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CORRESPONDENCE

Localized scleroderma secondary to mixed connective tissue disease during abatacept therapy

Dear Editor,

A 47-year-old woman developed joint pain in both arms 3 years ago. After 6 months, she presented with sausage-like swelling of fingers and Raynaud's symptoms; she was referred to a Rheumatology Department. In addition to joint pain and swelling as well as skin symptoms, her blood reports revealed the presence of antinuclear (1/2560; speckled pattern) and anti-U1 RNP (1/256 What is this value?) antibodies; other connecitve tissue disease (including rheumatoid arthritis [RA])-associated autoantibodies were not detected. She received prednisolone (10 mg/day), methotrexate (10 mg/week), and hydroxychloroquine (200 mg/400 mg; alternate day) for 9 months, which relieved the swelling of fingers but not the joint pain. Therefore, abatacept was added to the treatment regime. After 2 months, a skin lesion appeared on her back; she was then referred to our dermatology department. At the time of consultation, a 3-cm depression with atrophied surface was observed on her back (Figure 1A) in addition to slight swelling of the fingers and periungual erythema (Figure 1B). Histopathological findings of the depression on the back revealed atrophy of the epidermis, swelling, and uniformity of collagen fibers in the lower dermis, which were consistent with the symptoms of localized scleroderma (LS, Figure 1C,D). The patient was unwilling to receive treatment for the skin lesion and continued taking abatacept. After 3 months, a 1-cm lesion, consistent with LS symptoms, developed on her upper arm.

Mixed connective tissue disease (MCTD) is characterized by swollen fingers with high anti-U1 RNP antibody titers and overlapping features such as scleroderma, systemic lupus erythematosus, polymyositis/dermatomyositis, and RA.[1,2] In rare instances, MCTD is accompanied by LS.[1] Although the presence of LS with MCTD may be a coincidence, Yamane et al.[2] reported that anti-U1 RNP antibodies were detected in the serum of 70 patients with LS without MCTD, with a frequency of 2% of them producing anti-U1 RNP antibodies; this finding indicates the predisposition of these patients to the development of LS with collagen diseases such as MCTD. According to a recent report,[3] LS is induced as a paradoxical reaction or an adverse event (AE) during biological treatment against autoinflammatory diseases (Table S1).

Abatacept is a biological drug that inhibits CD28-mediated co-stimulation signals by binding to CD80/CD86 on the surface of antigen-presenting cells. It is mainly used for RA; however, some cases of paradoxical reaction have been reported.[4] The cutaneous AE due to abatacept is mainly psoriasis lesions; no LS has been reported (Table S1).[4] On the contrary, abatacept has been reported to be effective against LS because it inhibits matrix metalloproteinase.[5]

There are three possibilities for the LS development in our patient. (1) Accidental occurrence, (2) abatacept was ineffective in suppressing autoimmune reactions due to anti-U1 RNP antibodies in MCTD, and (3) LS might have appeared as a paradoxical reaction or an AE due to abatacept use (this seemed most likely in this case). We were unable to elucidate the exact mechanism of LS development in this case. Abatacept is commonly used to treat RA, but not MCTD, which suggests that our case was unique.

DECLARATION SECTION

Approval of the research protocol: N/A.

Informed Consent: The written informed consent was obtained from the patient.

Registry and the Registration No. of the study/trial: N/A.

Animal Studies: N/A

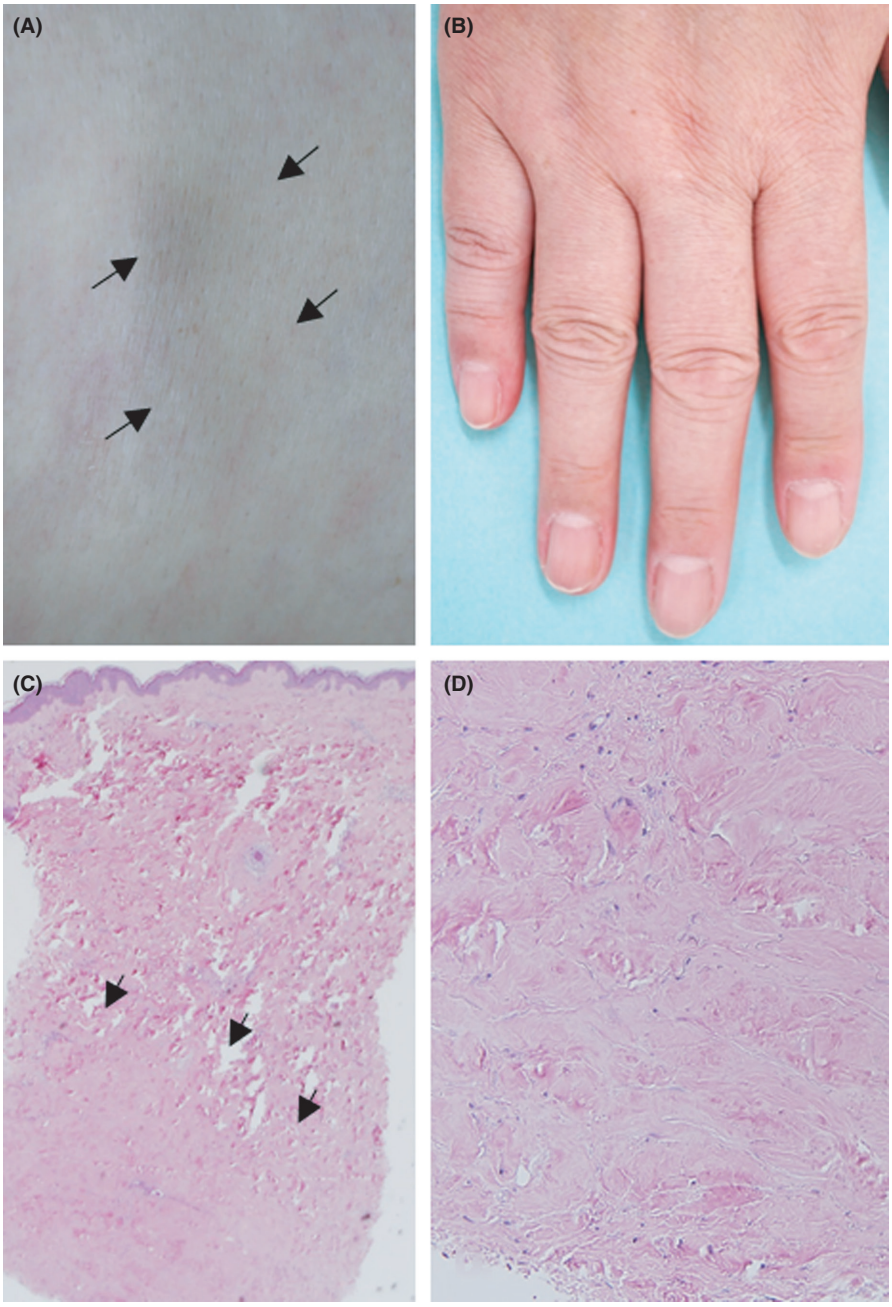

FIGURE 1 At the time of dermatology consultation, a slight depression of 3 cm was observed on the back (indicted by the arrows) without any subjective symptoms. Skin lesions with atrophied surface (A), slight swelling of fingers, and periungual erythema were observed (B). The histopathological findings of the eruption on the back revealed atrophy of the epidermis and swelling and uniformity of collagen fibers in the lower dermis (indicated by the arrows), consistent with morphea; hematoxylin and eosin staining; magnification, ×100 (C) and ×400 (D)

CONFLICT OF INTEREST

The authors declare no conflict of interest.

Sayuko Nagaoka MD
Shujiro Hayashi MD,PhD
Ken Igawa MD,PhD

Department of Dermatology, Dokkyo Medical University, Mibu, Japan

Correspondence
Shujiro Hayashi, Department of Dermatology, Dokkyo Medical University, 880 Kitakobayashi, Mibu, Tochigi 321-0293, Japan.
Email: shayashi@dokkyomed.ac.jp

ORCID

Shujiro Hayashi https://orcid.org/0000-0001-6558-4818

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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