EJR European Journal of Rheumatology

DOI: 10.5152/eurjrheum.2015.0073

Case Report

Erythema elevatum diutinum coexisting with ankylosing spondylitis

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Abstract

A 43-year-old woman presented to our hospital with the complaint of a reddish-purple rash on the extensor sides of her forearms. She had been diagnosed with ankylosing spondylitis 7 years ago. On physical examination, reddish-purple nodules were detected on the pretibial areas of both legs and extensor sides of both hands and forearms. Neutrophil, eosinophil, lymphocyte, and mixed-type leukocyte infiltration and erythrocyte extravasation were observed in skin biopsy. Erythema elevatum diutinum (EED) was diagnosed. For treatment, sulphasalazine, colchicine, and diclofenac were started. After 3 months of treatment, the lesions were healed. To the best of our knowledge, this is the first report of EED coexisting with ankylosing spondylitis.

Keywords: Ankylosing spondylitis, colchicine, erythema, leukocytoclastic vasculitis, sulphasalazine

Introduction

Erythema elevatum diutinum (EED) is a rare form of small vessel vasculitis that involves development of red-brown or violaceous papules and nodules over the dorsal hands or extensor surfaces of the extremities. Vasculitis is limited to the skin in patients with this disease. EED is a rare and chronic form of leukocytoclastic vasculitis (LCV) of unknown etiology (1). Previously, it was classified as a type of neutrophilic dermatosis; however, it was recently categorized as a form of LCV according to the histopathological changes. EED can occur at any age. Its incidence peaks between the third and sixth decades of life, with an equal sex ratio (2). The lesions of EED are usually asymptomatic, but pruritus, pain, and arthralgia of the involved joints have been reported. EED has been reported to be associated with neoplastic diseases, systemic autoimmune diseases, some infectious diseases, and some medications (3-5). Here we present the case of a patient with ankylosing spondylitis (AS) who was concomitantly diagnosed with EED.

Case Presentation

A 43-year-old woman presented to our hospital with the complaint of a reddish-purple, non-itching rash on the extensor side of both hands, forearms, and legs. She complained of pain in the low-back region, ankles, and knees and swelling in the knees and ankles. She had been diagnosed with ankylosing spondylitis according to the modified New York criteria 7 years ago. She was receiving no medication since 5 years because of quitting follow-up. On physical examination, reddish-purple nodules were detected on the extensor side of both hands and forearms (Figure 1). Her knees and ankles were tender and swollen. Schober test was 10±3 cm. Anteroposterior plain radiograph of the pelvis revealed stage 3 bilateral sacroiliitis. The laboratory findings were as follows: leukocyte counts: 16800 (4300-10300 mm^3), hemoglobin: 13 (13.6-17.2 g/dL), platelet: 259000 (156000-373000 mm^3), blood urea nitrogen: 7 (5-20) mg/dL, serum creatinine: 0.63 (0.6-1 mg/dL), serum albumin: 2.9 (3.5-5.5 g/dL), alanine transaminase: 27 (<31 U/L), aspartate transaminase: 26 (<31 U/L), ASO: 149 (0-200 IU/mL), immunoglobulin A: 263 (45-380 mg/dL), CRP: 24 (0-0.8 mg/dL), ESR: 70 (0-25 mm/h). Hepatitis B, hepatitis C, HIV, RF, ANA, anti-dsDNA, other anti-ENAs, anti-CCP, and ANCA were all negative. Magnetic resonance imaging of the sacroiliac joints revealed bilateral sacroiliitis and bone marrow edema.

Skin biopsy was performed. Neutrophil, eosinophil, lymphocyte and mixed-type leukocyte infiltration and erythrocyte extravasation were observed in the skin biopsy of the rash on the forearm (Figure 2a, b). Clinical and histopathological findings were in accordance with EED. Therefore, EED-associated diseases were investigated. Serum protein electrophoresis and immunoglobulin and complement levels were normal. Salmonella, Brucella, hepatitis B, hepatitis C, cryoglobulins, and HIV were negative. Thoracic and abdominopelvic computed tomography were normal. Colonoscopy and colon biopsy were normal. There was no evidence for a malignant disease.

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Submitted: 24.07.2014
Accepted: 04.09.2014
Available Online Date: 31.03.2015

BASDAI was scored to be 5, suggesting AS activation. For arthritis, sulphasalazine 2 g/day and diclofenac sodium (NSAID) 100 mg/day were started. Colchicine was suggested for the treatment of EED; therefore, colchicine at a dosage of 1 mg/day was also added. After 3 months of treatment, the EED lesions healed and leukocyte counts, hemoglobin levels, ESR, and CRP levels returned to the normal levels. Six months later, colchicine was tapered without cutaneous or articular relapse. Sulfasalazine 2 g daily was continued and diclofenac sodium was recommended as needed.

Discussion

AS is a chronic inflammatory disease of the axial skeleton, manifested by back pain and progressive stiffness of the spine (6). Skin lesions are quite rare in AS. In addition, vasculitis is uncommon. The etiology of EED remains unclear; however, some authors have suggested that inflammation in the arterial walls as a result of immune complex activation caused by chronic antigenic exposure is involved in the development of EED (7).

EED may be caused by endothelial immune complex deposition as a response to bacterial and viral antigens. EED can be confused clinically and histopathologically with a number of other skin conditions including urticarial vasculitis, granuloma faciale, neutrophilic dermatosis, and LCV. Histopathologically, acute lesions show a neutrophilic, perivascular infiltrate with dermal fibrin deposits, endothelial expansion, and leukocytoclasis. Presence of prominent edema in the papillary dermis, absence of fibrinoid necrosis on vessel walls, and evidence of vasculitis are the most helpful histopathological findings in differential diagnosis (8). In present case, neutrophil infiltration, endothelial swelling, nuclear dusts, and fibrinoid necrosis were present in the dermis, as shown in Figure 2a, b.

Several cases have been reported to be associated with systemic lupus erythematosus, primary Sjögren syndrome, antiphospholipid syndrome, and rheumatoid arthritis. Behcet's disease, cryoglobulinemic vasculitis, Henoch-Schönlein purpura, systemic lupus erythematosus, and Hypersensitivity vasculitis can show the histopathological findings of LCV in association with characteristic cutaneous manifestations and should always be considered in the differential diagnosis of EED.

The typical distribution pattern of skin lesions when evaluated together with the histopathological findings helps to confirm the diagnosis (3, 7). Our patient had lesions with the typical distribution pattern. Systemic symptoms, autoantibodies, and clinical findings could be helpful for discriminative diagnosis. Infectious agents including streptococcus, viral hepatitis, syphilis, and HIV have been reported as possi-

Figure 1. Reddish-purple nodules on the extensor sides of both hands and forearms

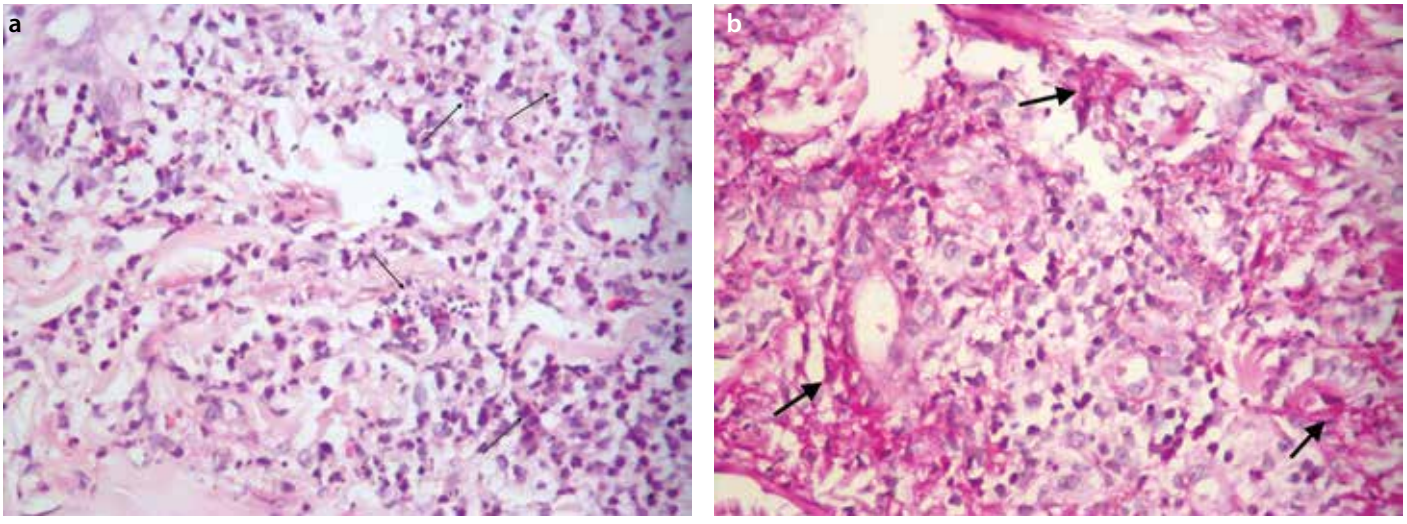

Figure 2. a, b. Infiltration of mixed inflammatory cells and neutrophils, endothelial swelling, and nuclear dusts (arrows) are present in the vessels (hematoxylin and eosin, ×400) (a), fibrinoid necrosis is easily seen by periodic acid/Schiff (PAS) staining (arrows) (histochemistry, ×400) (b)

ble etiological factors (9). Many EED cases are idiopathic. We excluded other neutrophilic dermatoses and systemic autoimmune and inflammatory disorders by histopathological and clinical findings. To the best of our knowledge, no case has been reported that could be associated with or accompanying AS. Cutaneous vasculitis in AS is rare and most cases have been reported to have IgA nephropathy. Those cases revealed IgA deposition in skin biopsy when examined with direct immunofluorescence (DIF) (10). Recently, Kobak S et al. reported LCV coexisting with AS. In our case, there was no evidence of IgA nephropathy and serum IgA levels were normal. In addition, in skin biopsy, DIF revealed no evidence of IgA, IgM, IgG, and C3 immune complex deposition.

Generally, dapsone is recommended and preferred for treatment. Other recommended drugs that are believed to be effective include sulphasalazine, antimalarials, corticosteroids, NSAIDs, tetracycline, and colchicine. Our patient was treated with sulphasalazine, diclofenac, and colchicine. Both ankylosing spondylitis and the rash responded well to this treatment.

To conclude, in our case, EED could have occurred as a result of AS activation. Further studies are needed to confirm our observation.

Ethics Committee Approval: N/A

Informed Consent: Written informed consent was obtained from patients who participated in this case.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - F.Y., T.K.; Design - F.Y., T.K.; Supervision - F.Y., E.E.; Materials - F.Y., A.A.; Data Collection and/or Processing - F.Y., T.K., A.A.; Analysis and/or Interpretation - F.Y., D.AT.; Literature Review - F.Y., T.K.; Writer - F.Y., T.K., D.AT.; Critical Review - F.Y., E.E.

Conflict of Interest: The authors declared no conflict of interest.

Financial Disclosure: The authors declared that this study has received no financial support.

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