Diarrhea + Balanitis = Reactive Arthritis

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INTRODUCTION

Reactive arthritis—sometimes called Reiter’s syndrome (1–5) or postinfectious arthritis (6)—is a sterile, inflammatory arthropathy triggered by various infections, particularly those involving the genital tract or gut (7–13). In this report, we summarize the clinical aspects of reactive arthritis and present an illustrative case.

CASE HISTORY

A 27-year-old man complained of pain and swelling in his right knee and left index finger of one month’s duration. Approximately three weeks before onset of these complaints, he began having four to five, nonbloody, watery-brown stools daily. There was no associated fever, pain, nausea, or vomiting, and after five days, the diarrhea resolved spontaneously.

Shortly before admission, the patient noticed a painless rash on his glans penis. He denied recent sexual activity, sore throat, or difficulty with his eyes or skin. His medical history otherwise was unremarkable.

On physical examination, the patient appeared well. His vital signs were normal as were his eyes, mouth, nails, and skin. Pertinent abnormalities were a minimally swollen right knee, fusiform swelling of the left index proximal interphalangeal joint, and erythematous, scaly plaques on the glans penis (Figure).

Laboratory studies that gave normal or negative findings were as follows: complete blood cell count, urinalysis, chest radiograph, serum rheumatoid factor, (continued on page 64)
antinuclear antibody, VDRL, and Lyme antibody. The HLA-B27 antigen test was positive.

With non-steroidal anti-inflammatory medication, the arthritis rapidly improved; topical steroid therapy cleared the penile rash. At a follow-up visit six weeks after discharge, the patient had no complaints, and his physical examination was normal.

**DISCUSSION**

The organisms that usually trigger reactive arthritis are *Chlamydia trachomatis* and *Ureaplasma urealyticum* from the genitourinary tract (2), and *Shigella flexneri*, *Salmonella typhimurium*, *Yersinia enterocolitica*, and *Campylobacter jejuni* from the gastrointestinal tract (2,4,6,7,13). In about 10% of the cases, *Chlamydia pneumoniae* from the respiratory tract is the triggering microbe (9). The risk of acquiring arthritis after infection with one of these organisms increases 50-fold when the HLA-B27 antigen is present (7).

Reactive arthritis characteristically affects young adults, usually one to four weeks after exposure to the infective agent (2,4,5,11,13). In most cases, the arthritis is asymmetric and oligoarticular (2,5,13), affecting joints in the lower extremities. However, joints in the upper extremities and sacroiliac region may also be involved (1–5,11,13). Enthesopathy (inflammation at insertions of tendons or ligaments) frequently coexists and may produce “sausage-shaped” digits (1,5,11,13).

A characteristic papulosquamous rash (keratoderma blenorrhagica) can occur, particularly when the arthritis follows a chlamydial infection (1,2,5,11). The rash often begins on the palms or soles; sporadically involves the scalp, trunk, and extremities; and can mimic pustular psoriasis (1,13). This eruption may be especially severe in patients who have the human immunodeficiency virus (13). Associated nail changes, such as onycholysis, brownish-yellow discoloration, or subungual keratoses, may also appear (3,4). Penile lesions, called balanitis circinata, sometimes occur as serpiginous patches on the glans (1,3–5,13).

Ocular manifestations consist of conjunctivitis or iritis, and sometimes, keratitis (3,4). Other occasional findings include palatal or lingual ulcers, aortic valvular insufficiency, conduction disturbances, and sterile urethritis (1,3–5,13).

Laboratory abnormalities—elevated erythrocyte sedimentation rate and mild anemia or leukocytosis—are not specific and simply reflect the inflammatory process. The joint fluid may contain up to 30,000 white blood cells per mm^3^, most being neutrophils, but organisms and crystals are absent (5). About 80% of white patients and 15% to 50% of black patients with reactive arthritis will test positive for the HLA-B27 antigen (11).

Differential diagnosis primarily concerns gonococcal, gouty, and psoriatic arthritides. Additional considerations are rheumatoid arthritis, adult Still’s disease, and acute rheumatic fever.

Management of reactive arthritis chiefly entails non-steroidal anti-inflammatory agents (5,11,12). In some patients, intra-articular injection of steroid is indicated (5,11,12), while in others, use of sulfasalazine or methotrexate may become necessary (5,11,12).

Prognosis is good (4). The course is often self-limited, but roughly half of the patients suffer recurring disease (11). Whether administration of antibiotics affects the long-term outcome awaits clarification (12).

**References**