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CORRESPONDENCE

A case of patch granuloma annulare with CD68-negative, CD163-positive M2 macrophages infiltration in an interstitial pattern

Patch granuloma annulare (GA), a rare type of GA, is marked by asymptomatic and nonspecific skin discoloration that progresses slowly.[1] Histopathologically, patch GA shows an interstitial pattern, whereas classic GA usually shows a palisading pattern, and both patterns are different in immunohistochemical findings.[2] Here, we report a case of patch granuloma annulare with CD68-negative, CD163-positive M2 macrophages infiltration in an interstitial pattern.

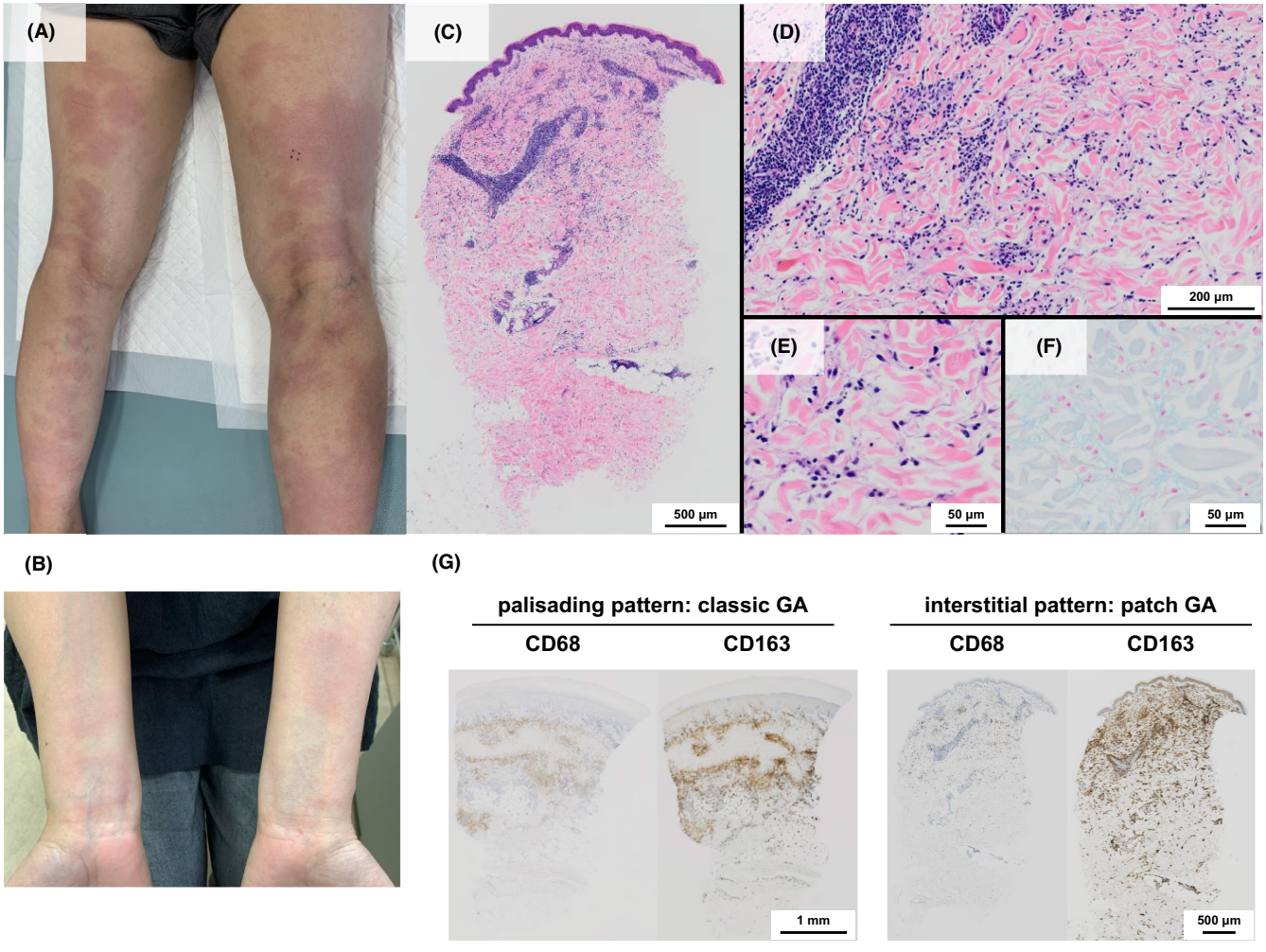

FIGURE 1 Patch granuloma annulare is a rare type of granuloma annulare. Histopathologically, patch granuloma annulare shows interstitial infiltration of histiocytes. In our case, immunohistochemical analyses demonstrated CD68-negative, CD163-positive M2 macrophages infiltration in an interstitial pattern

A 52-year-old Japanese woman presented with subtle, irritated erythematous-to-brown macules and patches that increased in size and number on the legs over one year. Physical examination showed well-demarcated and smooth macules, coalescing into large patches, which were distributed symmetrically and geographically on her extremities (Figure 1A,B). She had no chronic disease or medication use, and her laboratory tests were normal. Since topical corticosteroids and oral anti-allergic drugs had been ineffective, a skin biopsy was taken from her thigh. The histopathological result showed numerous histiocytes that infiltrated between interstitial collagen in the upper and middle dermis with some mucin deposition, which were particularly dense around vessels (Figure 1C–F). The characteristic skin lesions and pathological findings led to the diagnosis of patch granuloma annulare. The NB-UVB treatment was performed based on previous reports[3] and almost all lesions faded away after 31 sessions of the exposure (total cumulative dose 19.4 J/cm^2).

In our case, histopathological and immunohistochemical analyses demonstrated an interstitial pattern of GA with negative CD68 and positive CD163 staining (Figure 1G). GA can be divided into two main types according to histopathology: palisading and interstitial patterns. The former shows focal palisaded granulomatous inflammation, and the latter shows interstitial infiltration of histiocytes. Classic GA often shows a palisading pattern, but it sometimes shows an interstitial pattern; in this situation, it is difficult to reach a diagnosis because of the inconsistency between histopathological findings and the characteristic skin rash. The finding that CD68 and CD163 staining corresponds with histiocytes of the palisading granuloma in the palisading pattern of GA is useful. In the interstitial pattern, CD163 staining corresponds with the histiocytes of the stroma, but CD68 staining is absent.[2] CD68 is a pan-macrophage marker and CD163 is an M2 macrophage marker.[4] It has been reported that the M1/M2 macrophage ratio reflects inflammatory activity based on the observation that M1 macrophages are pro-inflammatory and M2 macrophages are anti-inflammatory.[5] These histopathological and immunohistochemical analyses may lead to the correct diagnosis and evaluation of clinical disease activity of GA. Patch GA is often asymptomatic or just mildly irritating and itchy, and the skin rash is inconspicuous and slowly enlarges. It often disappears spontaneously or in response to topical steroids, but it can also expand over a prolonged period, as was seen in the present case.[6–8] The reason for such a mild condition may be related to the large proportion of CD163-positive anti-inflammatory M2 macrophages.

In conclusion, patch GA is a rare form of GA characterized by a mild skin rash with an indolent course. Histopathological and immunohistochemical evaluation of the ratio of M1/M2 macrophages may contribute to understanding the disease activity.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DECLARATION SECTION

Approval of the research protocol: N/A.
Informed consent: N/A.
Registry and the Registration No. of the study/trial: N/A.
Animal studies: N/A.

Kenta Ikeda MD[1]
Kazuko Mizuno MD, PhD[2]
Osamu Yamasaki MD, PhD[1]
Shin Morizane MD, PhD[1]

[1]*Department of Dermatology, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Okayama, Japan*
[2]*Department of Dermatology, Kasaoka Daiichi Hospital, Okayama, Japan*

Correspondence
Kenta Ikeda, Department of Dermatology, National Hospital Organization Iwakuni Clinical Center, 1-1-1 Atago-cho, Iwakuni City, Yamaguchi 740-8510, Japan.
Email: pbhb4xbu@s.okayama-u.ac.jp

ORCID

Kenta Ikeda https://orcid.org/0000-0003-0154-5638
Osamu Yamasaki https://orcid.org/0000-0003-1595-933X
Shin Morizane https://orcid.org/0000-0003-1374-065X

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