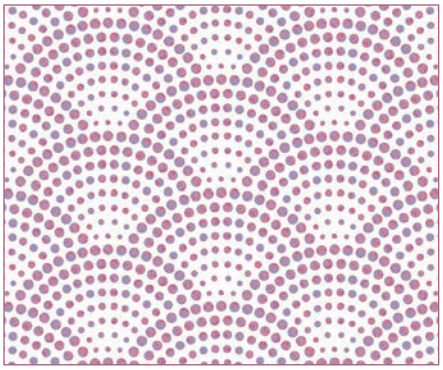

CASE REPORT

Lupus Erythematosus Lichen Planus Overlap Syndrome Mimicking Squamous Cell Carcinoma

ABSTRACT

Lupus erythematosus lichen planus (LE-LP) overlap syndrome remains an uncommon diagnostic entity, combining both the histologic and clinical features of lupus erythematosus and lichen planus. A rare and challenging diagnosis, clinicopathologic correlation is essential for accurate and timely identification. Histologically, superficial evaluation of lupus erythematosus lichen planus overlap syndrome can mimic squamous cell carcinoma due to the presence of squamatized keratinocytes with concomitant irregular acanthosis. Here, we present a case of LE-LP overlap syndrome in a patient with long standing systemic lupus erythematosus initially misdiagnosed as squamous cell carcinoma.

KEYWORDS: Lupus erythematosus lichen planus overlap syndrome, hypertrophic lupus erythematosus, systemic lupus erythematosus, annular plaques, hyperkeratotic plaques, squamous cell carcinoma, squamous neoplasia, squamous cell carcinoma mimic

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First appearing in the literature in 1977, lupus erythematous lichen planus (LE-LP) overlap syndrome was initially described by Romero et al[1] as a histologic entity with the features of both diseases; however, they proposed the findings as unique variants of either lupus erythematosus or lichen planus. The official adoption of the LE-LP overlap syndrome appears to have occurred one year later, in 1978, as described by Jamison et al,[2] in association with cryoglobulinemia and hypocomplementemia. To this day, LE-LP overlap syndrome remains an uncommon diagnostic entity, combining both the clinical and histopathologic features of lupus erythematosus and lichen planus.[3] Histologically, the diagnosis of LE-LP overlap syndrome, as proposed by Nagao et al,[3] requires the presence of histologic and immunologic features of lupus erythematosus and lichen planus in a single biopsy specimen.[4,5]

Clinical descriptions of LE-LP overlap syndrome vary widely, ranging from typical, flat-topped papules, as seen in lichen planus, to atrophic scaling plaques, more reminiscent of discoid lupus erythematosus (DLE).[6,7] Although predominantly reported to coexist with DLE, LE-LP overlap syndrome has also been reported to occur with subacute cutaneous lupus erythematosus, clinically represented by hyperkeratotic annular and polycyclic plaques.[8] Here, we present a case of LE-LP overlap syndrome in a patient with long-standing systemic lupus erythematosus (SLE) initially misdiagnosed as squamous cell carcinoma.

CASE PRESENTATION

A 42-year-old Caucasian woman with a medical history of SLE was referred for surgery for lesions formerly histologically interpreted as squamous cell carcinoma of the bilateral arms. Initial diagnosis of SLE was established three years prior, when the patient was hospitalized and found to have pleural and pericardial effusions, as well as pancytopenia, in the setting of antinuclear antibodies (ANA) at a titer of 1:640. Approximately one year after self-discontinuation of azathioprine, the patient sought dermatologic evaluation for mildly pruritic skin changes. Physical examination revealed bilateral erythematous, atrophic, and verrucous papules coalescing into annular and polycyclic plaques of the bilateral arms (Figure 1), with scaling, atrophic, pink papules and plaques on the face, ears, lateral and posterior neck and chest, with sparing postauricular and submental locations (Figure 2).

Previous shave-biopsy of the lesions yielded reports ranging from verruca vulgaris to squamous cell carcinoma. Subsequent excisional biopsies were performed for further diagnostic studies, as well as lesional 4mm punch biopsies from the bilateral arms. Hematoxylin and

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eosin staining revealed squamatized epithelia with irregular, exaggerated acanthosis, overlying rounded parakeratosis, accompanied by a lichenoid and vacuolar interface at the dermoepidermal junction accompanied by wedge shaped hypergranulosis, irregular jagged rete peg alteration, and a perieccrine lymphocytic infiltrate (Figure 3), with basement membrane thickening demonstrated by Periodic Acid Schiff staining (not shown). Direct immunofluorescence (DIF) revealed fine granular immunoglobulin G (IgG) deposition along the basement membrane and within keratinocyte nuclei in the lower one-third of the epidermal strata, as well as granular IgM with cytoid body staining, C3, C5b-9 and weaker IgA deposition along the epidermal and adenexal basement membranes, with shaggy fibrinogen staining (Figure 4).

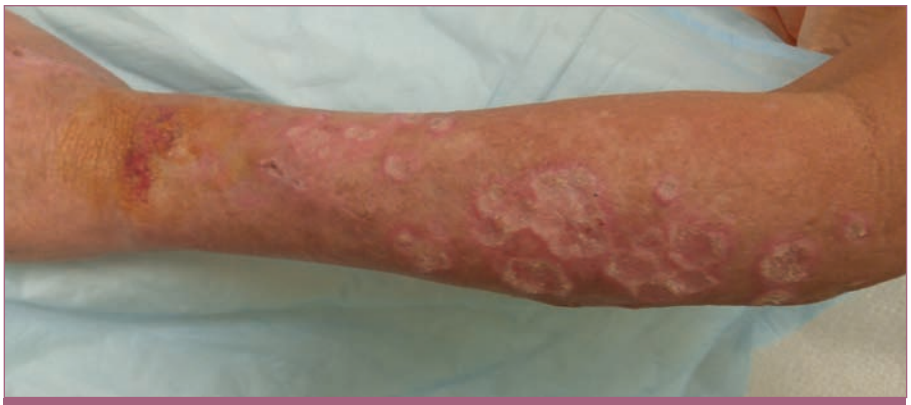

FIGURE 1. Erythematous pink atrophic, and verrucous appearing hyperkeratotic papules coalescing into annular and polycyclic plaques of the bilateral arms

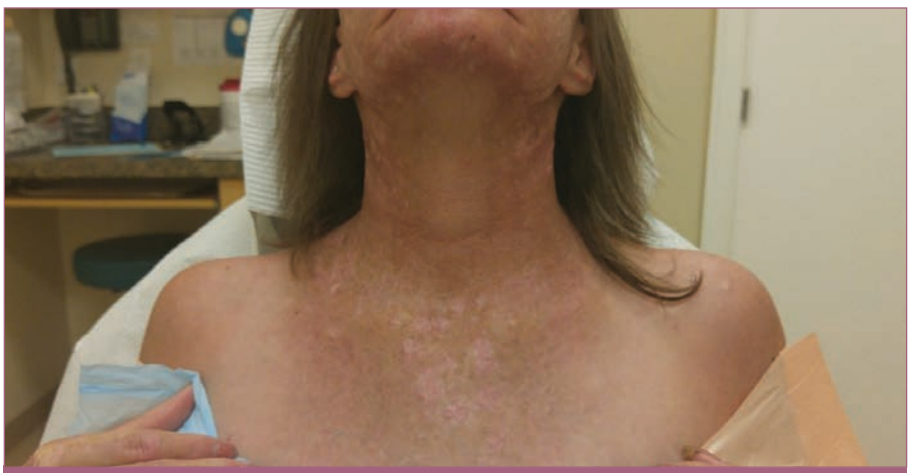

FIGURE 2. Scaling, atrophic, and erythematous pink papules and plaques of the face, ears, and lateral and posterior neck and chest, with submental sparing

DISCUSSION

Clinically, this case of LE-LP overlap syndrome, presented with photodistributed hyperkeratotic annular papules and plaques, invited the clinical differential diagnosis of hypertrophic discoid lupus erythematosus, psoriasiform subacute cutaneous lupus erythematosus, lupus erythematosus-lichen planus overlap syndrome, and keratoacanthoma marginatum centrifugum, all in a patient with high-titer, untreated, ANA-positive systemic lupus erythematosus.

Evaluation of the previously biopsy-proven squamous cell carcinoma, obtained by an outside dermatologist, revealed a shave biopsy of squamatized keratinocytes, irregular acanthosis, with overlying rounded parakeratosis, mimicking squamous neoplasia. Histopathologically, DLE on sun-damaged skin, especially the rare variant of hypertrophic LE (HLE), with its squamatization, irregular and exaggerated acanthosis, and keratinocyte atypia, has been reported to mimic squamous cell carcinoma, keratoacathomas, and verruca vulgaris.[9,10] LE-LP overlap syndrome can be differentiated from hypertrophic lichen planus due to perieccrine lymphocytic infiltrate, a distinguishing feature which also differentiates this entity from keratoacanthomas with a lichenoid tissue reaction. LE-LP overlap syndrome can be differentiated from DLE or HLE due to the presence of IgM in cytoid bodies, and shaggy fibrinogen staining on DIF, a feature seen in LP or LP overlap syndrome.

In combination, the presence of histologic and immunologic features of both LE and LP confirm the diagnosis of LE-LP overlap syndrome.

Further convoluting the clinical picture is the well-documented risk of developing squamous cell carcinoma within longstanding lesions of DLE and hypertrophic LP.[5] Our patient's occupation—a manual laborer working predominantly outside—as well as her fair skin and light-colored eyes predispose her to excessive actinic damage, further complicating the diagnosis. Previously biopsied three different times with varying reports, we propose that LE-LP overlap syndrome be added to the inflammatory interface dermatitides, such as hypertrophic lupus erythematosus (HLE), that can histologically mimic squamous neoplasia.

Accordingly, it is crucial for clinicians to retain a degree of suspicion when evaluating bilateral, symmetric hypertrophic lesions in a photodistribution and maintain open communication with pathologists in evaluating said cases. We recommend excisional, incisional, or deep punch biopsy for proper evaluation of eccrine structures, crucial for proper diagnosis, as well as lesional punch biopsy for direct immunofluorescence to facilitate prompt and accurate diagnosis of this uncommon condition.

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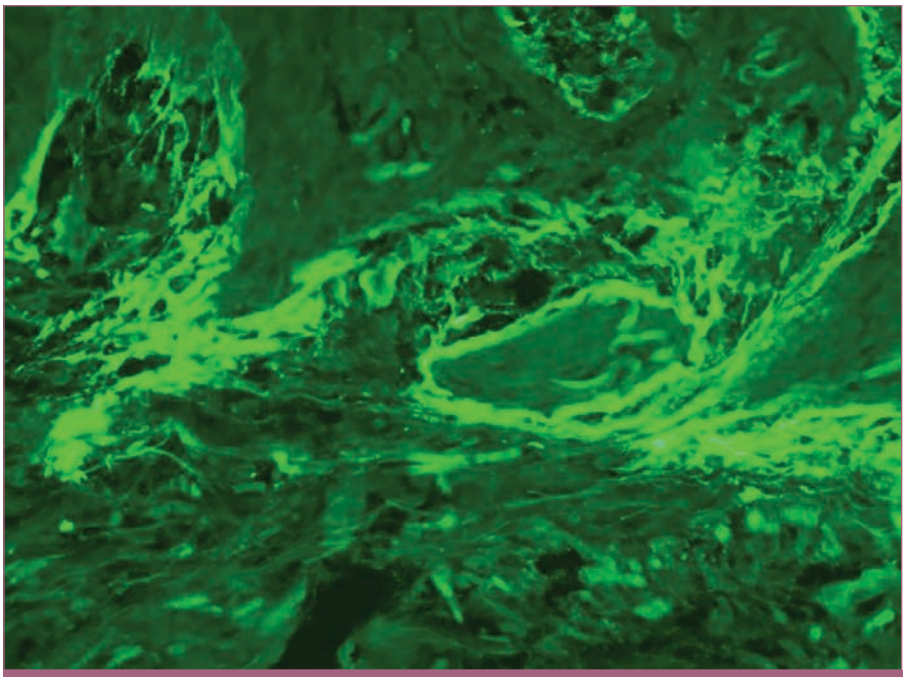

FIGURE 3. Shaggy fibrinogen staining along the basement membrane

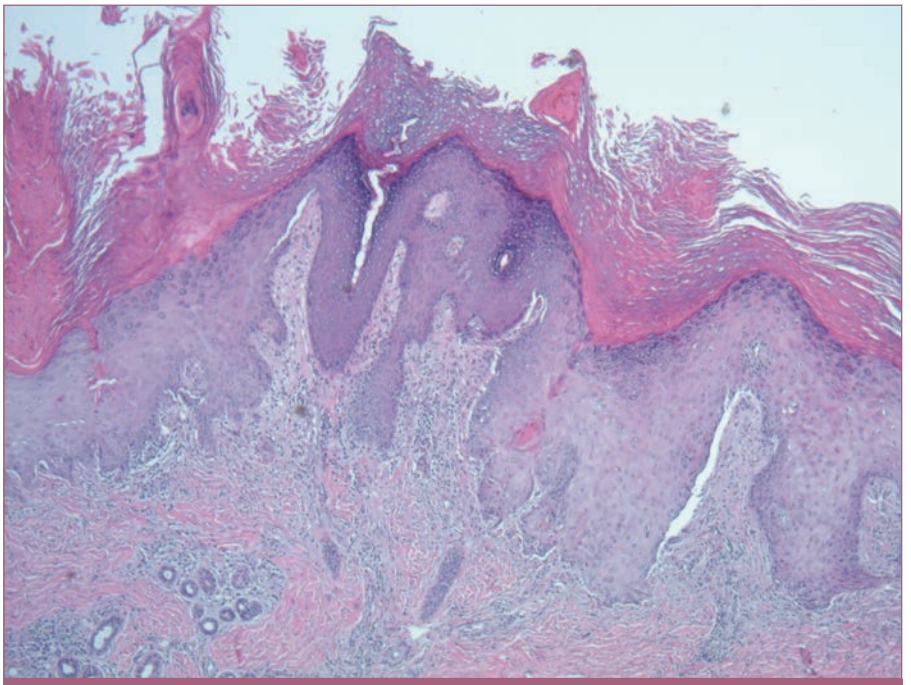

FIGURE 4. 4x magnification, hematoxylin & eosin staining; irregular acanthosis of the epidermis with squamatized keratinocytes and overlying alternating rounded parakeratosis and compact orthokeratosis, with a light band-like lymphocytic infiltrate and vacuolar interface; wedge-shaped hypergranulosis present throughout the specimen, as well as periecrrine inflammation and light mucin deposition

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