**Follicular Red Dots**

**A Novel Dermoscopic Pattern Observed in Scalp Discoid Lupus Erythematosus**

Antonella Tosti, MD; Fernanda Torres, MD; Cosimo Misciali, MD; Colombina Vincenzi, MD; Michela Starace, MD; Mariya Miteva, MD; Paolo Romanelli, MD

**Background:** Scalp dermoscopy plays an important role in the diagnosis of hair and scalp disorders, and specific dermoscopic patterns have recently been associated with several disorders causing noncicatricial alopecia, such as androgenetic alopecia, alopecia areata, trichotillomania, and tinea capitis.

**Observations:** We describe the morphologic and pathologic features of a new dermoscopic pattern, referred to as "follicular red dots," that was found in scalp lesions of 5 patients with active discoid lupus erythematosus (DLE). Follicular red dots appear as erythematous polycyclic, concentric structures, with a diameter ranging from 0.16 to 0.47 mm, regularly distributed in and around the follicular ostia. In the pathologic findings, red dots correspond to widened infundibula plugged by keratin and surrounded by dilated vessels and extravasated erythrocytes. Retrospective blinded evaluation of the dermoscopic images of 155 patients with cicatricial alopecia suggests that follicular red dots are a specific feature of DLE because the pattern was not identified in the images of cicatricial alopecia resulting from other diseases.

**Conclusions:** The follicular red dot pattern is a specific feature of scalp lesions of active lupus erythematosus of the scalp. Recognition of this distinctive dermoscopic pattern may help the clinician to differentiate DLE from other diseases causing cicatricial alopecia.

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**SCALP DERMOSCOPY PLAYS AN IMPORTANT ROLE IN THE DIAGNOSIS OF HAIR AND SCALP DISORDERS, AND SPECIFIC DERMOSCOPIC PATTERNS HAVE RECENTLY BEEN ASSOCIATED WITH SEVERAL DISORDERS CAUSING NONCICATRICIAL ALOPECIA, SUCH AS ANDROGENETIC ALOPECIA, ALOPECIA AREATA, TRICHOTILLOMANIA, AND TINEA CAPITIS.**

**METHODS**

The study was approved by the ethics committee of our institution (University of Bologna, Bologna, Italy). Since 2007, follicular red dots have been noticed in the alopecic scalps of 5 patients, 4 women and 1 man (age range, 29-66 years) affected by discoid lupus erythematosus (DLE). Follicular red dots appear as erythematous polycyclic, concentric structures, with a diameter ranging from 0.16 to 0.47 mm, regularly distributed in and around the follicular ostia. In the pathologic findings, red dots correspond to widened infundibula plugged by keratin and surrounded by dilated vessels and extravasated erythrocytes. Retrospective blinded evaluation of the dermoscopic images of 155 patients with cicatricial alopecia suggests that follicular red dots are a specific feature of DLE because the pattern was not identified in the images of cicatricial alopecia resulting from other diseases.

**RESULTS:** The follicular red dot pattern is a specific feature of scalp lesions of active lupus erythematosus of the scalp. Recognition of this distinctive dermoscopic pattern may help the clinician to differentiate DLE from other diseases causing cicatricial alopecia.

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chen planopilaris (LPP), 14 with frontal fibrosing alopecia, and 29 with folliculitis decalvans. Images were collected by one of the investigators (C.V.) and then numbered and a blinded evaluation was performed by another investigator (M.S.), who was unaware of the diagnosis.

**RESULTS**

Follicular red dots appeared as erythematous polycyclic, concentric structures, with a diameter ranging from 0.16 to 0.47 mm, regularly distributed in and around the follicular ostia. The color of the dots ranged from light to dark red, and their number varied in the different patients as well as in the different patches of the same patients (range, 50 to >100 at a magnification of ×20). We detected the follicular red dot pattern in 18 patches of scalp DLE. Three patients had the pattern in all the examined alopecic areas, whereas in 2 patients the pattern was detected only in scalp lesions of recent onset and not in long-standing alopecic areas. The follicular red dots occasionally contained an emerging hair shaft or a keratotic plug. Arborizing red lines were commonly observed in the interfollicular scalp between the red dots (Figure 1). The follicular red dot pattern was not influenced by pressure and did not change if a gel or alcohol was applied as an interface solution. The pattern was not present in the DLE facial lesions.

Specimens from 3-mm punch biopsies obtained from a scalp region exhibiting the follicular red dot pattern showed active LE lesions. Horizontal sections revealed widened infundibulum plugged by keratin and surrounded by dilated vessels and extravasated erythrocytes (Figure 2). Vertical sections showed epidermal atrophy and a moderately dense, perivascular, perinfundibular infiltrate of lymphocytes (Figure 2). Sebaceous glands were reduced in number and size. The papillary dermis showed slight fibroplasia with limited mucin deposition.

A follow-up examination after treatment revealed complete hair regrowth with disappearance of the follicular red dot patterns in 1 patch of DLE in a 66-year-old woman treated with hydroxychloroquine sulfate, 200 mg/d, for 3 months (Figure 3). The pattern persisted unchanged in all the other patients (mean duration of follow-up, 11 months).

Retrospective evaluation of the dermoscopic images of 155 patients with cicatricial alopecia revealed that the
Follicular red dots are a specific feature of DLE since we did not identify this pattern in the images of cicatricial alopecia caused by other diseases. The follicular red dot pattern was present in 5 of 13 patients with DLE (38%). Furthermore, patients with DLE exhibiting this pattern had a mean disease duration of 6 months (range, 2-18 months), which was considerably shorter than that of those patients without the red dot patterns (24 months; range, 12-60 months).

Scalp dermoscopy is very useful to differentiate cicatricial from noncicatricial alopecia. To our knowledge, however, this is the first article proposing specific dermoscopic features to differentiate lymphocytic primary cicatricial alopecias.

Dermoscopic findings described in DLE of the scalp include loss of follicular ostia, follicular keratotic plugs, arborizing vessels, honeycomb pigmented network, dyschromia, and variable scaling (Figure 4). In patients with LPP, reported dermoscopic features include perifollicular erythema, simple red loops, arborizing vessels, hyperkeratosis of the follicular ostia, and white dots, associated with a variable degree of loss of follicular units (Figure 5).

Follicular red dots seem to be a specific finding of DLE because we did not detect this pattern in patients with cicatricial alopecia caused by other diseases. The
morphic distribution of the red dots corresponds to follicular openings and is very similar to the distribution of the yellow dots in bald patches of alopecia areata.13 The presence of interfollicular arborizing red vessels did not reduce the visibility of the follicular pattern, and we believe that the absence of interfollicular simple loops, which are not usually detected in DLE, also had no influence on the visibility of the follicular pattern.

Both red dots and yellow dots correspond pathologically to dilated infundibula containing keratotic material. The presence of dilated vessels and red blood cell extravasation in perifollicular distribution around the isthmus explains the red color of the dermoscopic pattern in DLE. We also believe that the notable reduction in number and size of sebaceous glands explains the lack of a yellow hue on dermoscopy.

The pathologic findings of scalp lesions of DLE without the follicular red dot pattern showed mild vasodilation but no blood cell extravasation. The absence of follicular red dots on dermoscopy in the scalp lesions of LPP is not surprising because in LPP the pathologic findings show neither follicular keratotic plugging nor dilated vessels with focal hemorrhages.

The term “red dots” had already been used to describe a vascular dermoscopic pattern found in the skin lesions of patients with Darier disease, lichen planus, acquired digital arteriovenous malformation, lichen aureus, lichen simplex chronicus, viral warts, and clear cell acanthoma.7,12 However, this dermoscopic pattern is characterized by tiny, dotted, pointed red structures, representing capillaries in the papillary dermis and thus is completely different from the follicular pattern observed in the scalp of a patient with DLE.

The follicular red dot pattern was consistently identified in scalp lesions of recent onset with pathologic features of active LE of the scalp. Their presence is expression of the dilated plugged infundibula that characterize the active disease.

In conclusion, the follicular red dot pattern is a new dermoscopic feature of active scalp DLE. The red dots seem to be related to the presence of dilated infundibula surrounded by dilated vessels with pronounced red blood cell extravasation. The pattern is probably easily identified on dermoscopy owing to the presence of atrophic epidermis in active DLE lesions. Recognition of this distinctive dermoscopic pattern may help the clinician differentiate DLE from other diseases causing cicatricial alopecia.

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Correspondence: Antonella Tosti, MD, Department of Dermatology, University of Bologna, Via Massarenti 1, 40138, Bologna, Italy (antonella.tosti@unibo.it).

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