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LETTER TO THE EDITOR

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Mechanical stress caused by acetabular dysplasia possibly contributed to the development of coxitis in a patient with psoriatic arthritis: A case report

Dear Editor,

In the pathogenesis of psoriatic arthritis (PsA), mechanical stress is considered a central factor in the development of enthesitis.[1] However, it is not known whether mechanical stress on the hip joints contributes to coxitis in patients with PsA. We herein describe a rare case of PsA presenting with hip joint involvement possibly induced by mechanical stress caused by acetabular dysplasia.

A 64-year-old Japanese man presented with scaly erythema on his scalp, lower extremities, back, and right elbow. He had been receiving treatment with topical corticosteroid and vitamin D3 for 20 years. Two years before visiting our hospital, skin lesions spread over his entire body, and he felt pain in his right hip and left ankle at the time of arising from bed and during walking. He took nonsteroidal anti-inflammatory drugs as required, which improved the pain in his left ankle but not that in his right hip. Therefore, he was referred to our hospital. Skin manifestations are shown in Figure 1A-C. Laboratory tests showed that rheumatoid factor was negative and that the serum matrix metalloproteinase-3 level was within the normal range. Serum C-reactive protein level was slightly elevated (0.17 mg/dL. Normal rage; ≦0.14 mg/dL). X-ray imaging revealed erosion of the right lesser trochanter of the femur and borderline acetabular dysplasia, although the hip joint space was not narrowed (Figure 1D). Magnetic resonance imaging (MRI) demonstrated bone marrow edema of the anterior inferior iliac spine and the lateral region of the acetabular roof (Figure 1E). We consulted with an orthopedist, and he was diagnosed with PsA accompanied by enthesitis of the right rectus femoris muscle. Treatment with brodalumab was started, resulting in amelioration of his right hip pain in 4 weeks. Five months later, his skin manifestations disappeared completely. MRI performed 16 months after commencement of brodalumab demonstrated a decrease in the amount of bone marrow edema (Figure 1F).

Enthesitis is characteristic of spondyloarthritis including PsA, and enthesitis occurs in 23%-53% of PsA patients.[2] It was recently clarified that mechanical stress is a central factor in the development of enthesitis.[1] The Achilles tendon, plantar fascia, and lateral epicondyles are the sites most commonly affected by enthesitis,[2] while only 6.3% of PsA patients present with coxitis.[3] However, the cause of coxitis in patients with PsA has not been discussed well in the previous literature. In our case, the X-ray image revealed borderline acetabular dysplasia. Acetabular dysplasia is an unstable ball-in-socket hip joint that is characterized by a shallow acetabulum that does not cover the femoral head sufficiently. This anatomical aberration produces instability of the hip and increased mechanical stress at the acetabular rim.[4] In our case, mechanical stress caused by acetabular dysplasia possibly contributed to the development of coxitis, which underscores the importance of mechanical stress in the pathogenesis of PsA. In addition, coxitis was successfully treated with brodalumab, supporting the diagnosis of PsA rather than osteoarthritis. We here report a patient with PsA who developed coxitis possibly caused by mechanical stress by acetabular dysplasia successfully treated with brodalumab.

CONFLICT OF INTEREST

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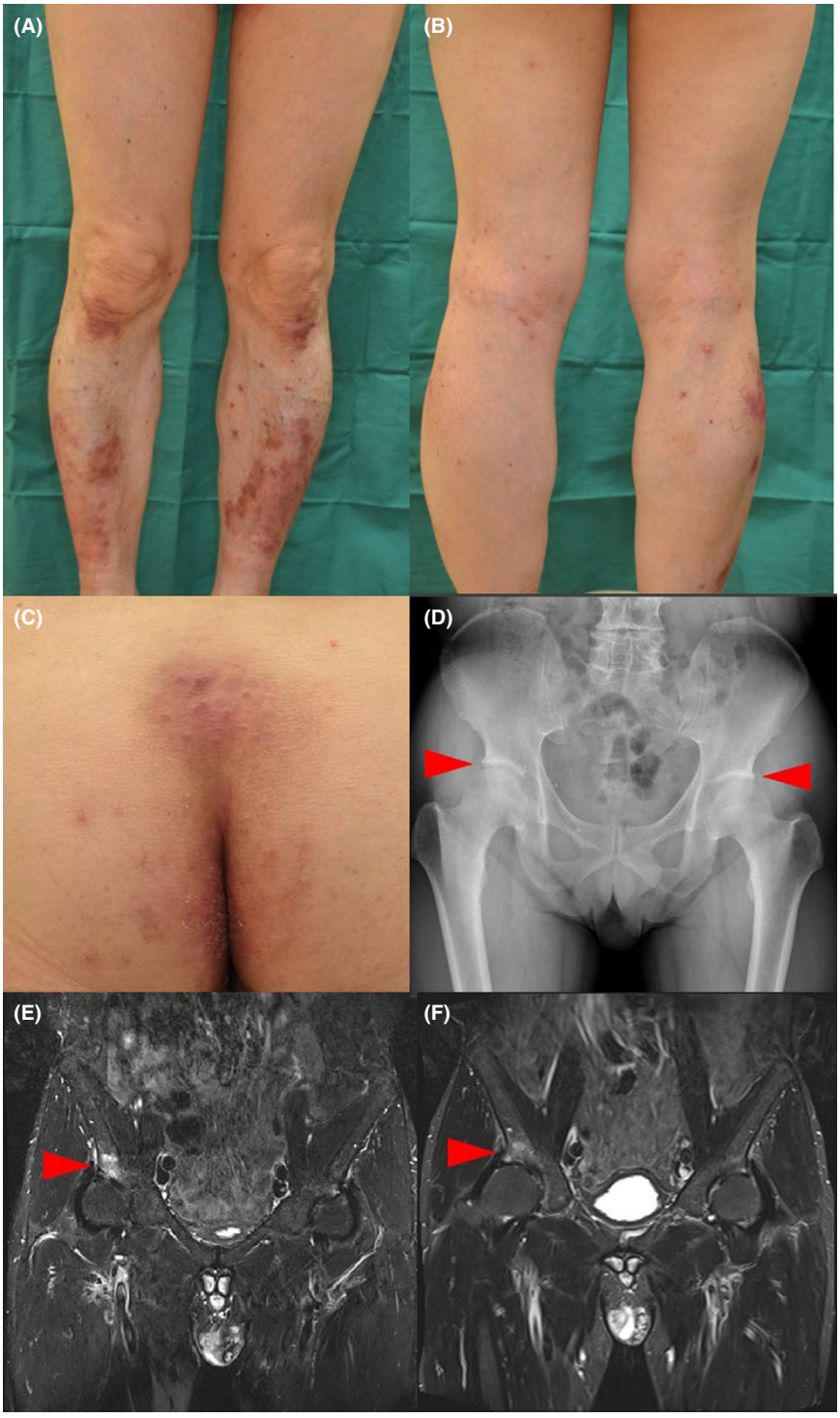

FIGURE 1 A-C, Skin manifestations at the time of the patient's first visit to our clinic. D, E, X-ray imaging (D) and magnetic resonance imaging (E) performed before the patient received brodalumab. Arrows show borderline acetabular dysplasia (D) and bone marrow edema of the anterior inferior iliac spine and the lateral region of the acetabular roof (E). F, Magnetic resonance imaging performed 16 mo after starting treatment with brodalumab. Arrow shows improvement of the bone edema

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REFERENCES

1. Schett G, Lories RJ, D'Agostino MA, Elewaut D, Kirkham B, Soriano ER, et al. Enthesitis: from pathophysiology to treatment. Nat Rev Rheumatol. 2017;13(12):731–41.
2. Polachek A, Li S, Chandran V, Gladman DD. Clinical enthesitis in a prospective longitudinal psoriatic arthritis cohort: incidence, prevalence, characteristics, and outcome. Arthritis Care Res (Hoboken). 2017;69(11):1685–91.

3. Michet CJ, Mason TG, Mazlumzadeh M. Hip joint disease in psoriatic arthritis: risk factors and natural history. Ann Rheum Dis. 2005;64(7):1068–70.
4. Pun S. Hip dysplasia in the young adult caused by residual childhood and adolescent-onset dysplasia. Curr Rev Musculoskelet Med. 2016;9(4):427–34.