

LETTER TO THE EDITOR

Evolution of urticarial vasculitis: a clinical, dermoscopic and histopathological study

Editor

The clinical differentiation of urticarial vasculitis (UV) and urticaria, especially in urticarial skin lesions arising within 24 h, is a diagnostic challenge.¹ We aimed to analyse clinicodermoscopic findings in patients with UV and disease progression in relation to histological findings and to evaluate the usefulness of polarized dermoscopy (PD) in the diagnosis of urticarial skin lesions through a comparative dermoscopic study between patients with UV and urticaria.

Eleven patients (four men and seven women: mean age = 39.82 ± 18.70 years) clinically and histologically diagnosed with UV were enrolled. At the initial medical check-up and follow-up visits patients were interviewed using a standard questionnaire and lesional changes were continuously monitored. The duration of illness and individual lesions, distribution, and symptoms were assessed. All lesions were classified as early if they occurred within 24 h and late if they occurred after 24 h according to patient self-report and lesional change features. In accordance with the standard, clinical findings and dermoscopic patterns were evaluated throughout the disease course. All lesions were examined by a dermatologist using PD (DermLite DL3, 10 $\times$; 3Gen, Dana Point, CA, USA). The most distinct finding from the lesions was photographed using a digital camera (Cybershot DSC-W290, 3 $\times$ optical zoom; Sony, Tokyo, Japan). Among the dermoscopic characteristics, red-purple dots or globules were quantified into four grades (Grade 0 = none or few; Grade 1 = less than 20; Grade 2 = more than 20 but less than 40; Grade 3 = more than 40) according to the number present, and mean values were calculated.

After dermoscopy, a biopsy was obtained from each of the 11 patients in order to assess dermoscopic-histopathological correlations.

To assess the diagnostic value of PD in this disease setting, 22 consecutive patients with a clinical diagnosis of common urticaria in the past year (10 men and 12 women: mean age = 36.21 ± 12.50 years) were selected. Our inclusion criteria were transient urticarial weals individually resolving within 24 h histologically showing dermal oedema and sparse inflammation without evidence of vasculitis. Comparisons were made

by Chi-square test, or Fisher's exact test. The results were considered statistically significant if P was less than 0.05.

Most patients with UV had early erythematous urticariform patches or weals (11/11) and late purpuric patches (9/11). Dermoscopically, linear vessels were found in early (5/11) and late lesions (2/11), as were a homogeneous erythematous background (11/11 and 2/11, respectively) and a purple-brown background (1/11 and 10/11, respectively). Red-purple dots or globules had higher mean values in late lesions (mean grade = 2.36) than in early lesions (mean grade = 1.0), and dermoscopy showed development of a prominent purplish hue with time. In early lesions, histological analysis showed early phases of leucocytoclastic vasculitis (LCV), while late lesions demonstrated fully developed LCV (Fig. 1). The incidence of linear vessels (19/22, $P = 0.033$) was significant in common urticaria, whereas the incidence of red-purple dots or globules (10/11, $P = 0.000$) was distinct in early stage UV (Table 1).

These purpuric patterns of dermoscopy in UV are significantly different from homogenous purpuric pattern without the purpuric globules (bleeding diathesis, senile or steroid purpura), yellow hue (pigmented purpuric dermatoses) or black spot (subcorneal and subungual haemorrhage) observed in other purpuric lesions.^{2,3}

Our study demonstrated that red or purpuric dots/globules and a purple-brown background are the distinguishing dermoscopic features of UV in many cases, and changes according to time are remarkable. In particular, red or purpuric dots/globules were identified in early lesions, even though they were few in number, and were shown to help differentiate early UV from urticaria ($P = 0.000$). These investigations are related to the ability to view the vascular nature of lesions in deeper skin layers using PD. It is notable that PD features of UV were classified according to stage and analysed in relation to the histological features of the disease.

Our study confirms the observations of Vázquez-López *et al.* with regard to the initial screening of urticarial lesions by dermoscopy.^{4,5} In addition, PD may be particularly useful in differentiating early UV from early common urticaria lesions.

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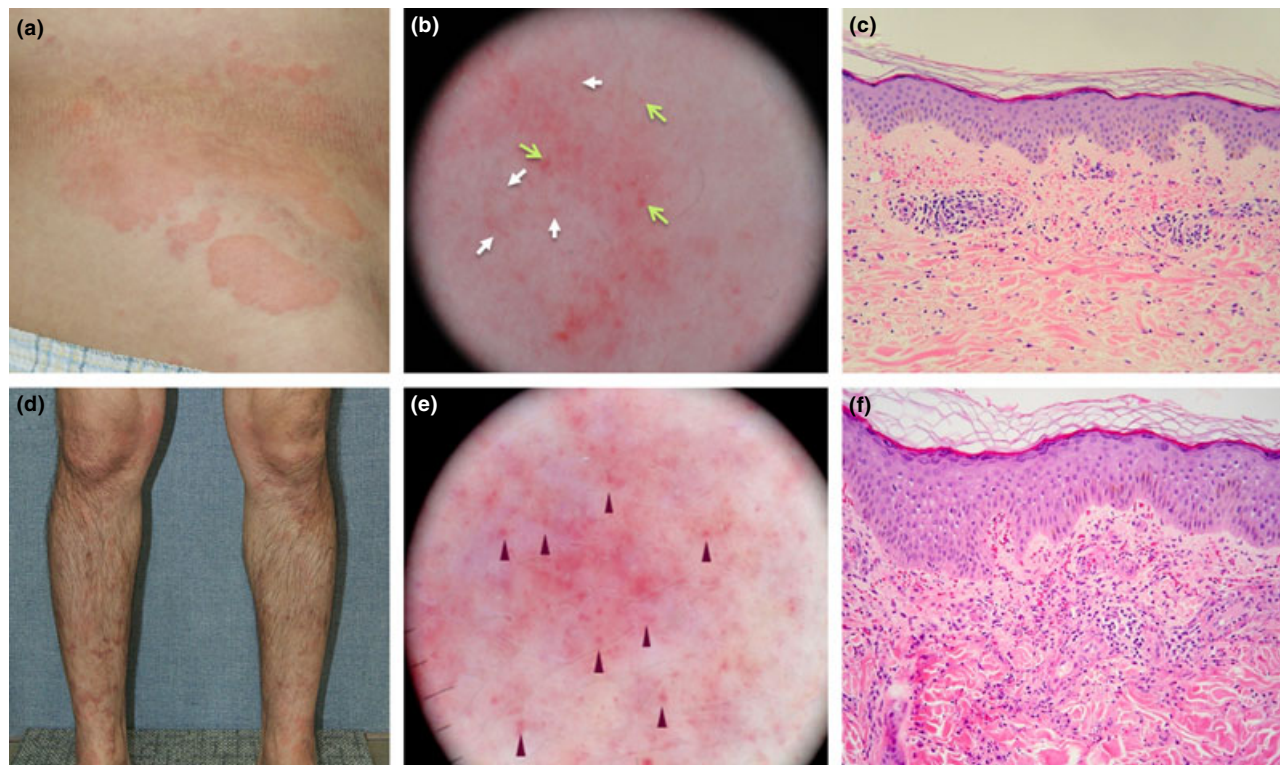


Figure 1 Early urticarial vasculitis lesions. (a) Urticarial weal-like lesions on the trunk. (b) Dermoscopic findings revealed linear vessels (white arrows) and red dots/globules (yellow-green arrows) on an erythematous background. (c) Mild extravasation of erythrocytes, dermal edema and scant nuclear dust were noted (H&E, x100). Late urticarial vasculitis lesions. (d) Urticarial purpuric lesions on the lower limbs. (e) The dermoscopic pattern consisted of multiple small, blurred purpuric dots/globules (purplish arrowheads) on a purple-brown background. (f) Prominent leucocytoclastic vasculitis (H&E, x100) (Patient 1).

Table 1 Dermoscopic features observed in early lesions of urticarial vasculitis (UV) and common urticaria

Dermoscopic findings	Early stage UV (N = 11), N(%)	Common urticaria (N = 22), N(%)	P-value
Linear vessels*	5 (45.5%)	19 (86.4%)	0.033
Homogeneous erythematous background	11 (100%)	18 (81.8%)	0.276
Purple-brown background	1 (9.1%)	0	0.333
Red-purple dots or globules*	10 (90.9%)	1 (4.54%)	0.000

*P < 0.05 between early stage UV and common urticaria.

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