

SHORT COMMUNICATION

Annular Erythema Associated with Sjögren's Syndrome Preceding Overlap Syndrome of Rheumatoid Arthritis and Polymyositis with Anti-PL-12 Autoantibodies

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Anti-PL-12 are among the anti-aminoacyl tRNA synthetase autoantibodies (1). Anti-PL-12 has been recently found in overlap syndrome of rheumatoid arthritis (RA) and polymyositis (PM)/dermatomyositis (DM), as well as in antisynthetase syndrome (2, 3). However, no skin manifestations preceding overlap syndrome with anti-PL-12 have been described.

CASE REPORT

A 44-year-old woman exhibited swelling with erythema on the bilateral upper eyelids. She was treated with prednisolone 20 mg/day at a different hospital. However, after the prednisolone was discontinued, the lesions relapsed. Four months after onset, the patient came to our clinic. A lip biopsy to investigate possible Sjögren's syndrome (SS) confirmed lymphocytic infiltration of the minor salivary glands. Circulating autoantibodies

to SS-A (anti-SS-A) were positive, but anti-SS-B antibodies were negative. She had no muscle weakness at any site of the body. Serum levels of creatinine kinase were not elevated. She was diagnosed with SS according to the Japanese Ministry of Health revised criteria for the diagnosis of SS (4). The lesions resolved with oral prednisolone 30 mg/day.

When the prednisolone dose was reduced to 22.5 mg/day, several lesions of annular erythema (AE) appeared on the lower back (Fig. 1A). A biopsy of the AE lesion showed sleeve-like perivascular and periappendigeal lymphocytic infiltration, which was consistent with AE with SS (AEES) (Fig. 1B, C). The lesions resolved with oral prednisolone 30 mg/day and azathioprine 50 mg/day.

Sixteen months after the onset of SS, arthralgia on the bilateral hip, knee, and ankle joints occurred. Oral prednisolone had been tapered to 10 mg/day, and oral azathioprine 50 mg/day had been maintained. Physical examinations found swelling of the bilateral knee and ankle joints. Circulating anti-CCP antibodies were 453 U/ml (normal value <15 U/ml). Serum levels of c-reactive protein and matrix metalloproteinase-3

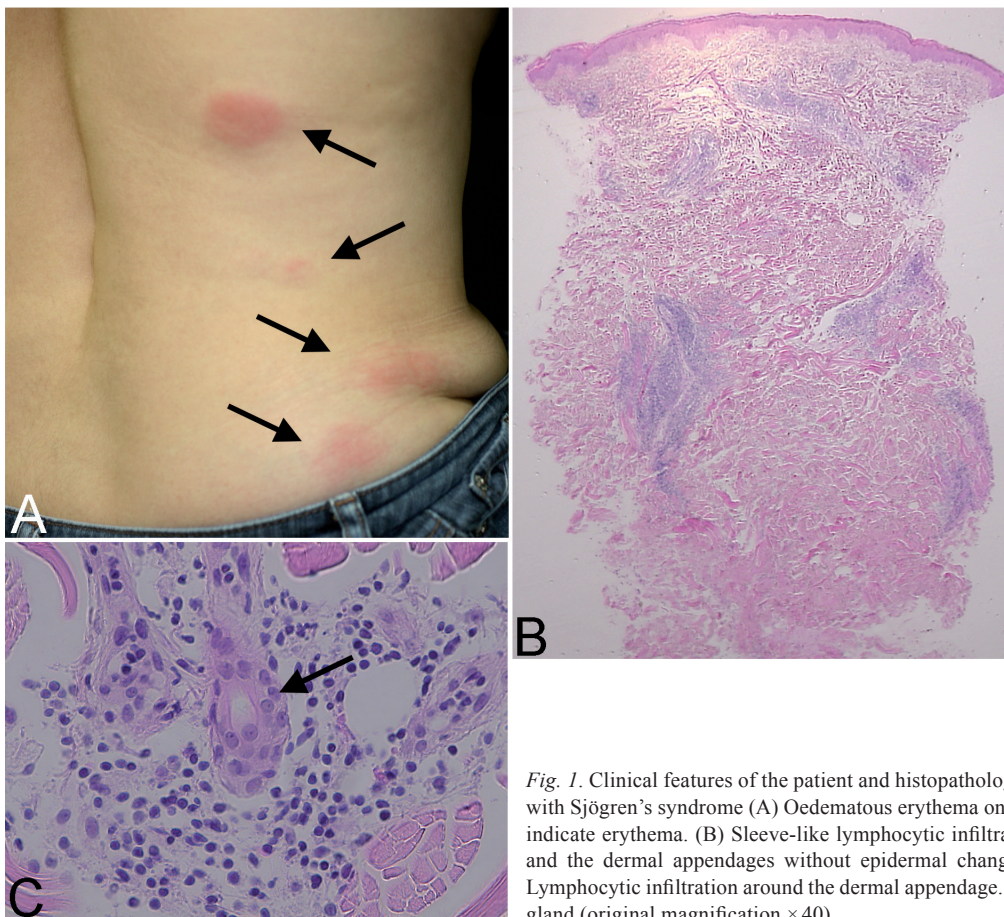


Fig. 1. Clinical features of the patient and histopathological features of the annular erythema with Sjögren's syndrome (A) Oedematous erythema on the lower back of the patient. Arrows indicate erythema. (B) Sleeve-like lymphocytic infiltrates are prominent around the vessels and the dermal appendages without epidermal changes (Original magnification $\times 2$). (C) Lymphocytic infiltration around the dermal appendage. The arrow indicates the eccrine sweat gland (original magnification $\times 40$).

were elevated. The arthritis continued for >6 weeks. From these clinical features, she was diagnosed with RA according to the 2010 American College of Rheumatology/European League Against Rheumatism classification criteria for RA (5). DAS28-ESR was 4.83 (moderate activity). In addition to oral prednisolone 7.5 mg/day and azathioprine 50 mg/day, salazosulfapyridine (SASP) 500 mg/day was started and, 7 months later, methotrexate 6 mg/week was substituted for the SASP. Thereafter, the RA disease activity was controlled. azathioprine was administered for a total of 28 months.

Thirty-one months after the onset of SS, she had symptoms of refractory cough and muscle weakness in the proximal limbs. She was admitted to our hospital. The serum level of myoglobin was 546 ng/ml (normal value <60 ng/ml), creatinine kinase was 683 IU/l (<163 IU/l), aldolase was 18.5 IU/l (<5.9 IU/l), and KL-6 was 917 U/ml (<500 U/ml). Interstitial lung disease (ILD) was identified by computer tomography. Myositis in the proximal limbs was suggested by magnetic resonance imaging. Circulating anti-PL-12 was positive by ELISA, using a system developed by us. The titre of anti-PL-12 of the patient was 830 units (normal value <4 units). She was diagnosed as having PM with ILD and was treated with systemic prednisolone 50 mg/day and tacrolimus 4 mg/day. The Bohan & Peter 1975 PM/DM Criteria was used for diagnosis of PM (6, 7). PM and ILD were improved. The patient had difficulty in raising her arms and going up stairs when the creatinine kinase was 683 IU/l. After the creatinine kinase fell within the normal range, she was gradually able to extend her arms and go up the stairs. The patient has been treated with prednisolone 10 mg/day and tacrolimus 3 mg/day. We have carefully tapered prednisolone and tacrolimus, because patients with anti-PL-12 sometimes experience worsening ILD and develop pulmonary hypertension (8). prednisolone was administered for a total of 51 months.

DISCUSSION

Three clinical types of AESS have been characterized: isolated doughnut-ring-like erythema mimicking Sweet's disease with an elevated border (type I), SCLE-like marginally scaled polycyclic erythema (type II), and papular insect bite-like erythema (type III) (9). The patient had type III. According to a review of 120 cases with AESS by Katayama et al. (9), AESS can be controlled in most patients with prednisolone 5–15 mg/day, but among the patients receiving > 20 mg/day of prednisolone there is a minor subset of recurrent AESS patients. The present case is categorised as the latter subset of AESS, because AESS occurred while prednisolone 22.5 mg/day was administered.

Bernacchi et al. (10) recently reported a patient with primary SS positive for anti-SS-A and anti-SS-B, who developed chronic relapsing PM and subacute cutaneous lupus erythematosus (SCLE). The present case and the previously reported case suggest a common spectrum of annular lesions of AESS and SCLE that can occur in patient with PM. When we reviewed the clinical course of the present patient, the differential diagnosis of skin manifestations of DM at the first visit could have been

considered for the swelling with erythema on the bilateral upper eyelids.

In conclusion, this is the first report of annular autoimmune lesions of SS with PM and also with anti-PL-12. When we see a patient whose AESS requires > 20 mg/day of prednisolone to manage, the differential diagnosis of overlap syndrome of RA and PM with anti-PL-12 should be considered.

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