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CASE REPORT

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Association of subacute cutaneous lupus erythematosus in a rheumatoid arthritis patient with Sjögren's syndrome

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Abstract In this paper, we report a case of rheumatoid arthritis (RA) with Sjögren's syndrome (SS) in which the patient developed subacute cutaneous lupus erythematosus (SCLE). A 72-year-old woman, who had a 10-year history of RA and SS, developed annular erythematosus skin lesions involving her face, neck, and extremities. Serological tests showed that anti-SS-A/Ro antibodies and anti-DNA antibodies were elevated. Histological examination of the skin lesions demonstrated the liquefaction degeneration of the epidermal basal layer and perivascular mononuclear cell infiltration. The diagnosis of SCLE was made based on the clinical features and skin histological findings. The disease was well controlled with intralesional and systemic corticosteroids and became quiescent. This case report demonstrates the concurrence of sero-positive RA, SS, and SCLE, which seems to be quite rare.

Key words Anti-SS-A/Ro antibody · Rheumatoid arthritis (RA) · Sjögren's syndrome (SS) · Subacute cutaneous lupus erythematosus (SCLE)

Introduction

Overlap between rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE) is rare. We recently examined and treated an elderly female patient with subacute cutaneous lupus erythematosus (SCLE) skin lesions, in association with classical RA and Sjögren's syndrome (SS). SCLE differs clinically from discoid lupus or systemic lupus erythematosus.[1] In this report, we describe the clinical and genetic features of this patient, which might represent a distinct subset of lupus.

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Case report

A 72-year-old woman with a 10-year history of RA and SS, resulting in severe joint deformities of the hands was being treated with oral administration of auranofin (6 mg/day) with controlled RA activity. In June 2000, she presented with an erythematous rash that started on her face and spread to involve her trunk, arms and legs. She had also recognized photosensitivity several months before. The lesions were characterized as annular red macules (Fig. 1). In addition to the skin lesions, the patient also experienced hair loss. There was no history of fever, oral ulcer, or Raynaud's phenomenon. The results of physical examination were unremarkable except for dry mouth, dry eyes, dermatosis, and the classical changes caused by RA, including deformities of the hands.

There was no leukopenia or thrombocytopenia in her peripheral blood. Results of serological tests showed positive for anti-nuclear antibodies (ANA) at a titer of 1:320 (Sp) and positive for rheumatoid factor (77.5 IU/ml). The level of antibodies to Ro (SS-A) was markedly elevated (>500 u/ml); however anti-La (SS-B) was not detected. Although anti-DNA antibodies were elevated (RIA 72 IU/ml), there was no hypocomplementemia (CH50 38.0 U/ml) and neither circulating immune complex nor anti-Sm antibodies were detected. Anti-neutrophil cytoplasmic antibodies, including antibodies to mycloperoxidase and proteinase-3, were negative. Human leukocyte antigen (HLA) typing revealed HLA-A24, B52, 54, Cw1, and DR-2, 4.

Joint X-ray showed the marked destruction of the carpus and metacarpophalangeal joints (Fig. 2A). Sialography indicated the destructive changes of intraglandular salivary ducts typical for advanced SS (Fig. 2B). Histological exami-

nation of a skin biopsy specimen revealed mild hyperkeratosis, liquefaction degeneration of the epidermal basal layer, and perivascular infiltration by lymphocytes (Fig. 3).

The patient fulfilled the American Rheumatism Association criteria for SLE on the basis of skin rash, photosensitivity, and the presence of anti-ANA and anti-DNA antibodies. A diagnosis of SCLE was made and the patient was treated with steroids. The skin lesions responded rapidly to intralesional topical corticosteroids and systemic corticosteroids (prednisolone, 20 mg/day). The elevated anti-DNA antibodies were also normalized by these treatments; however, the titer of anti-SS-A/Ro antibodies was not changed. The patient's condition was followed for 16 months after treatment, during which time there was no flare-up of SCLE with a low dose of corticosteroids (prednisolone, 5 mg/day).

Discussion

The patient described in this paper has classical RA, characterized by erosive and destructive joint changes, as well as SS. The patient fulfilled the American Rheumatism Association criteria for RA and the European community criteria for SS.[2] SCLE was suspected because of the characteristic annular erythema present on the face, upper trunk, and extremities. The diagnosis of SCLE was confirmed by histology of the skin lesions, which revealed the liquefaction degeneration of the epidermal basal cell layer with lymphocyte infiltration of the perivascular area. The skin lesions and serological abnormalities responded well to treatment with a minimal dose of corticosteroids.

SCLE represents a distinct subset of lupus erythematosus.[3] The skin lesions of SCLE are characterized by nonscarring papulosquamous or annular lesions occurring in photoexposed distribution.[4,5] In this case, differentiation of the skin lesions, which was thought to be SCLE, from annular erythema associated with SS is necessary. Annular erythema associated with SS seems to appear on the face and large centrifugum-like erythema eruptions that are less commonly involved appear on the extremities and may not respond to low-dose steroids.[6] These findings were not clear in our case. Furthermore, liguefaction degeneration, which was demonstrated in the histology of our case, may not be seen in annular erythema associated with SS.[6]

Patients with this specific form of skin lesion are characterized by mild systemic disease, the presence of antibodies to SS-A/Ro and the immunogenic marker HLA-DR3, and have a guarded prognosis without life-threatening complications.[7]

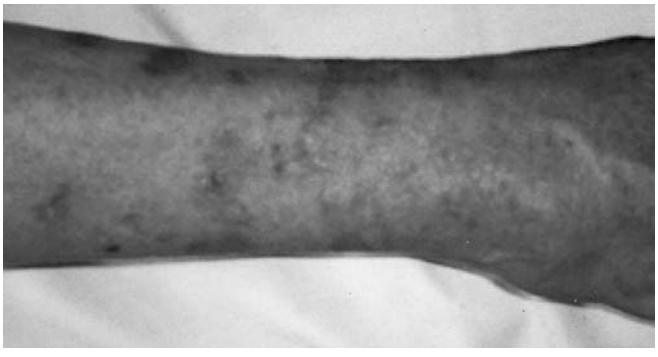

Fig. 1. Annular subacute cutaneous lupus erythematosus (SCLE) lesions on the arm in this case

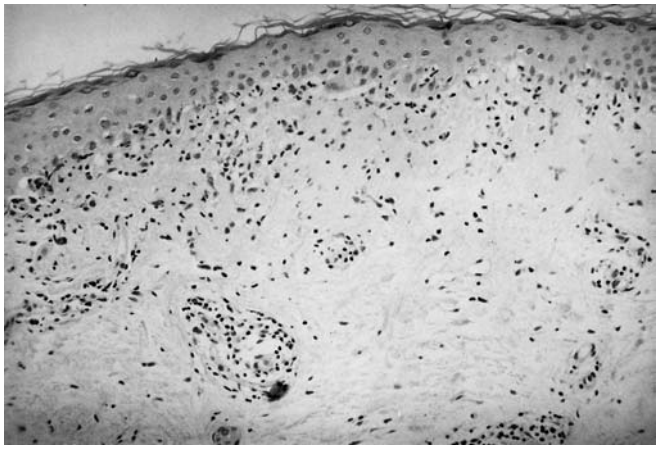

Fig. 3. Light microscopy of SCLE lesions showing a liquefaction degeneration of the epidermal basal layer and perivascular mononuclear infiltrate. Hematoxylin and eosin ×200

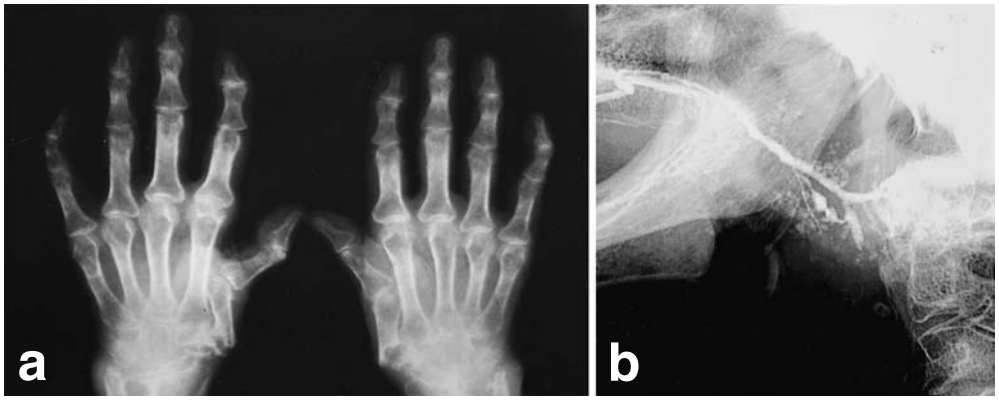

Fig. 2. **A** Bilateral hand radiography. Multiple erosions are noted at the metacarpophalangeal joints with a marked destruction of carpal bones. **B** Sialography. Destructive changes of intraglandular salivary ducts

The association between SCLE and RA or SS has been previously described.[8,9] It is reported that SCLE can precede or follow the development of other rheumatic diseases. Provost et al.[10] report five patients who have both SCLE and SS. Callen and Klen[11] state that 8% of 72 SCLE patients developed SS in their cohort study. It is still unclear how often RA or SS overlaps with SCLE. Sontheimer et al.[12] report that SCLE patients have a homogenous immunogenic phenotype of anti-SSA auto-antibody production on a background of human histocompatibility antigen (HLA)-DR3 tissue type. However, the association of SCLE and the presence of HLA-DR3 was not demonstrated in Japan, where the frequency of HLA-DR3 is quite low.[13] In our case, anti-SS-A/Ro antibodies were extremely elevated and this immunological abnormality may trigger SCLE. On the other hand, the HLA-DR phenotype of our case was DR2, 4. Callen and Klen[11] studied 72 patients with SCLE, and reported that HLA-DR3 was present only in 22 of 59 patients. Additionally, Watson et al.[14] analyzed the HLA phenotype of 31 SCLE patients and found an increase of HLA-DR2 (46%) as well as of HLA-DR3 (48%). Thus, in addition to HLA-DR3, other genetic factors may contribute to the predisposition to SCLE.

In summary, this case report demonstrates a concurrence of sero-positive RA, SS, and SCLE, which suggests that SCLE is a specific subcategory of lupus. It is considered that a positive test for anti-SS-A/Ro antibodies and the presence of SS could indicate a higher risk for the occurrence of SCLE. Further investigations are necessary to define the frequency and significance of this overlap.

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