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LETTER TO THE EDITOR

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Late-onset Langerhans cell histiocytosis without extracutaneous involvement

Dear Editor,

Langerhans cell histiocytosis (LCH) is a rare disease encompassing a spectrum of disorders with the proliferation of pathologic Langerhans cells.[1] LCH mainly affects children under 15 years old.[1] It may simultaneously involve several tissues, including bones, lungs, skin, oral and genital mucosa, and endocrine glands.[2] Although the skin is the second most commonly affected organ after the bones, LCH confined to the skin is rare in adult-onset LCH. A survey of 314 LCH patients at the Mayo Clinic showed 82% of LCH patients with skin lesions to have coexisting LCH lesions in other organs.[1] Cutaneous manifestations may occur as erythematous papular rash on the groin, abdomen, chest, or back.[2] Here, we describe a late-onset LCH patient without extracutaneous involvement.

An 85-year-old man presented with purpura and blisters on the chest, shoulders, and upper arms, which had regressed and reoccurred repeatedly. His past history included gastric cancer at 62 years of age and cholangiocarcinoma at 82 years of age. He had been on hemodialysis for 8 months due to nephrosclerosis. Physical examination revealed purpura, blisters, and erosions of about 5-20 mm in diameter, with pruritus on the chest, shoulders, and upper arms (Figure 1A,B). No mucous membrane involvement was noted. Differential diagnoses included LCH, autoimmune blistering diseases, and mucinosis. A skin biopsy from around a blister showed the infiltration of large mononuclear cells in the epidermis and of lymphocytes and eosinophils in the superficial dermis (Figure 1C,D). The mononuclear cells had kidney-shaped nuclei and expressed CD1a and langerin (Figure 1E-G). Examinations including complete blood count, whole-body computed tomography, abdominal ultrasound, and electrocardiogram showed no abnormalities, except for moderately elevated serum soluble interleukin-2 receptors (1210 U/mL; normal range: <466 U/mL). The diagnosis of LCH was confirmed by clinical manifestations, histopathological features, and immunohistochemical findings. Real-time PCR found no somatic V600E mutations in *BRAF*. The eruptions improved gradually with topical steroid and zinc oxide ointment.

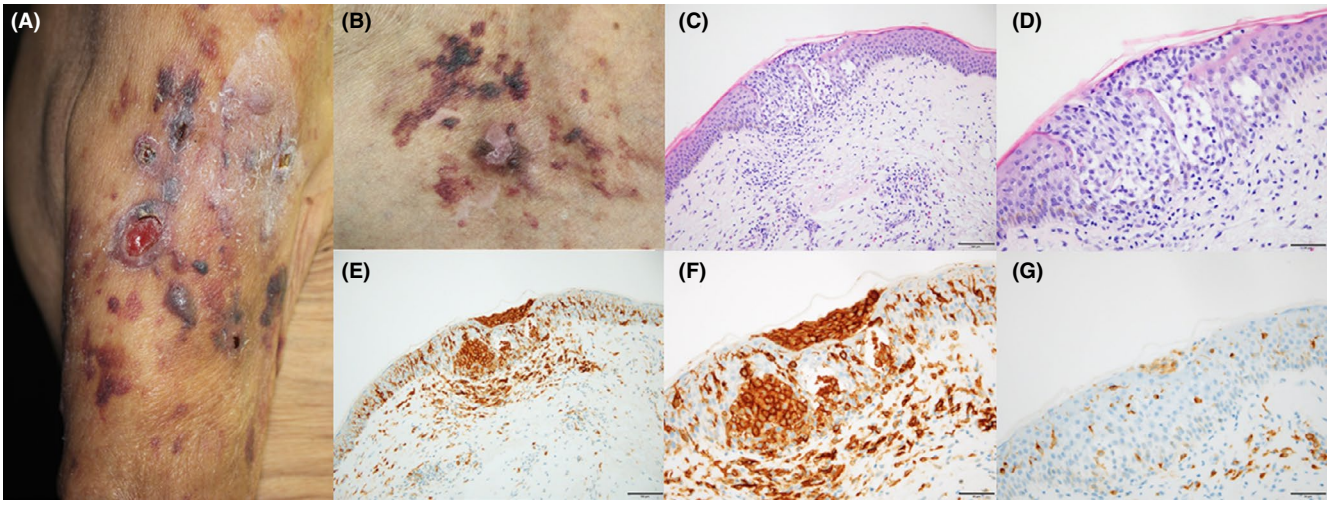

FIGURE 1 Clinical and histopathological features of the patient with Langerhans cell histiocytosis. A, Purpura, blisters, and erosions on the right upper arm. B, Confluent purpura on the chest. C and D, Infiltration of a few large mononuclear cells in the epidermis and moderate infiltration of lymphocytes and eosinophils in the superficial dermis (hematoxylin and eosin). E-G, Infiltrating mononuclear cells are positive for CD1a (E, F) and langerin (G). Scale bars = 50 μm (D, F, G) and 100 μm (C, E)

The present case is an extremely late-onset LCH without extracutaneous involvement. The diagnosis of LCH was confirmed by histopathological and immunohistochemical findings. We consider that immunolabeling for corresponding molecules is useful for definitively diagnosing LCH, especially in atypical cases such as the present case of a patient in his 80s without extracutaneous symptoms. The patient showed moderately elevated serum soluble interleukin-2 receptors. Serum soluble interleukin-2 receptor levels were reported to have prognostic value for pediatric LCH.[3] The *BRAF* V600E mutation was absent in our case. It was reported that more than 50% of patients with LCH have *BRAF* V600E mutations.[4] Although the *BRAF* mutation status is not considered to be associated with clinical features or prognosis, patients with *BRAF* mutations may benefit from BRAF inhibitors, such as vemurafenib.[4]

There has been substantial debate on whether LCH should be considered an immune disease or a neoplasm, and LCH is currently thought to be an inflammatory myeloid neoplasm.[5] The present case showing skin-restricted lesions without *BRAF* mutations might have had a more inflammatory nature than typical LCH cases do.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

Mai Iwata MD
Takuya Takeichi MD, PhD
Yoshinao Muro MD, PhD
Masashi Akiyama MD, PhD

Department of Dermatology, Nagoya University Graduate School of Medicine, Nagoya, Japan

Correspondence
Takuya Takeichi, Department of Dermatology, Nagoya University Graduate School of Medicine, 65 Tsurumai-cho, Showa-ku, Nagoya 466-8550, Japan.
Email: takeichi@med.nagoya-u.ac.jp

ORCID

Takuya Takeichi https://orcid.org/0000-0001-5958-2875
Yoshinao Muro https://orcid.org/0000-0003-2329-8375

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