Psoriatic Arthritis with Annular Pustular Psoriasis

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Abstract

We herein present the case of a 56-year-old woman who presented with symptoms of psoriatic arthritis (PsA) with erythema that progressed to annular pustular psoriasis. The patient had a 15-year history of polyarthritis. Annular pustular psoriasis is not typically observed in cases of arthritis. This is the first reported case of PsA with annular pustular psoriasis.

Key words: psoriatic arthritis, polyarthritis, annular erythema

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Introduction

Psoriatic arthritis (PsA) - an inflammatory condition associated with psoriasis (1) - occurs in up to 30% of patients with psoriasis (1). In most cases, the psoriasis precedes arthritis, sometimes by many years. Obtaining a diagnosis of PsA in a patient who presents with joint pain before the onset of psoriasis is difficult, as is differentiating PsA-type polyarthritis from rheumatoid arthritis (RA). In this paper, we report a rare case of PsA with annular pustular psoriasis.

Case Report

A 56-year-old woman presented with annular erythema and polyarthritis in February 2009. She had experienced the onset of knee joint pain at 37 years of age (in 1990), which progressed to polyarthritis by 1994. Despite negative results for rheumatoid factor (RF), RA was diagnosed at another hospital, and she was accordingly prescribed salazosulfapyridine (SASP) in 1994. In 2009, she presented with multiple annular erythema on the chest and abdomen (Fig. 1a). Potassium hydroxide preparation (fungus) test results were negative. An adverse reaction to SASP was suspected, and the medication regimen was discontinued. Treatment with methotrexate (MTX) at 6 mg/wk for arthritis was initiated, although it was discontinued one month later because of skin eruptions; the erythema had not improved. Based on the patient’s symptoms of dry eyes and dry mouth around this time and positive results for antinuclear antibodies (×40, speckled pattern), the annular erythema was considered to be a complication of Sjögren syndrome. However, negative results for anti-SS-A antibodies did not lead to a definitive diagnosis of Sjögren syndrome.

In September 2009, the patient first visited a dermatologist. A skin biopsy of the erythematous area (Fig. 1b) showed only mild eosinophilic infiltration, and a definitive diagnosis could not be made. In April 2010, the patient returned to the hospital with heel and back pain and distal interphalangeal (DIP) arthralgia. Heberden’s nodes were observed on both hands. Based on these findings, osteoarthritis (OA) secondary to RA was diagnosed. In 2011, radiography of the hands showed narrowing of the DIP joint space (Fig. 2a). In December 2011, treatment with prednisolone at 5 mg/day and tacrolimus at 1.5 mg/day was initiated, which provided relief from the arthralgia. However, the annular scaly erythema only gradually deteriorated despite the use of a topical steroid. In 2011, a repeat skin biopsy of the erythematous area revealed parakeratosis, acanthosis and Munro’s microabscess formation, albeit to a mild degree (Fig. 1c). Based on these findings, pustular psoriasis was diagnosed. The patient was therefore prescribed a topical steroid, vitamin D3 ointment and narrow-band ultraviolet B phototherapy (NB-UVB). The site of erythema showed repeated episodes of remission and exacerbation, whereas the arthritis exhibited persistent remission.

In 2013, the patient developed active arthritis, with redness, swelling and tenderness of the DIP joints. Hand radi-
ophotograph showed bone neoplasticity in the DIP joints - a characteristic finding of PsA (Fig. 2b). Subsequently, we reconsidered the findings of the assessment that had led to the diagnoses of RA and OA. A review of the patient’s medical records revealed a history of recurrent Achilles tendonitis, low back pain and tenderness of the sacroiliac joint. She also had back pain and demonstrated scoliosis. Additionally, she displayed tenderness in the sacroiliac joint, although the results of radiography were normal and remarkable findings of axial arthritis were absent. No nail involvement was observed at any point. Laboratory test results were negative for both RF and anti-cyclic citrullinated peptides antibodies, and the data revealed an elevated erythrocyte sedimentation rate (93 mm/h) and C-reactive protein level (3.48 mg/dL). Based on the Classification Criteria for Psoriatic Arthritis (2), PsA was diagnosed. The patient was prescribed MTX at 12 mg/wk, prednisolone at 5 mg/day and NB-UVB, which helped to control her skin and joint symptoms.

**Discussion**

In this study, we describe our experience with the rare case of a patient presenting with PsA symptoms and erythema that progressed to annular pustular psoriasis, with
the first joint symptoms appearing 15 years prior to the onset of psoriasis. Typically, in cases of PsA, the development of skin lesions precedes the manifestation of arthritis symptoms. However, 15-30% of patients with PsA develop symptoms of arthritis prior to showing skin lesions (3). Roberts et al. (4) reported that 16 of 100 patients with PsA showed arthritis onset before skin involvement; in four of these cases, PsA was diagnosed >11 years after arthritis onset.

Annular erythema can be a complication of psoriasis or Sjögren syndrome (5); the two conditions are differentiated based on the presence of scaly erythema in association with psoriasis (6). Annular pustular psoriasis has been reported to develop de novo without a history or symptoms of psoriasis vulgaris, and the pustular lesions are sustained (7, 8). Pustular lesions are also observed in patients with psoriasis vulgaris, but although they appear periodically. Our patient did not have a history of psoriasis vulgaris, and her pustular lesions were persistent.

PsA affecting the DIP joints may be confused with OA (1). In this case, the speed of onset of arthralgia in the DIP joints was slower than that in the other joints, but more severe than that seen in cases of OA. Annular pustular psoriasis is the only primary annular presentation of psoriasis (5, 9) and is not usually observed in cases of arthritis or in cases of autoimmune disease (7). This is the first case report to describe the presentation of PsA with annular pustular psoriasis.

**The authors state that they have no Conflict of Interest (COI).**

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