

Herpes Labialis-Induced Erythema Multiforme along Blaschko's Lines

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Dear Editor:

Erythema multiforme (EM), first described by Von Hebra in 1862, is an acute, self-limiting mucocutaneous condition induced by some immune reaction to infections or pharmacologic antigens¹. The distribution of EM along Blaschko's lines (BL) is extremely unusual.

A 28-year-old, non-consanguineous Hindu male patient presented with an asymptomatic linear lesion of 3 days' duration along with multiple vesicular eruptions over the right side of his upper lip for 5 days. The lesion consisted of multiple erythematous annular eruptions. He had a history of recurrent vesicular eruptions on the lip during the last 5 years. There was no other systemic illness or history of similar skin rash. Physical examination revealed the presence of multiple, discrete, small target-like lesions, most having a central dark spot, on the right forearm along BL. Some lesions were confluent, forming a bigger and irregularly shaped lesion. A group of tiny vesicular eruptions were present on the upper lip (Fig. 1A, B).

It was diagnosed clinically as EM along BL with recurrent herpes labialis.

Routine tests of blood, urine, and stool samples showed no abnormality. Biopsy and histopathological examination from a lesion on forearm revealed exocytosis, extensive interface dermatitis, necrotic keratinocytes, dermal edema, and mononuclear cell infiltration in the upper dermis (Fig. 1C).

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Proposed mechanisms of EM include type IV hypersensitivity immune response mediated by T lymphocytes², genetics and infections. The most possible etiologic factor is herpes simplex virus. Infection due to *Mycoplasma pneumoniae*, vulvovaginal candidiasis, hepatitis C virus; drugs like acetaminophen, penicillin, and sulfonamides; and diseases like systemic lupus erythematosus (SLE), small vessel vasculitis, urticaria, and granuloma annulare are also implicated. The lesions of EM usually start in a symmetric fashion over the acral areas and extensor surfaces of the limbs, and progress centripetally. Koebnerization may influence the distribution.

BL are known to represent "mosaicism"³. Besides nevi, autosomal and X-linked dominant diseases; polygenic diseases such as lichen planus, psoriasis, eczema, SLE, pemphigus vulgaris, granuloma annulare, linear drug eruption, and graft-versus-host disease may also be distributed along BL. In polygenic diseases, distribution along BL as an isolated manifestation or as a superimposed manifestation on classic generalized disease may occur owing to postzygotic mutation involving one of the predisposing genes. This is also known as "loss of heterozygosity" (LOH), which gives rise to a patch of homozygous or hemizygous tissue. The possible mechanisms for the development of LOH are mitotic recombination, gene conversion, point mutation, deletion, or mitotic nondisjunction.

Blaschko-linear EM is extremely rare and has been described in only two cases (Table 1)^{4,5}. None of these previous cases involved active herpes labialis at the time of presentation. One of them, however, involved a history of recurrent herpes labialis⁵. The case reported by Micalizzi and Farris⁵ was linear; however, morphological assessment of the lesions was difficult with the clinical photograph provided. Our case possibly is the first case of EM associated with active herpes labialis and with a distribution along BL. This case provides strong evidence in support of a genetic mechanism in the



Fig. 1. Erythema multiforme on the right forearm along Blaschko's line. Insets: (A) grouped vesicles with crusting due to herpes labialis on the upper lip, (B) close-up of the target lesions. (C) Low-power view (H&E, $\times 100$) showing an intact epidermis with widespread basal cell liquefaction and upper dermal infiltrates. Inset: higher-magnification ($\times 400$) image showing gross vesicular degeneration of the basal layer, necrotic keratinocytes, upper dermal edema, and mononuclear cell infiltration.

Table 1. Comparing all published cases of linear erythema multiforme^{4,5}

Clinico-demographic profile	Jantzen (1955) ⁴	Micalizzi and Farris (2000) ⁵	Current case
Age (y)	28	20	28
Sex	Female	Female	Male
Site	Right upper limb (from hand till arm over deltoid)	Right side of trunk, right upper limb	Right forearm and hand
History of similar skin lesions in the past (recurrence)	Yes. However, none of the previous ones were in linear pattern	None	None
Presence of active herpes labialis this time	No	No	Yes
Past history of recurrent herpes labialis	No	Yes	Yes
Pattern	Authors described it as cockarde-like efflorescence in a linear form not exactly following either Voigt line or Blaschko's line	Along Blaschko's line	Along Blaschko's line

pathogenesis of EM.

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