

Polyarthritic, symmetric arthropathy in reactive arthritis

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Abstract

Reactive arthritis (ReA) is an immune mediated disease, clinically associated with oligoarthritis of the lower limbs and sometimes with urethritis and conjunctivitis. In our case, a 24-year-old male presented with severe mutilating arthritis involving both upper and lower extremities in contrast to conventional Reiter's syndrome which presents with asymmetric oligoarthritis. He had multiple well-defined, irregular, erythematous, hyperkeratotic, scaly and itchy plaques, not easily distinguishable from pustular psoriasis. The patient also gave history of circinate balanitis and urethritis. He was started on methotrexate (7.5 mg/week, later escalated to 15 mg/week with 15 mg/day folic acid supplementation) to which he responded. But when he stopped it on his own, the symptoms recurred. Hence, methotrexate was restarted, but still the patient suffers from fixed flexion deformities in affected joints. Histopathological examination of skin lesions is also suggestive of ReA. Thus, this case report suggests that diagnosis of Reiter's should be considered in symmetrical, mutilating polyarthritis patients with typical skin lesions.

Key words: Mutilating arthritis, reactive arthritis, Reiter's syndrome

INTRODUCTION

Reactive arthritis (ReA) is an immune mediated sterile synovitis developing after a distant infection usually in genitourinary or gastrointestinal tract. It has a strong association with human leukocyte antigen-B27 (HLA-B27). Fiessinger and Leroy described four cases of urethritis, arthritis, conjunctivitis, and diarrhea, which they named the “oculo-urethro-synovial” syndrome. In Germany, Hans Conrad Reiter in 1916 reported a similar clinical syndrome.

We report a case of ReA that presented several unorthodox problems of medical and orthopedic significance due to symmetrical mutilating arthritis of both limbs in contrast to conventional Reiter's which presents with asymmetric oligoarthritis.

CASE REPORT

A 24-year-old male presented with severe symmetrical fixed flexion deformities of bilateral knee with posterior subluxation of tibia [Figure 1], severe palmar flexion deformities of bilateral wrist with combination of boutonnières and swan neck deformities of fingers of both hands [Figure 2]. He had multiple well-defined, irregular, erythematous, hyperkeratotic, scaly and itchy plaques all over body including lips, but not oral cavity, with hyperkeratotic nails [Figure 3], not easily distinguishable from pustular psoriasis.

The patient was apparently all right 3 years back when he developed an episode of burning micturition with pus discharge (urethritis), painless shallow ulcers on glans penis (circinate balanitis) and desquamatory rash which progressed to involve the whole body. The patient had multiple joint pain and swelling involving knee, ankle, back and wrist. This episode lasted for 4–5 months and was treated symptomatically. As the swelling subsided, the patient developed deformities in both hands and left knee. Hence, he was started on methotrexate (7.5 mg/week, later escalated to 15 mg/week with 15 mg/day folic acid supplementation). The response was good with

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Figure 1: Lateral view of knee showing posterior subluxation of tibia



Figure 2: Flexion deformities of bilateral wrist with combination of boutonnières and swan neck deformities of fingers



Figure 3: Multiple well-defined, irregular, erythematous, hyperkeratotic, scaly and itchy plaques

disappearance of skin lesions after its start, subsidence of pain and swelling in joints, but the deformities established previously persisted.

After an asymptomatic interval of 9–10 months, the patient stopped methotrexate on his own, following which he developed severe desquamatory rash all over the body along with severe pain and swelling of joints like knee, foot, ankle, shoulder, hand and wrist. Methotrexate (7.5 mg/week, later escalated to 20 mg/week with 15 mg/day folinic acid supplementation) was restarted. However, bilateral symmetrical severe fixed flexion deformity of knees, toes, shoulders, wrist and finger joints (mutilating arthritis) developed later. Currently, there is no involvement of hip, elbow, sacroiliac joints and spine. There is no other evidence of systemic involvement. Patient is Rheumatoid Arthritis (RA) factor negative, HLA-B27 positive, with erythrocyte sedimentation rate (ESR) of 50 mm. X-ray demonstrated that there was osteopenia, bony ankylosis of knee joint with posterior subluxation of tibia [Figure 4], calcaneal spur (enthesitis) and proximal migration of humerus [Figure 5], palmar subluxation of wrist [Figure 6]. Histopathological examination of skin biopsy showed focal hyperkeratosis and keratotic plugging, papillomatosis with elongation of rete ridges. Epidermis showed the pustule filled with acute infiltrate of neutrophils, whereas upper dermis showed focal melanin pigment incontinence and diffuse chronic inflammation [Figure 7] suggestive of ReA.

DISCUSSION

ReA is characterized by classical triad of urethritis, conjunctivitis and arthritis, triggered by bacteria from the genera *Campylobacter*, *Chlamydia*, *Salmonella*, *Shigella*, and *Yersinia*, clinically associated with oligoarthritis of lower limbs and sometimes with urethritis and conjunctivitis.^[1]

ReA usually has a self-limited course of 3–12 months, but up to 50% of patients experience recurrent bouts of arthritis and 15–30% of them develop chronic symptoms of the disease.^[2] Most frequent presentation is nondestructive acute oligoarthritis of large lower limb joints (an average of four joints are affected). The average duration of the arthritis is 4–5 months, but two-thirds of patients have mild musculoskeletal symptoms that persist for more than 1 year. Recurrent attacks are more common in patients with *Chlamydia*-induced ReA. Approximately 15–30% of patients develop chronic or recurrent arthritis, sacroiliitis, or spondylitis, and most of these patients have a positive family history or are positive for HLA-B27.

^[3] Secondary to enthesitis, patients may have heel pain. Diffuse swelling of an entire finger or toe (“sausage digit”) can be seen. Mucocutaneous lesions are very specific. Keratoderma blennorrhagica (5–30%) begins on the palms and soles as pustules; they gradually become covered with thick, horny crusts, and neighboring lesions may become



Figure 4: Plain radiograph showing osteopenia, bony ankylosis of knee joint with posterior subluxation of tibia (lateral view)



Figure 5: Plain radiograph showing proximal migration of humerus

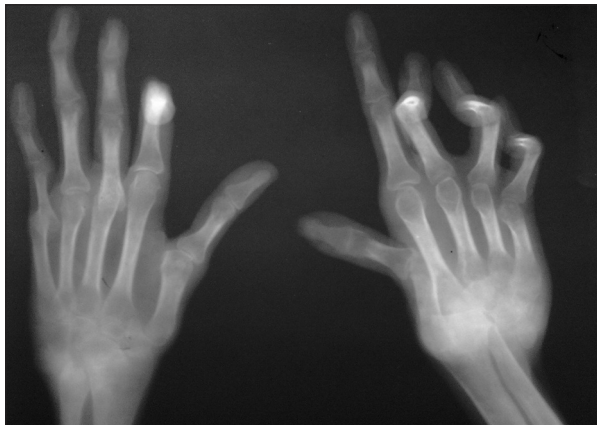


Figure 6: Plain radiograph showing palmar subluxation of wrist

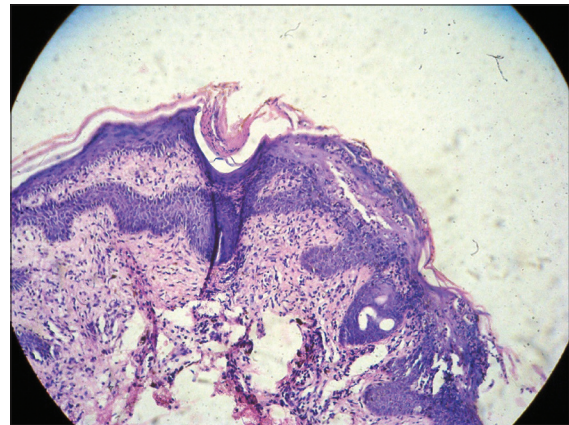


Figure 7: Histopathological examination of skin biopsy suggestive of reactive arthritis

confluent. Circinate balanitis (20–40%) is a well-defined, painless, erythematous lesion with small, shallow ulcers of the glans penis and urethral meatus.^[4]

The association of HLA-B27 and ReA is illustrated by the fact that the prevalence of disease in B27-positive individuals is five times greater than in the general population. In B27-positive relatives of patients with ReA, the prevalence is another 10 times greater.^[5] Thus, HLA-B27 appears to play an important role in the pathogenesis of arthritis, especially in a genetically predisposed patient.

In this case, although there was classical history of episode of urethritis followed by skin and joint involvement, the patient had mutilating arthritis of more than 20 joints which was symmetrical in nature in contrast to asymmetric oligoarthritis usually seen in classical Reiter's. Skin lesions along with hyperkeratotic nail involvement were more in favor of Reiter's. Arthrodesis of wrist and fingers in functional position was done in stage wise manner. As the patient was already wheelchair bound and had adjusted most of his daily activity with bony ankylosis of both knees, no intervention

was done on knee as per patient's request, except skeletal traction to reduce deformity. Methotrexate was continued with monitoring of liver and kidney functions at regular interval.

Thus, this case report suggests that diagnosis of Reiter's should be considered in symmetrical, mutilating polyarthritic arthropathy patients with typical skin lesions.

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