Dermoscopic features of discoid lupus erythematosus

Case report

An otherwise healthy 38-year-old man presented with skin lesions over his scalp and face of several months’ duration. The lesions were exacerbated after sun exposure. Physical examination showed many erythematous to brownish alopecia patches located on his scalp (Figure 1A) and atrophic plaques on his face (Figure 1B). Laboratory studies including hematologic tests, erythrocyte sedimentation rate, anti-nuclear antibody, and routine urine tests were within normal limits. Anti-dsDNA was 10 KIU/L (normal limit <10 KIU/L).

Dermoscopy (DermLite II ProHR 3Gen; 3Gen, San Juan, Capistrano, CA, USA) of the long-lasting scalp lesion showed branching red lines with white and brown dyschromia. Follicular ostia were reduced in number (Figure 1C). Dermoscopy of the right cheek lesion showed erythematous and brown dyschromia with central white macules and red lines at the periphery of the lesion (Figure 1D).

Histopathologic examination of a biopsy specimen from the scalp lesion showed interface dermatitis with superficial and deep perivascular and periappendageal lymphocytic dermatitis. Epidermal atrophy and a thickened basement membrane were noted. The papillary dermis showed dilated vessels (Figure 1E). Thick collagen bundle and dermal fibrosis were noted over white colored area of dermoscopic image (Figure 1C). A biopsy specimen from the right cheek lesion showed atrophic epidermis. A thickened basement membrane and pigment incontinence were prominent. The dermis showed dilated vessels (Figure 1F). Dermal fibrosis and increased fibroblasts were noted over white colored area of dermoscopic image (Figure 1H). Direct immunofluorescence examination of both specimens showed IgG and focal IgA bands at the dermoeidermal junction. Discoid lupus erythematosus (DLE) was diagnosed.

The active DLE lesions were treated with mometasone furoate 0.1% cream and followed up by dermoscopy. In a recent-onset active auricular lesion, follicular keratin plugs (arrows) and scales (arrowheads) cleared after treatment with residual red dyschromia and telangiectasia (Figure 2A, B).

Discussion

DLE is estimated to be responsible for 50–85% of cases of chronic cutaneous lupus erythematosus. Scalp involvement is the most frequent presenting symptom. Characteristic scalp lesions are round or discoid with follicular plugging and adherent scales. Patients may complain of scalp tenderness and pruritus. Skin biopsy may be crucial to differentiate DLE from other causes of cicatricial alopecia. However, skin biopsy and histologic examination are time-consuming and may be associated with pain and scarring.

Dermoscopy is an important tool for diagnosing pigmented and nonpigmented skin lesions. Recently, this method has proven to be a useful aid in the diagnosis and follow-up of DLE.3,4,5 We reported dermoscopic features in a DLE case.

Dermoscopic findings described in DLE of the scalp include loss of follicular ostia, follicular keratotic plugs, branching vessels, honeycomb pigmented networks, dyschromia, and variable scaling.6 Follicular red dots are a newly described dermoscopic finding of DLE, which seem specific for DLE and are not detected in other cases of alopecia.7 The morphologic distribution of the red dots corresponds to follicular openings and was thought to result from dilated vessels and red blood cell extravasation in perifollicular distributions around the isthmus, which explains the red color of the dermoscopic pattern in DLE. The dermoscopic findings of the scalp lesion in our case showed branching red vessels with minimal to no follicular red dots, which correlated with the pathologic findings showing papillary dermal dilated vessels without erythrocyte extravasation. Follicular red dots have been reported only in scalp lesions of recent onset and not in long-standing alopecic areas.7 The absence of follicular red dots in the long-lasting lesion in our patient supports the hypothesis that the follicular red dot pattern is more specific for active, recent-onset DLE of the scalp.2 In addition, the dermoscopic patterns we observed included white and brown dyschromia, which could be the result of pigment incontinence and dermal fibrosis (scarring), respectively. These patterns can be found in less active, long-lasting DLE lesions on either the scalp or nonscalp areas.

Clinical diagnosis of cicatricial alopecia is not always straightforward, but dermoscopy has become a useful tool. In classic lichen planopilaris, there are perifollicular scales, white dots, and reduced numbers of follicular ostia. In frontal fibrosing alopecia, there are reduced numbers of follicular ostia, perifollicular scales, perifollicular erythema, and branching capillaries.4,5 The use of dermoscopy for the clinical evaluation of the scalp in cases of cicatricial alopecia, such as DLE, lichen planopilaris, and frontal fibrosing alopecia, improves diagnostic capacity beyond simple clinical inspection and reveals novel features of the disease.2 However, the dermoscopic findings in cicatricial alopecia are not conclusive as some findings are not disease characteristic. Dermoscopy is also an emerging tool in assessing many other hair and scalp disorders. Dermoscopic findings related to various scalp disorders, such as androgenetic alopecia, alopecia areata, pediculosis capitis, and hair shaft abnormalities, have been described.2,6

There are fewer reports of the dermoscopic findings of DLE located in nonscalp areas. A recent article reported two cases of DLE on the nose and right cheek.7 Dermoscopic findings showed keratin plugs with variable erythema and pigmenetary changes. The keratin plugs cleared after topical steroid treatment. The
Figure 1  (A) Clinical image of scalp DLE showing red to brown scarring alopecia patches. (B) Clinical image of facial DLE showing a pigmented plaque with central scar tissue. (C) The dermoscopic image of scalp DLE showed branching red lines with loss of follicular ostia. Focal brown and white macules were noted. No obvious follicular red dots were observed. Biopsy was taken around the circled area covering red and white dyschromia. (D) Dermoscopic image of facial DLE showing pigmentary and erythematous changes with central white macules. Radiating red lines were noted at the periphery. Biopsy was taken around the circled area covering pigmented and white dyschromia areas. (E) Histologic examination of the scalp DLE over red dyschromia area (asteroid) showed thinned epidermis with atrophic hair follicles. Superficial and deep perivascular and perifollicular lymphocytic inflammation with dermal fibrosis were noted. Dilated vessels were prominent in the papillary dermis. No extravasated erythrocytes were noted (H&E, 40×). (F) Histologic examination of facial DLE over the pigmented dyschromia area (asteroid) showed thinned epidermis, thickened basement membrane, pigment incontinence, and dilated vessels (H&E, 400×). (G) Thickened collagen fiber and fibrosis were noted over white dyschromia area of scalp lesion (cross) (H&E, 100×). (H) Dermal fibrosis with fibroblasts proliferation was noted on white dyschromia area of facial lesion (cross) (H&E, 400×).
authors found that keratin plugs were evident only in active lesions, not in scars or healed skin, which correlates histologically with the hyperkeratosis that is more prominent in the follicular opening. We observed keratotic plugs and scaling cleared after topical steroid treatment in an active recent-onset lesion. This finding can help the clinician to assess the evolution and response to treatment of discoid lupus lesions. In addition, it is interesting to note that dermoscopic findings of facial DLE lesions are similar to that of dermatofibroma. The most common dermoscopic findings of dermatofibroma are central white patch and peripheral pigmented reticulation, which are also found in our case. Red lines at the periphery of the lesion were noted in facial DLE. This feature is less commonly seen in dermatofibroma, although dotted vessels could occur in 30% of dermatofibroma.

In conclusion, dermoscopy could be a useful tool in assisting diagnosis of DLE and in assessing the activity and treatment response of the disease.

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Figure 2 Dermoscopic image of a recent-onset active DLE lesion before (A) and after (B) topical steroid treatment. Follicular keratin plugs (arrows) and scales (arrowheads) cleared after topical steroid treatment with red dyschromia and telangiectasia.