Dermatology Practical & Conceptual

In Vivo Characterization of the Inflammatory Infiltrate in Discoid Lupus Erythematosus (DLE) by Line-Field Confocal Optical Coherence Tomography (LC-OCT)

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Case Presentation

A 37-year-old woman was referred to our department for a large, rapidly growing erythematous plaque of her left nasal sidewall (Figure 1). On dermoscopy, an erythematous background with white-yellow follicular plugs and linear vessels was detected. Line-field confocal optical coherence tomography (LC-OCT) showed a regular honey-combed epidermis with the presence of multiple follicular plugs on the confocal horizontal plane of visualization. At the junctional level, linear vessels and abundant dendritic and small roundish cells were seen, corresponding to the inflammatory infiltrate. On LC-OCT, a bright infiltrate at the dermoepidermal junction was visible around the plugged follicular infundibula (Figure 1). Histology confirmed the suspected diagnosis of discoid lupus erythematosus (DLE) (Figure 1C).

Teaching Point

DLE is the most prevalent type of chronic cutaneous lupus erythematosus, an autoimmune and potentially disfiguring skin condition due to the pigmentary sequelae and scars on exposed areas. It most frequently affects women in their third and fourth decades of life.

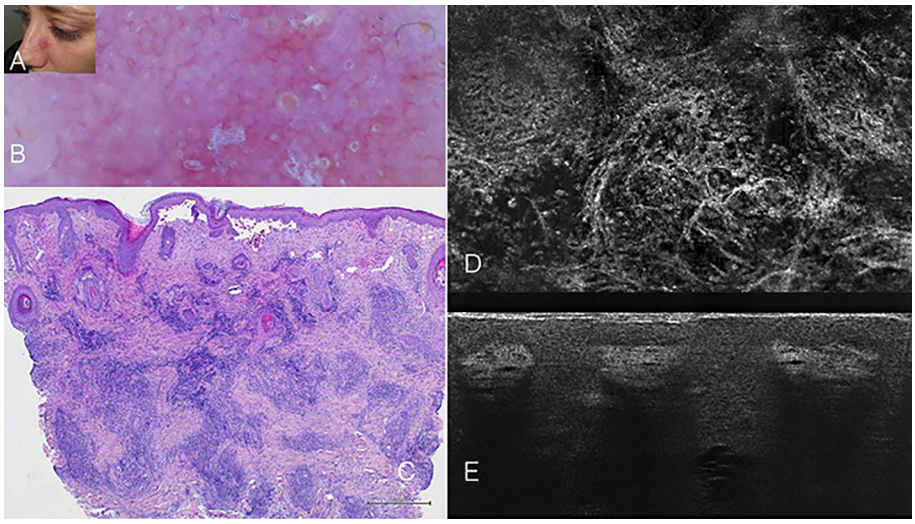

Figure 1. (A) A large erythematous plaque on the nasal sidewall in a 37-year-old female. The lesion had developed in about two months after intense sun exposure during the summer, and the patient herself had treated it with topical antibiotics for several weeks. (B) Dermoscopy revealed an erythematous background with white-yellow follicular plugs and linear vessels. (C) Histological examination showed epidermal atrophy, basal vacuolization, and focal epidermal-dermal detachment; nodular perivascular and periadnexal lymphoid infiltrate in the dermis (H&E stain, original magnification × 20). (D) LC-OCT on the confocal horizontal plane of visualization, at the junctional level, linear vessels and abundant dendritic and small roundish cells were seen, corresponding to the inflammatory infiltrate. On the vertical section, a bright infiltrate at the dermoepidermal junction was visible around widened periadnexal spaces.

LC-OCT is a non-invasive optical imaging method which has enabled the combination of high cellular resolution with satisfying skin penetration in order to produce in vivo skin images. The integration of LC-OCT in the diagnostic process is promising, as it could potentially offer a noninvasive means of diagnosing DLE, particularly in cases where biopsy may not be feasible or desirable, such as in frequently exposed areas or in young patients. Further research involving more cases of DLE are needed to assess the diagnostic accuracy and utility of LC-OCT in clinical settings [1,2].

References

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