

Lichenoid and granulomatous dermatitis: Report of two cases from Iran

Hamidreza Ghasemibasir, MD ¹
 Leila Khezrian, MD ^{2,3}
 Mohammad Reza Sobhan, MD ^{2,3}

1. Department of Pathology, Hamedan University of Medical Sciences, Hamedan, Iran
2. Department of Dermatology, Hamedan University of Medical Sciences, Hamedan, Iran
3. Psoriasis Research Center, Hamedan University of Medical Sciences, Hamedan, Iran

**Corresponding Author:*
 Leila Khezrian, MD
 Farshchian Hospital, Department of Dermatology, Psoriasis Research Center, Hamedan University of Medical Sciences, Hamedan, Iran
 Email: khezrian.leila@yahoo.com

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Lichenoid and granulomatous dermatitis is a new entity which is histologically defined by a band like lymphocytic infiltration in the upper portion of the dermis with obscuring the dermoepidermal junction and accompanied by basal layer degeneration and granulomatous inflammation. Herein, we presented two Iranian women with similar cutaneous and histopathologic findings. Both patients had asymptomatic subcutaneous nodules on their hands. The pathological manifestation in both of them was lichenoid and granulomatous dermatitis.

Our investigations indicated different underlying causes of the lesions in our patients. In one patient, the lesion was associated with hyperthyroidism and in the other one it was accompanied by rheumatoid arthritis.

Keywords: dermatitis, lichenoid, granulomatous

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INTRODUCTION

Lichenoid eruptions represent a heterogeneous clinical group which has the light microscopic pattern of a superficial band-like lymphocytic infiltrate accompanied by degenerative epithelial alterations in common ¹.

Lichenoid and granulomatous dermatitis defines a distinctive pattern of cutaneous inflammation that may be part of the morphologic spectrum of idiopathic lichenoid reactions such as lichen planus and may be seen with lichenoid drug reactions, endogenous T-cell dyscrasias and as a feature of certain systemic diseases ².

Its histopathologic finding is a band like lymphocytic infiltration in the upper portion of the dermis accompanied by basal layer degeneration and

granulomatous inflammation. This histopathologic pattern has been associated with a number of disorders including underlying hepatobiliary diseases such as hepatitis C, underlying systemic autoimmune disorders such as rheumatoid arthritis, thyroiditis, Crohn's disease; endocrinopathies like diabetes mellitus, and infections caused by *mycobacteria*, *treponema*, *streptococci*, and human immunodeficiency virus (HIV); and post-herpetic reactions ^{2,3}.

CASE REPORT

Case 1

The first case was a 53-year-old Iranian woman with a complaint of multiples subcutaneous nodules

on her hands from two years ago that gradually increased in number, with no pain nor pruritus. Physical examination showed multiple firm, non tender and movable nodules that were located on the dorsal aspect of her hands including distal interphalangeal (DIP), proximal interphalangeal (PIP), and metacarpophalangeal (MCP) joints, measuring about 0.5 to 1 cm in size. The patient had a history of hyperthyroidism from 10 years ago. She was treated with anti thyroid drugs for 5 years.

She did not mention any family history of hypertension, diabetes mellitus, and hyperthyroidism. Thyroid gland examination shows no significant findings such as goiter, nodule, or tenderness.

A clinical differential diagnosis of firm nodules in the dorsal aspect of hands over PIP and MCP joints was rheumatoid nodules, but there was no evidence of arthralgia, arthritis and systemic involvement. Sarcoidosis was also a differential diagnosis. Chest X ray showed no significant findings.

Her laboratory results were as follows: rheumatoid factor: negative, serum angiotensin-converting enzyme (ACE): 50IU/L (normal: 8-52 IU/L), anti-TPO: 262.7 IU/L (normal: up to 34 IU/L), VDRL: negative, PPD after 48 hours: 2mm (negative).

Histopathologic examination revealed a band like lymphocytic infiltration in the upper portion of the dermis with obscuring the dermoepidermal junction accompanied by basal layer degeneration, granulomatous inflammation, and some multinucleated giant cells, so called lichenoid and granulomatous dermatitis (Figure 1). Foreign bodies that can cause granulomatous reactions were excluded by microscopic examination with polarized light.

Case 2

A 70-years-old woman with rheumatoid arthritis from 20 years ago, under treatment with systemic non-steroidal anti-inflammatory drugs since 10 years ago, was referred to our clinic because of generalized pruritic purpuric eruptions on the extensor surfaces of her limbs and trunk from 1 year ago.

On physical examination, she had multiple mobile and firm nodules on the posterior surfaces of her hands including MCP and PIP joints, which

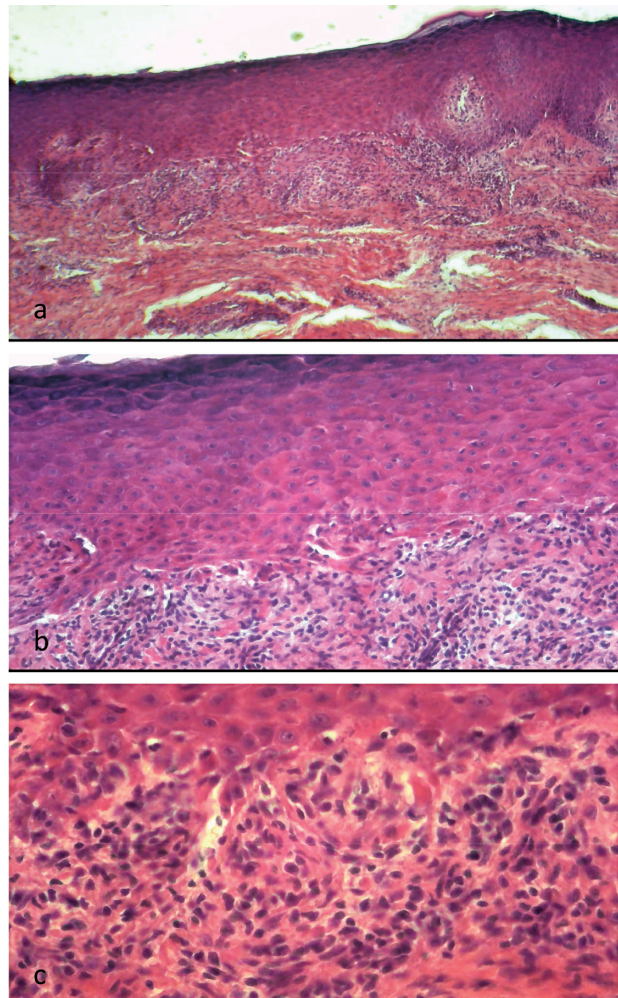


Figure 1. (a) Band like lymphocytic infiltration in the upper portion of the dermis obscuring the dermoepidermal junction (H & E, ×40). (b) Band like lymphocytic infiltration and basal layer degeneration and multiple granuloma (H & E, ×100). (c) granulomatous inflammation (H & E, ×200).



Figure 2. Multiple mobile and firm nodules on the posterior surfaces of the joints.

developed since 5 years ago with no tenderness and discoloration (Figure 2). Erythematous papules and petechiae with evidence of excoriation were seen

on the extensor surfaces of all four limbs and on her trunk, too. Arthritic joints were observed on both of her knees and fingers and she complained of arthralgia.

On laboratory investigations, all tests were within their normal ranges, erythrocyte sedimentation rate (ESR) was 12 mm/h, PPD was negative (3 mm), and Chest X ray findings were unremarkable.

Two biopsies were taken from skin lesions, one from the trunk and the other from her hand. The first biopsy was compatible with lymphocytic vasculitis because of perivascular lymphocytic infiltration in the upper dermis. The second biopsy of the hand nodules showed hyperkeratosis, irregular acanthosis, basal layer degeneration and band like granulomatous inflammation in the papillary dermis composed of lymphohistiocytic infiltration,

epithelioid histiocytes and multinucleated giant cell without neutrophilic infiltration, leukocytoclasia, necrobiotic material, degenerated collagen bundles and mucinous changes, and was compatible with lichenoid and granulomatous dermatitis related to rheumatoid arthritis (Figure 3.a to 3.c)

DISCUSSION

Interface dermatitis includes conditions in which the primary pathology involves the “interface,” or the dermoepidermal junction. The components of this “interface” include the basal layer of the epidermis, and referred to as lichenoid tissue reaction. A wide range of inflammatory skin diseases exhibits interface changes with a considerable overlap of histological features, of which lichen planus is a prototype.

Lichenoid infiltrates are a manifestation of infection, including active infection, or an idiopathic response to some drugs or microbial antigens and may be seen in several other conditions including lupus vulgaris, benign, premalignant, and malignant conditions like lichenoid keratosis, and Paget’s disease ⁴⁻⁶.

Granulomatous disorders are a large group of conditions that share a common denominator, namely histologic evidence of granuloma formation. A granuloma is an organized collection of epithelioid histiocytes. Some disorders with granuloma formation may include many bacterial, fungal, or viral infections (herpes simplex), non-infectious inflammatory disorders, foreign body reaction, and even neoplasms ^{7,8}.

As mentioned earlier, a number of disorders such as underlying hepatitis C, rheumatoid arthritis, thyroiditis, Crohn’s disease, diabetes mellitus, mycobacterial, treponemal, and streptococcal. Some other related conditions are drug eruptions including lipid-lowering agents (statins), beta blockers, ACE inhibitors, H₂ antagonists, plaquenil, and antibiotics (tetracycline, oxacillin), antihistamines, sulfur-containing drugs, and erythropoietin ^{2,8}.

In all these cases, excessive T-helper 1 (Th1) activity is expected to generate an infiltrate rich in lymphocytes and histiocytes ³. The defining histomorphology is a band-like infiltrate of lymphocytes and histiocytes closely applied to the undersurface of the epidermis and obscuring the dermoepidermal junction ⁸.

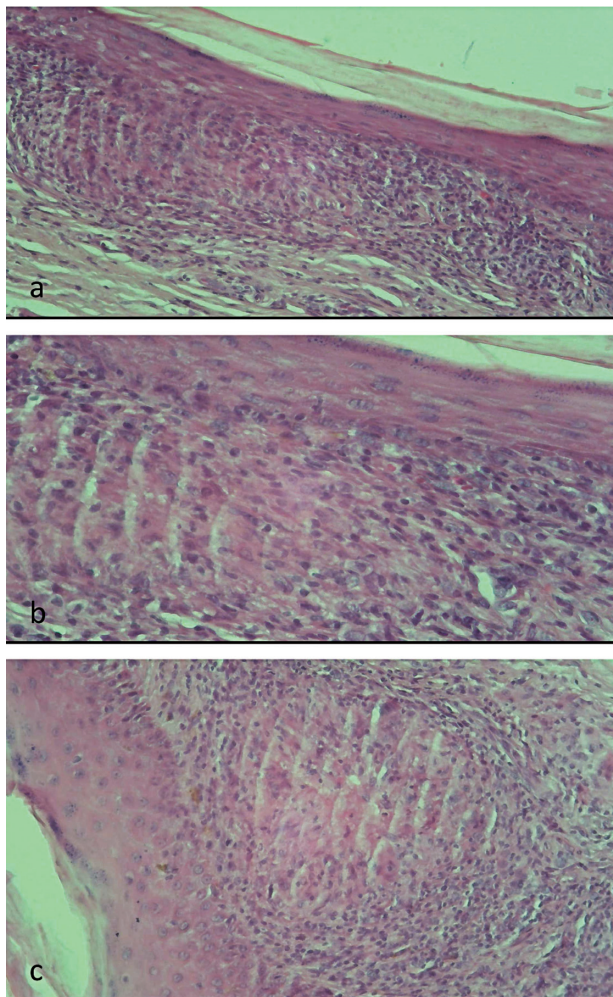


Figure 3. (a) Basal layer degeneration and band like lymphohistiocytic infiltration (H & E, ×40). (b) Granulomatous inflammation in papillary dermis and epithelioid histiocytes (H & E, ×100). (c) Granuloma formation (H & E, ×200).

As for case 1, a history of thyroid disorder from 10 years ago and a high titer of anti TPO antibody along with lichenoid and granulomatous dermatitis on histopathologic examination showed the association of autoimmune diseases with lichenoid and granulomatous dermatitis.

In case 2, a history of rheumatoid arthritis from 20 years ago and exclusion of other causes, and evidence of lichenoid and granulomatous dermatitis on histopathologic examination showed the association of autoimmune diseases with lichenoid and granulomatous dermatitis, as well.

Sarcoidosis is a chronic multisystemic granulomatous disease of unknown etiology. It involves the skin in about 25% of the cases with different clinical expressions, and a lichenoid granulomatous infiltrate involving the dermo-epidermal junction is a very rare pattern⁹. Our patient had no other symptoms of sarcoidosis, including pulmonary, ophthalmic, and skin signs and symptoms. Sarcoidal granuloma (seen in sarcoidosis, orofacial granulomatosis, and tattoo granuloma) is a well-circumscribed collection of epithelioid histiocytes with relatively few or no lymphocytes^{6,10}, which was not seen in our case.

Lichenoid and granulomatous dermatitis is an uncommon and new entity of interface dermatitis which may be associated with various systemic disorders such as autoimmune thyroiditis or

rheumatoid arthritis. Management of the underlying disease can control cutaneous lesions.

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