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Case Report

Cutaneous manifestation of reactive arthritis: Case report

Magdalena Krajewska-Włodarczyk [a,*], *Agnieszka Owczarczyk-Saczonek* [b], *Waldemar Placek* [b]

[a] *Department of Rheumatology, Municipal Hospital in Olsztyn, Poland*
[b] *Department of Dermatology, Sexually Transmitted Diseases and Clinical Immunology, Faculty of Medical Sciences, University of Warmia and Mazury in Olsztyn, Poland*

ARTICLE INFO

Article history:
Received 10 March 2015
Received in revised form
10 April 2015
Accepted 5 May 2015
Available online 9 July 2015

Keywords:
Reactive arthritis
Reiter disease
Keratoderma blenorrhagicum
Balanitis circinata

ABSTRACT

Introduction: Reactive arthritis (ReA) is one of the forms of seronegative spondyloarthropathies. The difficulties in the diagnosis of reactive arthritis, despite a complex clinical picture, result from the lack of unequivocal diagnostic criteria, especially in the initial period. Diverse clinical manifestation of ReA may require the cooperation of many specialists.
Aim: The case of a 59-year-old man with reactive arthritis caused by an acute *Yersinia enterocolitica* infection 3 weeks before was described.
Case study: A 59-year-old patient, so far healthy, was admitted due to fever for a few days, pain and swelling of crurotalar joints, pain in the left part of the lumbosacral region, escalating at night, and additional complaints impeding urinating. Joint involvement was accompanied by numerous cutaneous and mucosal lesions.
Results and discussion: In this case the presence of characteristic cutaneous symptoms as keratoderma blenorrhagicum and balanitis circinata allowed to identify the disease quickly, despite a short course of the disease. The presence of antibodies of *Y. enterocolitica* IgA was noticed, without the presence of IgG and IgM. The presence of HLA B27 antigen was positive. In this case, the occurrence of many characteristic cutaneous lesions enabled a quick identification of the disease, despite the difficulties with determining the etiological factor.
Conclusions: The diagnosis of ReA is clinical, based on the history and physical examination findings. A high index of suspicion is required because no laboratory tests, markers or imaging finding allow diagnosing of ReA. The most important is proper cooperation between a rheumatologist and a dermatologist.

* *Correspondence to*: Department of Rheumatology, Municipal Hospital in Olsztyn, Wojska Polskiego 30, 10-229 Olsztyn, Poland. Tel.: +48 89 678 66 51; fax: +48 89 678 66 68.
E-mail address: magdalenakw@op.pl (M. Krajewska-Włodarczyk).

http://dx.doi.org/10.1016/j.poamed.2015.05.006

1. Introduction

Reactive arthritis (ReA) is a disease of a complex clinical picture belonging to a group of seronegative spondyloarthropathies. The first mentions which could reflect ReA were formulated in the times of Hippocrates (approx. 460 BC).[3] Reiter[13] and independent researchers, Fiessinger and Leroy,[5] described the ocular-articular-urethal syndrome in 1916. In 1942 the term Reiter's syndrome was introduced into the medical terminology. It specified the coexistence of syndromes characteristic for reactive arthritis.[2] Nowadays, this term is less used due to Hans Reiter's attitude during the World War II. Diverse clinical manifestation of ReA includes the syndromes of preceding infection of the gastro-intestinal tract, urinary system and, less frequently, respiratory, peripheral arthritis – most frequently crurotalar and knee joints, vertebral joints, cutaneous and mucosal lesions, and ocular involvement.[8] The occurrence of so many syndromes may cause great diagnostic difficulties, especially in the initial period and it may require the cooperation of doctors of many specializations. Data on the incidence and prevalence of ReA are scarce, partly because of a lack of a disease definition and classification criteria. The frequency is estimated to be 3.5–5.0 cases per 100 000.[1] The most common etiological factors are enteric rods of *Shigella flexneri* and *S. dysenteriae*, *Salmonella enteritidis* and *S. typhimurium*, *Camphylobacter jejuni*, *Clostridium difficile*, *Yersinia enterocolitica* 03 and 09, *Chlamydiae trachomatis* and *Ch. pneumoniae* and less frequent *Clostridium difficile* or *Ureaplasma urealyticum*[11]. In 65%–80% of patients the presence of the HLA-B27 antigen may be determined.[12,14] Below, the case of a patient with ReA with diverse dermatological picture was presented.

2. Aim

We present and describe the case of a 59-year-old man with reactive arthritis caused by an acute *Y. enterocolitica* infection 3 weeks before.

3. Case study

A 59-year-old patient, so far healthy, was admitted to the Department of Internal Medicine due to fever for a few days, pain and swelling of crurotalar joints, pain in the left part of the lumbosacral region, escalating at night, and additional complaints impeding urinating.

About a month before admission to hospital the lesions on glans and foreskin appeared. Three weeks before hospitalization diarrhea with accompanying pains in the right iliac fossa occurred, which stopped spontaneously after three days. The patient noticed deterioration of his state of mind and increasing weakness. A few days before he was admitted to hospital a burning sensation in the area of crurotalar joints appeared, which initially did not require analgesia. The pain of crurotalar joints increased, pain in the sacral region occurred and the swelling of the crurotalar joints appeared. The complaints were accompanied by cutaneous lesions on both the soles, initially of erythema and later of pustular character. On the third day of hospitalization, cutaneous lesions in the left subscapular area appeared. Herpes zoster was diagnosed.

In the examination of the locomotor organs not only a slight limitation of the motion of the lumbar area of the spine was stated, but also a weak positive left-handed Patrick symptom and the limitation and swelling of crurotalar joints. On dermatological examination of soles numerous pustular (up to 1 cm) and hyperkeratotic lesions, yellowish brown in color, were found. Within the mucosa of the glans, many annular erythematous plaques and erosions with whitish, slightly raised edges were noticed and on the tongue two singular shallow erosions were spotted. Moreover, the patient had lesions of the nail plate of the fifth finger of the right hand and the first toe of the right foot in form of oil spots. In the interdigital spaces of feet maceration and skin rupture with a slight sero-purulent exudation were present.

In the laboratory tests when the patient was admitted the titer of CRP was 170.5 mg/L and ESR 134 mm/h; a general examination of urine revealed a thick layer of leukocytes blocking the visual area and singular fresh erythrocytes. The full blood count revealed Hgb 10.3 g/dL, RBC 3.4×10^{12}/L, WBC 11.3×10^{9}/L, PLT 393×10^{9}/L and Hct 32%.

The urine culture did not grow any bacteria. In the bacteriological examination performed on a swab from urethra *Micrococcus* sp. were grown and on a swab from the interdigital spaces singular colonies of *Clostridium perfringens* were grown. The cultures from the swabs taken from soles were sterile. Pathogenic enteric rods were not grown on feces either. The presence of HLA B27 antigen was positive. The rheumatoid factor, Waaler-Rose test, anti-citrulline peptide (anti-CCP) and antinuclear antibodies were negative. The presence of antibodies of *Y. enterocolitica* IgA were noticed, without the presence IgG and IgM. The antibodies of *Ch. trachomatis* were not present. The Mantoux tuberculin skin test (RT-23) was evaluated as 10 mm and the Quantiferon control test gave a negative result.

The X-ray of iliosacral joints showed broadening of the left joint space. The radiograms of lungs and crurotalar joints were normal.

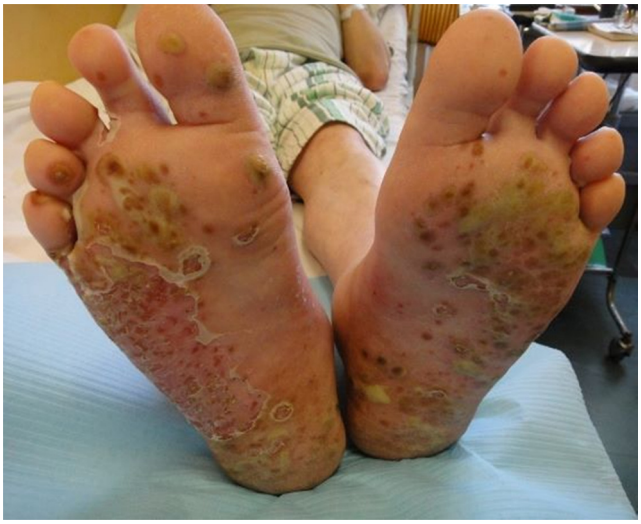

Fig. 1 – Keratoderma blenorrhagicum on the soles.

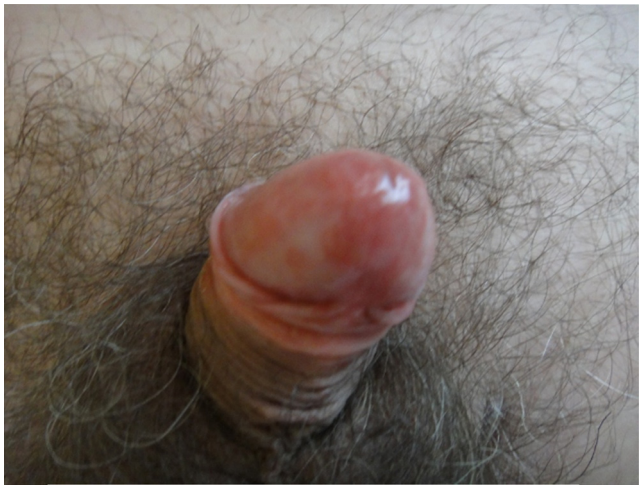

Fig. 2 – Balanitis circinata on the penis.

The histopathological examination of the cutaneous lesions was not performed due to the typical morphology of these lesions and the mucosal lesions: *keratoderma blenorrhagicum* and *balanitis circinata* (Figs. 1 and 2).

For treatment sulfasalazine was applied in a daily dose of 2.0 g; initially doxycycline 200 mg/day was applied, next it was applied together with ciprofloxacine 1.0 g/day, fluconazole 100 mg/day, diclofenac 150 mg and omeprazole 20 mg/day. A significant reduction of the painful symptoms of crurotalar joints was achieved and the swelling of crurotalar joints and the dysuric symptoms receded. The CRP was reduced to 53 mg/dL. After dermatological treatment (salicylic acid 10% and mometasone furoate) we observed gradual exfoliation and reduction of skin and mucosal lesions.

4. Results and discussion

In this case ReA of crurotalar joints and iliosacral joint occurred after a *Y. enterocolitica* infection. Difficulties in the diagnosis of ReA, despite a complex clinical picture, are because of the lack of unequivocal criteria of diagnosis. The ACR criteria for ReA, created in 1981, were based on the evaluation of sensitivity and specificity of certain symptoms: an episode of arthritis lasting longer than a month with urethritis and/or cervicitis OR an episode of arthritis lasting longer than a month with urethritis or cervicitis or bilateral conjunctivitis.[14] The next attempt to formulate the criteria for ReA was introduced at the Third International Workshop on Reactive Arthritis in 1995. These criteria included asymmetrical peripheral arthritis, especially of the lower extremities, and precedent to the involvement of joints, urethritis or diarrhea. The confirmation of infection in laboratory tests is only required in case of an unclear clinical picture of the infection.[15] On the Fourth International Workshop on Reactive Arthritis in 1999 it was stated that the term reactive arthritis is only applied to arthritis meeting the criteria for spondyloarthropathy, connected to the precedent infection and the presence of HLA-B27 antigen.[13,16]

Except for the symptoms enumerated in the diagnostic criteria, cutaneous and mucosal lesions are very characteristic for reactive arthritis. Circinate balanitis or vulvitis (*balanitis circinata*) is a frequent symptom coexisting with ReA[2,7,9,17]; it occurs in 14%–40% of patients.[11] The lesions have a form of papules, transforming into annular or semicircular erythematous erosions with visible grayish white ridges. They are usually located in coronal sulcus, at the corpus of penis and the area of urethral meatus. *Keratoderma blenorrhagicum* and *pustulosis palmoplantaris* occur in about 10%–25% of patients. They are hyperkeratotic papules on palms and soles, which are yellowish brown in color, similar to calluses, and lesions in the form of pustules as in pustular psoriasis.[7,10] They usually occur 1–2 months after arthritis; they rarely precede arthral symptoms or occur at the same time.[4] The psoriasis-like lesions can occur in about 10%–20% of patients, usually in the area of the joints involved, on the scalp and in the navel area.[7,9] Additionally, the nail plates may be involved in the form of subungual hyperkeratosis in 6%–12% of patients.[10] In 15% ReA patients, with *Yersinia* infection, lesions in the form of erythema nodosum can be observed.[6]

Because of many skin lesions the patient looks for a dermatologist help. As cutaneous symptoms may precede the occurrence of arthritis, it may be the dermatologist who preliminary performs diagnosis of ReA. In this case, the occurrence of many characteristic cutaneous lesions enabled a quick identification of the disease, despite the difficulties with determining the etiological factor.

5. Conclusions

1. The diagnosis of reactive arthritis (ReA) is clinical, based on the history and physical examination findings.
2. A high index of suspicion is required because of no laboratory tests or markers or imaging finding in diagnosis of ReA.
3. The most important is proper cooperation between rheumatologist and dermatologist.

Conflict of interest

None declared.

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