Eruptive Lentiginosis in a Young Healthy Woman—Revisiting Causal Associations

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Abstract

Lentigines are hyperpigmented macules, which represent the simplest form of increased melanocytic proliferation. The term "lentiginosis" is applied for the presence of lentigines in an exceptionally large number or in a distinctive configuration. Lentigines evolve slowly, but widespread occurrence over a short period of time is typical of eruptive lentiginosis. We report an unusual case of eruptive lentiginosis in a female patient with no prior systemic disorder or familial pattern, presenting with widespread hyperpigmented macules, symmetrically distributed over the face, neck, upper trunk, shoulders, and both arms and forearms. Clinicohistopathological features were consistent with eruptive lentiginosis. Our case report seems interesting as well as a rare one as it involved an otherwise healthy young woman.

Keywords: Eruptive lentiginosis, hyperpigmented macules, lentigines

Introduction

Lentigines are benign pigmented macules, which are characterized by an increased number of melanocytes, while the term lentiginosis is applied when lentigines are present in relatively large numbers or in a distinctive distribution.[1] Generalized distribution of lentigines has been reported in association with various multisystem disorders of developmental defects. On the other hand, an occurrence without associated systemic manifestations or developmental anomalies, termed as "generalized lentiginosis," has increasingly been reported.[2-4] Lentigines evolve slowly, but widespread occurrence over the short period of time from months to years is typical of eruptive lentiginosis.[1] Eruptive lentiginosis has been linked to various immunosuppressant and immune modulator drugs with the possible hypothesis of altered immune surveillance,[5] as well as drug-induced proliferation of melanocytes in predisposed individuals.[6] We present an unusual case of eruptive lentiginosis in a young woman with no prior systemic disorder or similar familial pattern.

Case History

A 29-year-old woman presented to the outpatient department with widespread hyperpigmented macules located over apparently normal skin of the face, neck, and upper trunk that started 1 year back and progressed rapidly. The patient was housewife and denied having any adverse pregnancy outcome. There was no history of photosensitivity or relatively longer period spent on sunlight, phototherapy, adverse cutaneous drug reactions, or any autoimmune cutaneous or extracutaneous disorders. The patient also revealed noticeable change in the appearance of new lesions after the outbreak of lentigines. During the outbreak of lentigines, macular lesions were initially light brown in color and more scattered, whereas new lesions after outbreak were dark brown and dense. There was no history of similar macules or any atypical melanocytic nevi among family members.

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Submission: 29-10-2022 **Revision:** 25-11-2022
Acceptance: 09-12-2022 **Web Publication:** 15-03-2023

Access this article online

Quick Response Code:

Website: www.tjdonline.org

DOI: 10.4103/tjd.tjd_123_22

How to cite this article: Phadnis P, Rathoriya SG, Singhal R, Choudhary V. Eruptive lentiginosis in a young healthy woman—Revisiting causal associations. Turk J Dermatol 2023;17:28-31.

On examination, numerous light-to-dark brown dense macular lesions of size approximately 1–4 mm present symmetrically over the face, neck, upper trunk, shoulders, both arms and forearms sparing palms and soles, axilla, genitals, and mucous membranes [Figure 1]. Her general and systemic examinations revealed no abnormality. Her routine laboratory investigations, serology, chest x-ray, as well as neurological and hormonal evaluation were all normal. The patient could not undergo genetic analysis because of limited resources.

After complete clinical evaluation, histopathological examination of skin biopsy taken from one larger macule of the left arm showed elongation of rete ridges and relatively increased number of melanocytes at rete ridges with normal distribution of melanocytes in intervening epidermis along with basal layer hyperpigmentation [Figure 2]. Nests of melanocytes, typically found in nevus, were not present in papillary dermis. Clinicohistopathological features were consistent with eruptive lentiginosis. Presently, the patient is on regular follow-up with series of clinical assessment to detect any significant change in numbers or size of macules or newly developed lesions.

Discussion

Lentigines are benign pigmented lesions, commonly start at younger age and are characterized clinically by small-sized multiple brown-to-black macules with well-demarcated edges and histologically by the proliferation of melanocytes in basal cell layers. Multiple lentigines

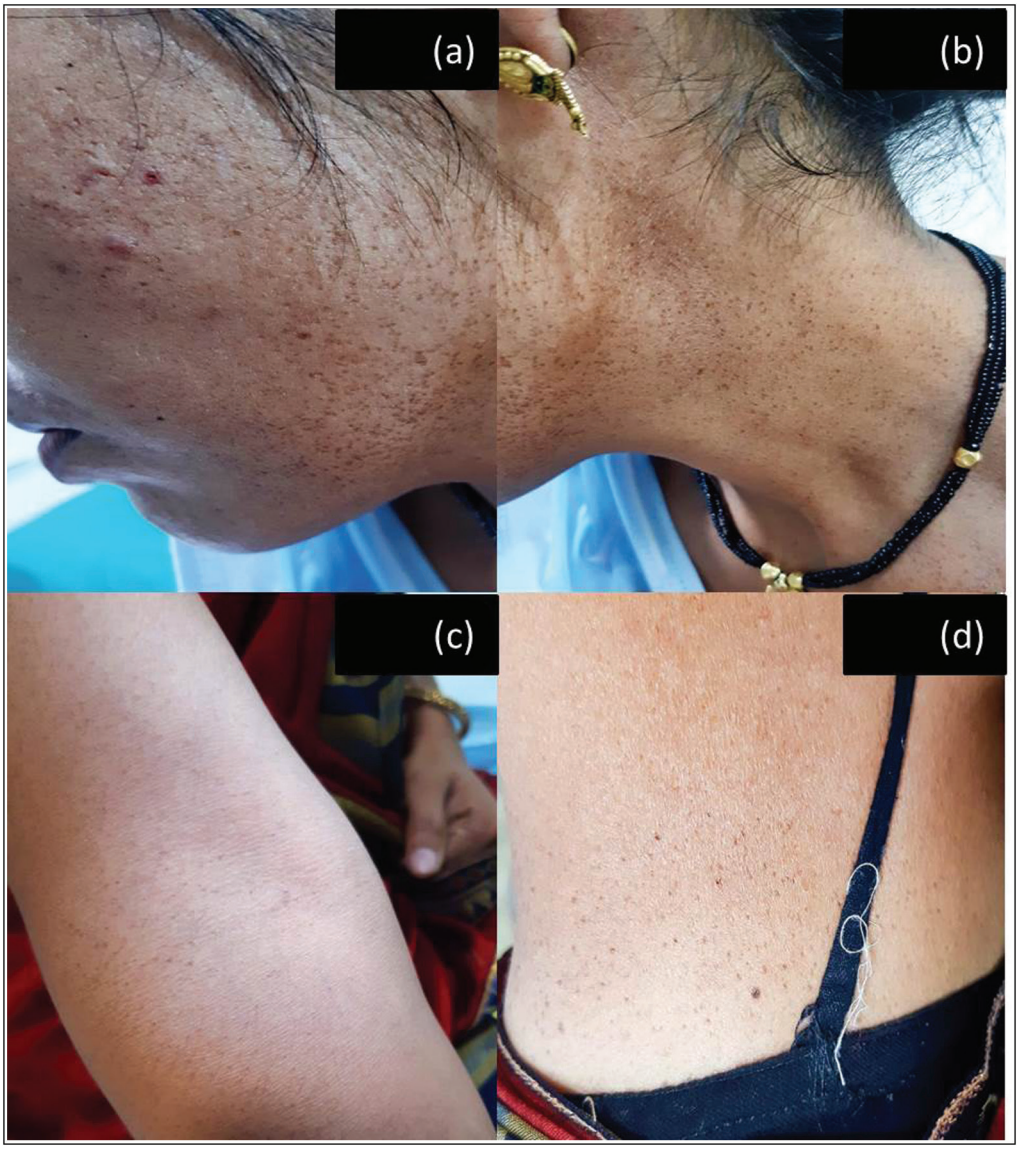

Figure 1: Multiple light-to-dark brown dense macular lesions of size approximately 1–4 mm present symmetrically over (a) the left side of the face, (b) the left side of the neck, (c) arms and forearms, and (d) back

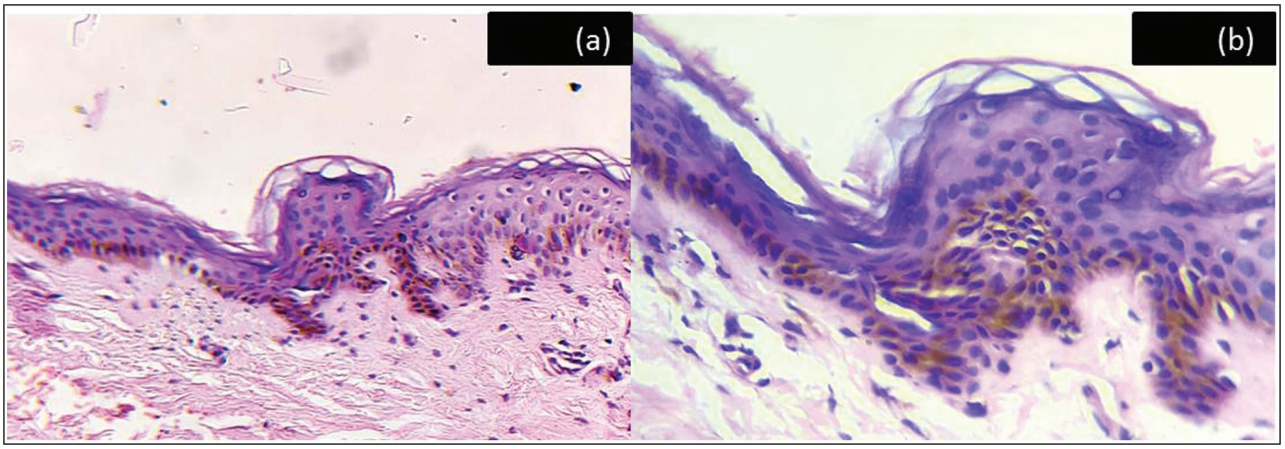

Figure 2: Elongated rete ridges with increased melanocytes and lower epidermis hyperpigmentation: (a) H&E, X100; (b) H&E, X400

may occur as an isolated phenomenon or a part of more complex multisystem disorders namely Noonan syndrome, lentigines, atrial myxoma, and blue nevi syndrome and nevi, atrial myxoma, myxoid neurofibromas, and ephelides syndrome (Carney complex), and Peutz-Jeghers syndrome with relatively early onset of lentigines in these syndromes. The term eruptive lentiginosis, i.e., abrupt onset of lentigines without systemic abnormality, was suggested by Sanderson in 1960 who reported the outbreak of pigmented macular lesions after an episode of measles.[7]

Although eruptive melanocytic nevi may look clinically indistinguishable from eruptive lentiginosis possibly because of extended manifestations of melanocytic proliferation with some continuity,[2] yet the presence of peripheral brown globules on dermoscopy[8] and melanocytic proliferation at dermoepidermal junction and nests of melanocytes in the papillary dermis on histopathology in the former may differentiate it from lentiginosis to a remarkable extent.

Solar radiations and phototherapy are established causes of lentiginosis, as well as cases of eruptive lentiginosis in regressing psoriasis (ELRP) are growing evident.[9] Also, there are limited cases of eruptive lentiginosis reported in the literature, following chemotherapy,[10] azathioprine,[11] and topical immunotherapy.[12]

Most of the previous reported cases of eruptive lentiginosis were either associated with immunosuppressant therapy, topical immunotherapy, or a part of familial eruptive lentiginosis except a case of generalized eruptive lentiginosis in a healthy elderly man reported by Kim *et al.*,[2] but our case seems distinctive in a view that it involved otherwise healthy young woman, a case similar to which has not yet been reported elsewhere to the best of our knowledge [Table 1].

The pathogenesis of eruptive lentiginosis is not clearly understood, but it has been suggested as an exaggerated recovery in pigment production.[9] Surprisingly, we did not find any compensated hyperpigmentary pattern in our case, rather abrupt onset was observed without prior noticeable illness or therapy. Certain mutations in signaling proteins may also predispose patients to initiation and further spread of lentigines as immune modulation will be greater in these individuals.[13] Further, following immunosuppressant therapies, the facilitation of uncontrolled proliferation of melanocytes in genetically predisposed patients has also been suggested.[6] Present case, to our belief, could be the very first sporadic case in family with subsequent contingency in lineage, yet the possibility of unassociated incident cannot be completely ruled out. However, the pathogenesis of familial eruptive lentiginosis without systemic involvement or malignancy and genetic predisposition in the family members is yet to be explicated.[14]

In summary, we hypothesize that the occurrence of our isolated case of eruptive lentiginosis could be due to following probable mechanism:

(a) A part of familial eruptive lentiginosis with possibilities of impending occurrence in subsequent generations[14]
(b) Abrupt reaction pattern of melanocyte proliferation by cytokine surge because of the past unreported brief illness.[15]

These assumptions are a matter of elucidation, and considering the increasingly evident similar cases, further evaluations to help us arrive at final conclusion is the need of an hour.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Table 1: Comparison of the present case with previous case reports

Feature	Our study	Micieli and Alavi (2018)	De *et al.* (2010)	Na *et al.* (2006)
Age (years)	29	29	35	40
Gender	Female	Female	Female	Female
Etiology/ associations	Not known	ELRP after secukinumab	CHOP therapy for non-Hodgkin's lymphoma	Familial
Pathogenesis	A part of familial eruptive lentiginosis, melanocytic proliferation by cytokine surge	Increased number of melanocytes combined with rapid recovery of pigment production in resolving psoriatic plaques, immune modulation, and mutation in signaling proteins	Diminished immune surveillance, immunosuppression-induced melanocytic proliferation, drug-induced	Genetic predisposition, common exposure to in fectious agents, or chemical materials in a family
Family history	Nil	Nil	Nil	Present (similar lesions in daughter)
Distribution	Widespread, sparing lower trunk, lower limbs, palms, soles, and mucosa	On upper extremities and trunk	All four limbs sparing palms, soles, and mucosae	Face, trunk, and extremities sparing palms, soles, and mucosa
Onset	Abrupt	Abrupt	Abrupt	Abrupt
Associated systemic involvement	Nil	Nil	Nil	Nil

CHOP: cyclophosphamide, doxorubicin, vincristine, and prednisone.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References
1. De Berker DAR, Baran R, Dawber RPR. Acquired pigmentary disorders. In: Burn T, Breathnach S, Cox N, Griffiths C, editors. Rook's Textbook of Dermatology. 9th ed. Vol. 4. Oxford: Blackwell; 2016. p. 88.16-7.
2. Kim MS, Youn SH, Na CH, Kim JK, Shin BS. Generalized eruptive lentiginosis in a healthy elderly man. Ann Dermatol 2014;26:649-50.
3. Zanardo L, Stolz W, Schmitz G, Kaminsk W, Landthaler M, Vogt T. Progressive hyperpigmentation in generalized lentiginosis without systemic symptoms: A rare hereditary pigmentation disorder in south-east Germany. Acta Derm Venereol 2004;84:57-60.
4. Uhle P, Norvell SS Jr. Generalized lentiginosis. J Am Acad Dermatol 1988;18:444-7.
5. Woodhouse J, Maytin EV. Eruptive nevi of the palms and soles. J Am Acad Dermatol 2005;52:S96-100.
6. Zattra E, Fortina AB, Bordignon M, Piaserico S, Alaibac M. Immunosuppression and melanocyte proliferation. Melanoma Res 2009;19:63-8.
7. Sanderson KV. Eruptive telangiectatic cellular naevi. Br J Dermatol 1960;72:302-8.
8. Alaibac M, Piaserico S, Rossi CR, Foletto M, Zacchello G, Carli P, *et al*. Eruptive melanocytic nevi in patients with renal allografts: Report of 10 cases with dermoscopic findings. J Am Acad Dermatol 2003;49:1020-2.
9. Garcia-Souto F. Eruptive lentiginosis confined to regressing psoriatic plaques after adalimumab treatment. An Bras Deramtol 2021;96:113-4.
10. De D, Dogra S, Kanwar AJ, Saikia UN. Generalized eruptive lentiginosis induced by chemotherapy. Clin Exp Dermatol 2010;35:e113-5.
11. Ramos-Rodríguez C, Murillo-Lázaro C, Mendoza-Chaparro C. "Eruptive lentiginosis" in a patient with vitiligo and inflammatory bowel disease treated with azathioprine. Am J Dermatopathol 2016;38:135-7.
12. Tosti A, Piraccini BM, Misciali C, Vincenzi C. Lentiginous eruption due to topical immunotherapy. Arch Dermatol 2003;139:544-5.
13. Micieli R, Alavi A. Eruptive lentiginosis in resolving psoriatic plaques. JAAD Case Rep 2018;4:322-6.
14. Na JI, Park KC, Youn SW. Familial eruptive lentiginosis. J Am Acad Dermatol 2006;55:S38-40.
15. Sfecci A, Khemis A, Lacour JP, Montaudié H, Passeron T. Appearance of lentigines in psoriasis patients treated with apremilast. J Am Acad Dermatol 2016;75:1251-2.