Case Report

Poststreptococcal Reactive Arthritis with Thoracic Spine Involvement in an Adult

ALEXANDRA ALEXOPOULOU, SPYROS P. DOURAKIS, NIKOLAOS D. STAMOULIS, DIMITRIOS VASSILOPOULOS, and ATHANASIOS J. ARCHIMANDRITIS

ABSTRACT. It is controversial whether poststreptococcal reactive arthritis (PSReA) is an entity separate from acute rheumatic fever (ARF) or if it is a forme fruste of ARF. Although there are many case series of PSReA in children, this entity is not common in adults. We describe an adult patient with polyarthritis and thoracic spine involvement attributed to PSReA. (J Rheumatol 2005;32:2002–5)

Key Indexing Terms:
POSTSTREPTOCOCCAL REACTIVE ARTHRITIS THORACIC SPINE INVOLVEMENT GROUP A BETA-HEMOLYTIC STREPTOCOCCUS

Acute rheumatic fever (ARF), poststreptococcal reactive arthritis (PSReA), erythema nodosum, erythema multiforme, and poststreptococcal glomerulonephritis are considered the nonsuppurative sequelae of group A β-hemolytic streptococcal infections. The first case series of PSReA was described in 19821. Non-group A β-hemolytic streptococci were also considered as causative organisms of PSReA2. It is still debatable whether PSReA is an entity separate from ARF or is a forme fruste of ARF3,4.

Although there are many case series of PSReA in children, this entity is not common in adults. Involvement of the thoracic spine is a very rare clinical manifestation of PSReA. We describe an adult patient with polyarthritis and thoracic spine involvement attributed to PSReA.

CASE REPORT

A 60-year-old woman presented with high fever, backache, and arthritis in the left knee and ankle. Pharyngitis without fever had developed one month previously. Roxithromycin and then amoxicillin-clavulanate for 10 days were prescribed. Two weeks before admission, she complained of pain in the thoracic spine and 24 hours later she developed arthritis in the left knee and ankle and fever to 39°C. Three days later, pain on mastication due to the left temporomandibular joint (TMJ) involvement was added. Ketoprofen and clarithromycin were administered, without improvement. Examination revealed tenderness of the left TMJ and synovitis of the left knee and ankle joints. Severe localized tenderness at the level of lower thoracic vertebrae (T7–T8) was also noted. No cardiac murmur was found. Laboratory investigations showed hemoglobin 11.3 g/dl, white blood cell count 13.5 × 10³/µl with normal differentiation, PLT 551 × 10³/µl, erythrocyte sedimentation rate (ESR) 130 mm, C-reactive protein (CRP) 97.3 mg/l (normal < 5 mg/l), antistreptolysin-O (ASO) 2115 IU/ml (normal < 200 IU/ml), normal complement levels, and negative Wright agglutination test, rheumatoid factor and antinuclear antibody testing. One week before admission, ASO values were elevated at 616 IU/ml. Her initial treatment consisted of daily naproxen 1000 mg, vancomycin 2 g, and ciprofloxacin 1200 mg. A left knee joint aspiration showed a moderately inflammatory synovial fluid (SF, 12,400 leukocytes/mm³, 90% neutrophils). Microscopic analysis of the SF showed no crystals. Throat swab, blood, and SF cultures were negative. Chest and joint radiographs and electrocardiography showed no abnormalities. Doppler ultrasound of the heart was negative for carditis. Magnetic resonance imaging (MRI) of the thoracic spine showed low signal in T1 weighted images and high signal in T2 images of the adjacent intervertebral plates at T7–T8 level and narrowing of the disk space (Figures 1 and 2). A 99mTc bone scan on admission showed increased uptake at the T8 vertebral body (Figure 3). At the 8th hospital day, arthritis of the first right metatarsophalangeal (MTP) joint was noted.

Antibiotics were discontinued when the negative SF culture became available and the patient continued taking nonsteroidal antiinflammatory drugs. There was gradual improvement of her arthritic complaints and resolution of the fever. She was discharged home afebrile with minimal pain of her left knee. Two months later, she was asymptomatic with normal ESR and CRP values, while her ASO level had dropped to near normal. Fifteen months later she is still asymptomatic with no recurrence of her arthritis.

DISCUSSION

Reactive arthritis is defined as a sterile inflammatory arthritis occurring in association with a primary infection at a distant site of the body. Although there are many case series of PSReA in children there are only 2 in adults, one of 235 and the other of 17 cases6. The investigators described the clinical picture of PSReA and attempted to differentiate it from ARF. There are various speculations on the development of PSReA instead of ARF. Human host factors such as age and sex, differences in streptococcal virulence, or change in prevalence of certain serotypes in Western countries may be related to the variation of clinical manifestations of poststreptococcal diseases3.

PSReA was the most likely diagnosis in our patient. The late age of onset, history of sore throat, the increase and subsequent gradual decrease of the ASO titer, the asymmetric polyarticular involvement, high ESR and CRP, the subacute...
Figure 1. MRI of thoracic spine, T1 weighted scan at mid-sagittal level. Low signal of 2 adjacent intervertebral plateaus at T7–T8 level of thoracic spine and narrowing of the disk space (arrowhead).

Figure 2. MRI of thoracic spine, T2 mid-sagittal level. High signal at the endplates of 2 adjacent vertebrae (T7–T8) (arrowhead).
onset of the disease, and the negative cultures and mild inflammatory changes of the SF were all suggestive of PSReA. The full recovery with no joint deformity was also characteristic of PSReA. The major Jones criteria for ARF were not met and the arthritis had a rather additive instead of migratory character. Other clinical characteristics occurring in our patient that would differentiate PSReA from ARF were the female sex, the short onset of arthritis after streptococcal infection, the long duration of arthritis, and the absence of carditis. The latter is the rule in adults from countries where ARF has a low prevalence.

Arthritis in adults with PSReA is asymmetrical and may be monoarticular (23%), oligoarticular (35%), and polyarticular (43%). The knee joint was affected with the highest frequency, followed by ankle, wrist, elbow, metacarpophalangeal, proximal interphalangeal and MTP joints. Involvement of the thoracic spine was a very rare clinical manifestation in our patient. To our knowledge there have been only 2 case reports (one in a child and one in a 29-year-old adult) with involvement of the cervical spine. From the case series reviewed in children and in adults, 2 reported axial involvement as a distinct characteristic from ARF, without, however, determining the type of joints involved. Further, none of these cases had complete radiologic examinations with bone scans and MRI.

In our case, the inflammatory changes detected in the adjacent thoracic vertebral bodies and the intervertebral disks were initially suspicious for bacterial osteomyelitis and/or discitis. The patient’s subsequent uneventful course and the complete resolution of her symptoms indicate that this spinal inflammation was part of the clinical syndrome of PSReA. It should be noted that similar MRI findings have been described in patients with spondyloarthopathies including ankylosing spondylitis and psoriatic arthritis, etc.

Long-term secondary antibiotic prophylaxis is not usually required in patients with PSReA. Administration of antibiotic prophylaxis was recommended in adults with characteristics such as mitral or aortic valve disease, severe extraarticular symptoms, more than one episode of PSReA, and a first-degree relative with ARF. Our patient had none of these features and therefore was not given such prophylaxis.

We conclude that the clinical manifestations of poststreptococcal syndromes are variable and the diagnosis of PSReA should be considered in adult patients presenting with nonsuppurative inflammatory arthritis after a streptococcal infection, even when concomitant involvement of the spine is evident.

REFERENCES

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Figure 3. 99mTc bone scan performed on admission showing increased uptake at the T8 vertebral body (arrowhead).