Useful Dermoscopic Findings for Differentiating Rosacea from Seborrheic Dermatitis

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Sir,

Rosacea and seborrheic dermatitis are chronic inflammatory skin disorders that cause redness, scales, and itching in the face or scalp. The diagnosis of both the diseases is made mainly on the basis of clinical features. However, due to several similar clinical features of both the diseases, their differentiation is diagnostically challenging in some cases.

In this study, we clarified the clinical differentiation between rosacea and seborrheic dermatitis on the face based on dermoscopic findings. A retrospective chart review and photographic review of patients who visited the Department of Dermatology at Kyung Hee Medical Center, from January 1, 2015 to March 31, 2017 were performed. A Dermlite DL3 with polarized light (3Gen, Inc., San Juan Capistrano, CA, USA) (10-fold magnification) mounted on a Canon EOS 350D camera (Canon Corp., Tokyo, Japan) was used. Statistical analyses were performed using Fisher’s exact test and by linear association test.

The study included 49 patients with rosacea and 30 patients with seborrheic dermatitis. Dermoscopic features of patients are summarized in Table 1 and illustrated in Figure 1. Background color, vascular morphology, and arrangement showed significant differences. The most frequently observed background colors were dark red (73.5%) in the rosacea group and pinkish (63.3%) in the seborrheic dermatitis group. Arborizing vessels (49.0%) in network-like pattern (59.2%) were the most common in patients with rosacea, and dotted vessels (36.7%) and curved vessels (33.3%) in patchy pattern (63.3%) were common in patients with seborrheic dermatitis. Scales were commonly observed in both the groups. No significant difference in the frequency of appearance of scales was observed. However, white scales with scattered distribution were common in rosacea and yellow scales with a patchy distribution were common in seborrheic dermatitis. Follicular plug, demodex tails, and demodex follicular opening were more common in the rosacea group.

Dermoscopy is a noninvasive in vivo imaging technique and can be used not only for pigmented lesions but also for inflammatory skin disorders.[1-3] Lallas et al.[2] described dotted vessels and yellow scales in seborrheic dermatitis and vascular polygons in rosacea as useful dermoscopic criteria. Errichetti et al.[3] suggested the dermoscopic hallmark of rosacea was linear vessels in a polygonal network. These results are partially consistent with our study in which arborizing vessels with network-like distribution were the most common in rosacea group, and dotted or curved vessels with patchy distribution were the most common in

Figure 1: Representative dermoscopic images of rosacea (a) and seborrheic dermatitis (b). Dark red colored background and arborizing vessels with network-like pattern were observed in rosacea. Pinkish background, dotted vessels, and yellow patchy scales were observed in seborrheic dermatitis.
Table 1: Dermoscopic features of patients with rosacea and seborrheic dermatitis

| Dermoscopic variable         | Rosacea (n=49), n (%) | Seborrheic dermatitis (n=30), n (%) | P*   |
|-----------------------------|-----------------------|------------------------------------|------|
| Background color            |                       |                                    |      |
| Dark red                    | 36 (73.5%)            | 6 (20.0%)                          | 0.000*|
| Pinkish                     | 10 (20.4%)            | 19 (63.3%)                         |      |
| Normal skin color           | 2 (4.1%)              | 3 (10.0%)                          |      |
| Yellowish                   | 1 (2.0%)              | 2 (6.7%)                           |      |
| Morphology of vessels       |                       |                                    |      |
| Arborizing                  | 24 (49.0%)            | 1 (3.3%)                           | 0.000*|
| Dots                        | 4 (8.2%)              | 11 (36.7%)                         |      |
| Serpentine                  | 5 (10.2%)             | 2 (6.7%)                           |      |
| Curved                      | 9 (18.4%)             | 10 (33.3%)                         |      |
| Polymorphous                | 7 (14.3%)             | 6 (20.0%)                          |      |
| Distribution of vessels     |                       |                                    |      |
| Regular (homogeneous)       | 4 (8.2%)              | 3 (10.0%)                          | 0.002*|
| Patchy (including clustered)| 14 (28.6%)            | 19 (63.3%)                         |      |
| Peripheral                  | 2 (4.1%)              | 2 (6.7%)                           |      |
| Network-like                | 29 (59.2%)            | 6 (20.0%)                          |      |
| Scale                       | 27 (56.3%)            | 24 (80.0%)                         |      |
| Color of scales             |                       |                                    |      |
| White                       | 24 (88.9%)            | 8 (33.3%)                          | 0.000*|
| Yellow                      | 3 (11.1%)             | 16 (66.7%)                         |      |
| Distribution of scales      |                       |                                    |      |
| Patchy                      | 5 (18.5%)             | 16 (66.7%)                         | 0.001*|
| Diffuse                     | 9 (33.3%)             | 1 (4.2%)                           |      |
| Scattered                   | 13 (48.1%)            | 7 (29.2%)                          |      |
| Follicular abnormality      |                       |                                    |      |
| Follicular plug             | 28 (57.1%)            | 17 (56.7%)                         | 1.000 |
| Demodex tails               | 2 (4.1%)              | 0 (0.0%)                           | 0.523 |
| Demodex follicular opening  | 4 (8.2%)              | 0 (0.0%)                           | 0.292 |

*Difference between the groups was statistically significant (P<0.05)

Seborrheic dermatitis group. These findings reflect their histopathologic features. The major histopathologic features of rosacea are extensive telangiectasias throughout the superficial and middle dermis and correspond with arborizing vessels with network-like pattern.[4] And, dotted or curved vessels observed in seborrheic dermatitis represent the dilated blood vessels within the dermal papillae and psoriasiform hyperplasia, and are the characteristic histological features of seborrheic dermatitis.[5] In addition, based on the results from our study, background color and features of scales were helpful for differentiating the two diseases. In conclusion, dermoscopic examination can be useful in the diagnosis of patients with facial inflammatory diseases, especially in patients with rosacea and seborrheic dermatitis, which are common in clinical practice.

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Conflicts of interest
There are no conflicts of interest.

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