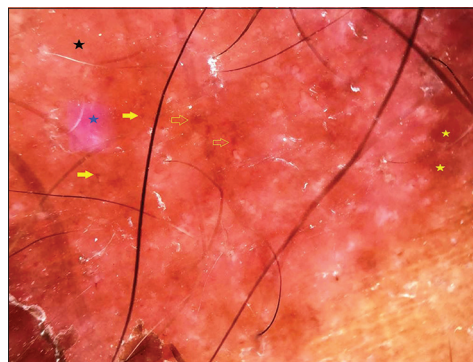


Figure 2: Non-contact dermoscopy under polarized mode showing coppery red background (black star), brown dots (yellow solid arrows), globules (yellow hollow arrows) and structureless areas (yellow stars), and a reddish-pink structureless area (blue star). [Original magnification x10]

How to cite this article: Adya KA, Inamadar AC, Palit A. Shiny white lines and rosettes: New dermoscopic observations in acroangiokeratosis. Indian Dermatol Online J 2021;12:660-2.

Received: 22-Feb-2020. **Revised:** 07-Mar-2020.
Accepted: 05-Apr-2020. **Published:** 19-Sep-2020

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Access this article online

Website: www.idoj.in

DOI: 10.4103/idoj.IDOJ_101_20

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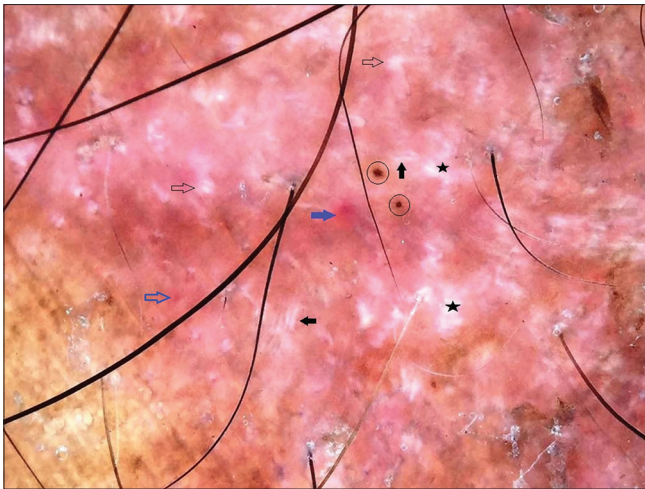


Figure 3: Non-contact dermoscopy under polarized mode showing shiny white lines (black solid arrows), globules (black hollow arrows) and structureless areas (black stars), red globule (blue hollow arrow), red globules with unfocussed red dots (blue solid arrows) and discrete dark brown dots (black circles). [Original magnification x10]

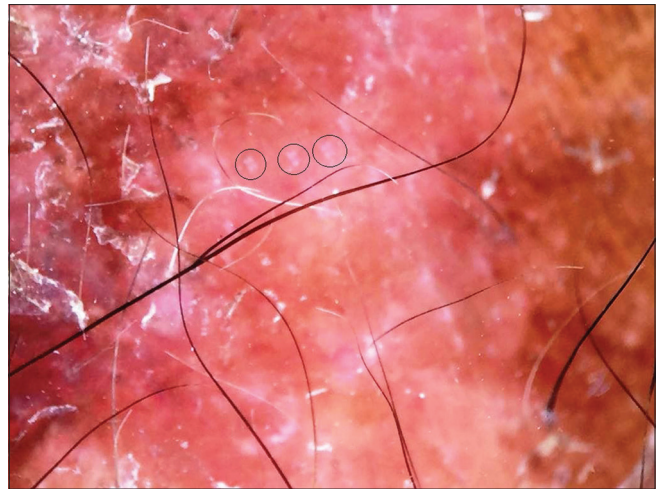


Figure 4: Non-contact dermoscopy under polarized mode showing four-dot clods or white rosettes (black circles) [Original magnification x10]

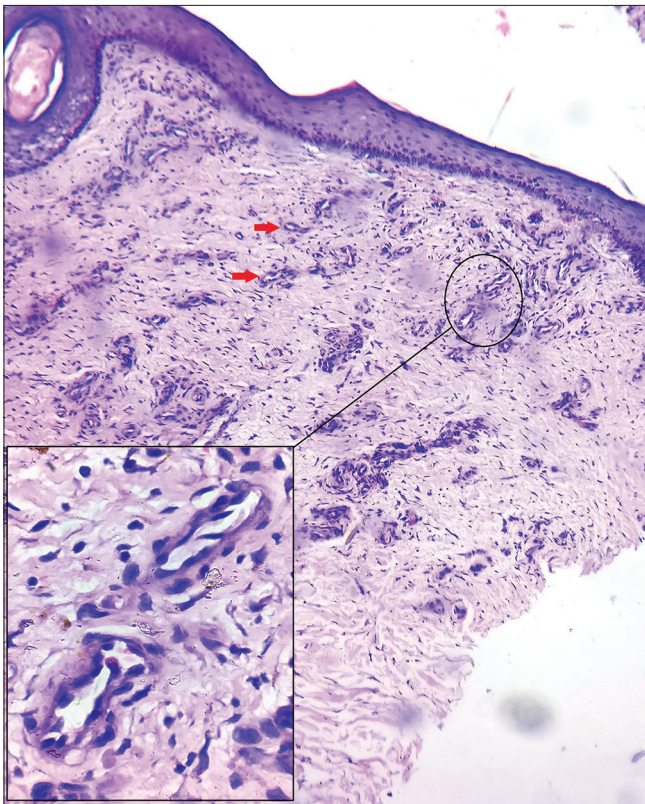


Figure 5: Photomicrograph showing thinned out epidermis with effacement of rete ridges, diffuse dermal proliferation of small capillary-like vessels (red arrows) lined by elongated endothelial cells (in set) with slight perivascular fibroplasia interspersed in a pale edematous dermis. [H and E, Original magnification x10]

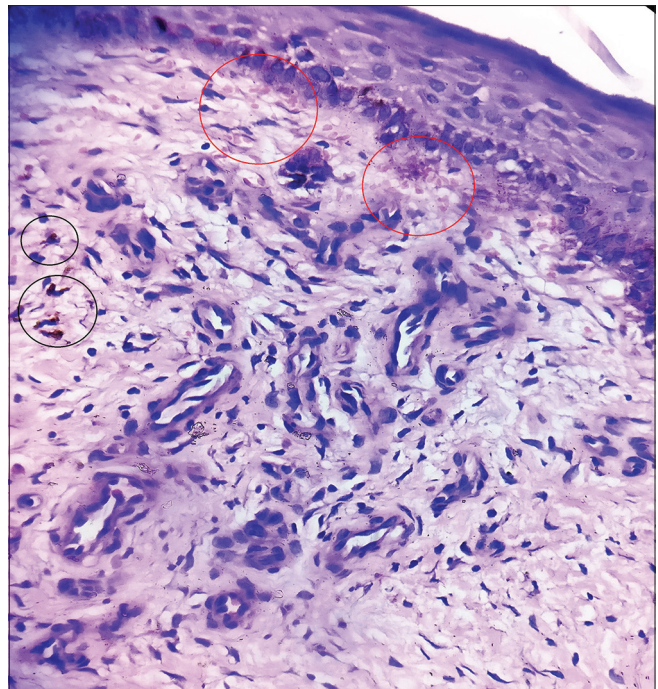


Figure 6: Photomicrograph showing extravasated red blood cells (red circles) and interstitial hemosiderin deposits (blue circles). [H and E, Original magnification x40]

or bilaterally. The lesions are hypothesized to develop as a result of ‘arteriovenous steal syndrome’ produced by the underlying factors leading to distal ischemia and localized increased production of vascular endothelial growth factors. The characteristic histological features include a diffuse

proliferation of small blood vessels that are conspicuously lined by epithelioid or ‘plump’ endothelial cells. In contrast to Kaposi sarcoma, the vessels are regular in morphology and the lining plump endothelial cells do not show any atypia either. Extravasated red blood cells, hemosiderin deposition, and minimal perivascular fibroblast proliferation are the other dermal features. The overlying epidermis may be thinned out or show hyperkeratosis.^[1]

Shiny white structures are peculiar features that are observed only in polarized dermoscopy and reflect dermal fibrotic changes. These include shiny white lines (also known as polarizing white lines that are oriented either

Table 1: Dermoscopic-histologic correlation

Dermoscopic features	Histopathologic features
Coppery red background	Diffuse proliferation of vessels, extravasated red blood cells and interstitial hemosiderin
Brown dots, globules and structureless areas	Interstitial hemosiderin
Red globules, red dots and reddish-pink structureless area	Aggregated dilated vessels, extravasated red blood cells
Shiny white lines	Orientation of thickened collagen bundles (due to fibroplasia) in different directions
Shiny white globules and structureless areas	Dermal fibrosis
Four-dot clods (white rosettes)	Narrowed adnexal orifices

parallel or perpendicular to one another), shiny white areas (dots, clods, or structureless areas) and four-dot clods or white rosettes (four bright white clods or dots arranged together as a square). The visibility of these structures is angular dependent (except for the rosettes) requiring orientation of the dermoscope at a particular angle to make them apparent. These structures are attributed to the birefringent characteristics of collagen bundles and are seen in a host of benign (scar tissue, dermatofibroma, benign lichenoid keratosis) and malignant (basal cell carcinoma and melanoma) disorders.^[2,3] The white rosettes indicate occlusion of the adnexal orifices, either by keratinous plugs or due to perifollicular fibrosis. In addition, they are also indicative of actinic damage as they are frequently seen in disorders like actinic keratosis, squamous cell carcinoma, discoid lupus erythematosus, as well as in normal appearing sun-exposed skin.^[4-6]

The literature regarding dermoscopy of acroangiokeratosis is quite scarce and findings reported thus far are essentially attributable to the vasoproliferation (polymorphic vessels, red and blue lacunae) and dermal fibroplasia (white rail lines, white structureless areas) seen histologically in this disorder.^[7,8]

The dermoscopic features observed in our case too are relatable to vascular proliferation and dermal fibroplasia. With regard to the latter, in addition to the shiny white structureless areas described previously, we also noted shiny white lines and white rosettes, which were not reported so far. Further, we also observed features accountable for extravasation of red blood cells and interstitial hemosiderin, which also are not documented as yet. The dermoscopic features observed in our case correlated well with the histological features [Table 1]. Our observations however are novel to the best of our knowledge and further studies with appropriate sample size and designs are required to validate or refute these findings.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given

his consent for his images and other clinical information to be reported in the journal. The patient understands that his names and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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