Colocalization of linear lichen planus and psoriasis vulgaris

Sir,

Lichen planus (LP) is an autoimmune dermatosis, involving either or all of skin, mucosa, nail, and hairs. It has various clinical presentations such as classical LP, hypertrophic LP, lichen planus pigmentosus, and linear LP (LLP). Psoriasis is also a common autoimmune dermatosis. Various clinical presentations include plaque type, guttate, follicular, linear, and pustular. Coexistence of psoriasis and LP, although common, has been reported rarely.

Here, we report a case of LLP developing in a case of psoriasis with overlapping of lesions—an association never reported before.

A 26-year-old otherwise healthy unmarried female, known case of psoriasis since 3 years presented with linear violaceous, rough, pruritic plaque on left lower limb since one-and-a-half year overlapping on previous psoriasis lesions. There was no history of any preceding trauma, any recent drug intake, dental metal fillings, hepatitis, or any other infection and joint pains. The patient denied a family history of similar lesions. She was treated with methotrexate (TCD-400 mg) for psoriasis but denied history of any biologics use in past. There was no history of any other autoimmune conditions such as vitiligo or autoimmune thyroiditis. Clinical examination revealed multiple erythematous scaly plaques with silvery white scales, all over the body except face, palms, and soles. A linear violaceous, keratotic plaque was seen on left lower limb extending from middle of leg to great toe along the medial side of foot [Figure 1].

Auspitz’s sign was positive on erythematous scaly plaques of psoriasis and linear plaque showed Wickham’s striae at some places. All the lesions were nontender. Mucous membranes were normal. Nail examination was normal.

Based on history and clinical examination, differential diagnoses of psoriasis vulgaris with linear LP, psoriasis vulgaris with lichen striatus, and psoriasis vulgaris with linear lichenified psoriasis were considered.

Complete blood count, liver function tests, and renal function tests were normal. Tests for hepatitis C virus and human immunodeficiency virus were negative. Thyroid function was also normal.

With informed consent, two biopsies were taken. One from the linear plaque and second from an erythematous scaly plaque.

Biopsy from the linear lichenoid plaque showed compact orthohyperkeratosis, focal hypergranulosis, acanthosis, saw-tooth appearance of epidermis, band-like infiltrate in upper dermis, interface change with Max–Joseph space, lymphocytic infiltrate, colloid bodies, and
melanin incontinence were seen suggestive of lichen planus [Figure 2].

Biopsy from the erythematous scaly plaque showed hyperkeratosis, parakeratosis, neutrophilic collections in stratum corneum, acanthosis, papillomatosis, clubbed rete-ridges, dilated capillaries in upper dermis, and inflammatory infiltrate. On further magnification, crowded basal layer, papillomatosis, dilated capillaries, lymphocytic infiltrate, and extravasated RBCs were seen, changes suggestive of psoriasis vulgaris [Figure 3].

Based on history, clinical findings, and histopathology, a final diagnosis of psoriasis vulgaris with LLP was made.

LLP, also referred to as Blaschkoid LP, is a rare type of lichen planus characterized by a linear distribution of lichenoid lesions along the lines of Blaschko, which are embryonic pathways of skin development. It accounts for less than 0.5% of patients with LP.

Etiology of LLP is unknown; however, cases associated with metastatic carcinoma, HIV, hepatitis C infection, and dental fillings have been reported. It is thought that LLP arises due to an abnormal keratinocyte clone that is only unmasked after the initiating event for lichen planus. Cytokine imbalance, for example, excess production of IFN-α and T-cell-mediated autoimmunity as proven by leukocyte migration-inhibition assays are known to occur in both the conditions. Although our patient had no identifiable trigger such as virus or drug, some antigenic stimuli may have triggered IFN-α production. It is speculated that activation of both CD4+ and CD8+ T cells may be responsible in such cases of coexistence.

Coexistence of LP and psoriasis has been reported rarely but is not very uncommon. Poljacki et al. found 5 LP cases in 1743 psoriasis patients, whereas Ohshima et al. found 12 psoriasis cases in 711 LP patients. Inalöz et al. reported a case of bullous LP arising in the skin graft donor site of a psoriatic patient. McGimpsey and O’Brien reported oral lichen planus with psoriasis. Ujiie et al. have reported development of lichen planus and psoriasis on lesions of vitiligo vulgaris—further suggesting role of autoimmunity in causation.

Upon searching the literature, we could find only one case of LLP coexisting with psoriasis. However, there was no overlap of lesions as seen in our case.

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Figure 2: Biopsy-1 from lichenoid plaque showed compact orthohyperkeratosis, focal hypergranulosis, acanthosis, saw-toothing, band-like infiltrate in upper dermis (H and E, 100X)

Figure 3: Biopsy-2 from erythematous scaly plaque showed parakeratosis, neutrophilic collections in stratum corneum, acanthosis, papillomatosis, clubbed rete-ridges, dilated capillaries in upper dermis, and inflammatory infiltrate (H and E, 40X)
Letters to the Editor

Conflicts of interest
There are no conflicts of interest.

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REFERENCES

1. Gutte R, Khopkar U. Predominant palmoplantar lichen planus: A diagnostic challenge. Indian J Dermatol 2014;59:343-7.
2. Pavitran K, Karunakaram M, Palit A, Raghunatha S. On disorders of keratinisation. In: Valia RG, Valia AR, editors. IADVL Textbook of Dermatology. 3rd ed. Mumbai, India: Bhalani Publishers; 2008. p. 995-1069.
3. Gutte RM. Unilateral acrosyringeal lichen planus of palm. Indian Dermatol Online J 2013;4:350-2.
4. Ohshima N, Shirai A, Asahina A. Coexistence of linear lichen planus and psoriasis in a single patient. J Dermatol 2011;38:1182-4.
5. Michalska-Bankowska A, Skrypek-Salamon A, Lis-Swiety A. Linear lichen planus along the lines of Blaschko in three adult women: Gene-environment interactions. Clin Dysmorphol 2015;24:166-9.
6. Shiohara T, Hayakawa J, Nagashima M. Psoriasis and lichen planus: Coexistence in a single patient. Are both diseases mutually exclusive? Dermatologica 1989;179:178-82.
7. Ruiz Villaverde R, Blasco Melguizo J, Naranjo Sintes R, Serrano Ortega S, Dulanto Campos MC. Multiple linear lichen planus in HIV patient. J Eur Acad Dermatol Venereol 2002;16:412-4.
8. Sasaki G, Yokozeki H, Katayama I, Nishioka K. Three cases of linear lichen planus caused by dental metal compounds. J Dermatol 1996;23:890-2.
9. Inalöz HS, Patel G, Holt PJ. Bullous lichen planus arising in the skin graft donor site of a psoriatic patient. J Dermatol 2001;28:43-6.
10. McGimpsey JG, O’Brien FV. Oral lichen planus associated with psoriasis of the skin. Br Dent J 1974;136:53-7.

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