

CONCISE REPORT

Hip joint disease in psoriatic arthritis: risk factors and natural history

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Ann Rheum Dis 2005;64:1068–1070. doi: 10.1136/ard.2004.022228

Objective: To determine the natural history of hip joint disease in psoriatic arthritis (PsA) and identify clinical risk factors for its early identification.

Patients and methods: 504 patients with PsA according to ESSG criteria were studied. Mean follow up was 5.7 years (range <1–45). Mean age at onset of psoriasis was 32 years and of PsA, 39 years. The most common pattern of PsA at onset was oligoarticular (49%) and at the latest examination, polyarticular (65%). Sacroiliitis or spondylitis was diagnosed in 94 (18.7%) patients.

Results: 32 (6.3%) patients developed psoriatic hip arthropathy, and of these, 26 (81%) also had sacroiliitis or spondylitis. In 7/17 (41%) patients the hip became affected within 1 year after the onset of PsA. Hip disease occurred more often in younger patients. Sex, pattern of peripheral arthritis, duration of psoriasis before arthritis affected the distal interphalangeal joints, dactylitis, or enthesitis were not associated with the risk of hip disease. Seventeen patients were followed up and nine required hip arthroplasty. Sixteen (50%) first had arthroplasty within 5 years after the onset of hip pain.

Conclusions: Psoriatic hip arthropathy occurs infrequently in PsA and is associated with earlier onset of arthritis and psoriatic spondylitis. Bilateral hip involvement and rapid progression to hip arthroplasty are common.

Long term studies of large populations of patients with spondyloarthropathy, including those with psoriasis, have identified early involvement of the hip joint as a major marker for severe disease.^{1–2} Hip disease may cause symptoms that overshadow other spinal manifestations in spondyloarthropathy.³ However, little is known about the natural history and outcome of hip joint disease in psoriatic arthritis (PsA). Psoriatic spondylitis results in rates of hip arthroplasty similar to those seen in primary ankylosing spondylitis.⁴ It is not known whether clinically important involvement of the hip joint occurs in all subsets of PsA, but total hip arthroplasty is the most common orthopaedic operation reported in patients with PsA.⁵

Our study was a prospective analysis of clinical hip disease in a cohort of patients with PsA from a single referral centre. The goal was to define the natural history of this complication of PsA and to identify potential risk factors for earlier identification and therapeutic intervention.

METHODS

The cases for our analysis were identified through chart and radiographic review of a cohort of 504 consecutive patients with PsA evaluated at the Mayo Clinic (Rochester, Minnesota) from 1985 through 1999. They were followed up prospectively by subsequent clinic visits and chart review

until 31 December 2002. Cases were classified as PsA if they met the criteria of the European Spondylarthropathy Study Group (ESSG).⁶

Patient information in the cohort database included sex, age at onset of psoriasis, PsA, pattern of peripheral PsA at onset and latest follow up, presence of dactylitis, enthesopathy (heel and hip), mutilans deformity, distal interphalangeal (DIP) involvement, radiographic diagnosis of sacroiliitis, psoriatic spondylitis, radiographic evidence of hip joint inflammatory arthropathy, orthopaedic surgical procedures, and medical treatments for PsA. Patients with a positive rheumatoid factor were excluded from the study to minimise the risk of misclassification of rheumatoid arthritis as psoriasis. Because this is a retrospective cohort study, enthesitis as a primary initial manifestation of PsA was not included. Enthesitis as a primary lesion in the spondyloarthropathies is a recently emphasised concept and it was thought that earlier members of the cohort might not have been carefully questioned about this problem.

Hip joint disease was considered to be present when a patient with PsA had symptoms and radiographic evidence of hip joint involvement (fig 1). Radiographic characteristics of primary inflammatory hip disease included axial or concentric joint space narrowing with marginal osteophytes. Patients with radiographs interpreted as primary osteoarthritis with superolateral joint space loss or avascular necrosis were excluded, as were those with reported symptoms of hip pain but without radiographic confirmation.

Summary statistics of the entire cohort and the subset with hip disease are provided. Analysis of the cohort to identify risk factors associated with the presence of clinical hip joint disease was performed with χ^2 analysis for categorical variables and log regression for continuous variables. An estimate of the survival of hip joints in patients from the date of the first reported symptom to the first arthroplasty was calculated using Kaplan-Meier survival analysis.

RESULTS

The cohort with PsA consisted of 504 patients (292 men, 212 women). The mean length of follow up was 5.7 years (range <1–45). The mean age at onset of psoriasis was 32 years (range 1–76) and of PsA, 39 years (range 9–81). In 6% of patients, arthritis developed before psoriasis was diagnosed, with an average interval of 7 years before skin lesions appeared. In 35% of patients, arthritis developed within 1 year after the diagnosis of psoriasis. In the other 49%, arthritis was diagnosed up to 57 years after the onset of psoriasis. At disease onset, the pattern of peripheral joint involvement was oligoarticular in 49%, polyarticular in 43%, and monoarticular in 16%. During follow up the disease progressed to polyarthritides in 65% of patients. DIP joint synovitis was seen in 48% of patients, dactylitis in 39%, and enthesitis in 25%. Only one patient presented with axial

Abbreviations: DIP, distal interphalangeal; PsA, psoriatic arthritis



Figure 1 A 26 year old man had a 7 year history of psoriasis and PsA. The radiograph demonstrates established hip arthropathy at the first presentation with hip pain.

symptoms of psoriatic spondylitis alone, without peripheral synovitis or dactylitis. Ninety four patients (18.6%) were cumulatively diagnosed with either limited sacroiliitis (40 patients) or more extensive spondylitis (54 patients). Axial involvement was identified in 35 women and 59 men. Arthritis mutilans was noted in 30 (6%) patients.

Symptomatic hip joint disease was identified in 32 patients (6.4%). Of these 32 patients, 20 (63%) had bilateral involvement of the hip joint. In the 12 patients with unilateral hip disease, the right and left hips were affected equally. Neither sex nor age at onset of PsA was associated with either unilateral or bilateral hip involvement. Twenty six (81%) patients with symptomatic hip joint disease had radiographic evidence of either sacroiliitis (9 patients) or sacroiliitis and spondylitis (17 patients).

In patients with symptomatic hip arthropathy, PsA occurred at a mean age of 29 years (range 15–59), a full decade earlier than in those without hip disease (mean age 40 years; range 9–81). The mean interval from the onset of arthritis to the appearance of hip joint symptoms was 11 years (range <1–56). However, of the 17 patients for whom this variable could be calculated, 7 (41%) had hip symptoms within the first year after arthritis was diagnosed.

Clinical characteristics associated with symptomatic hip joint disease included younger age at onset of PsA ($p < 0.0001$) and axial involvement, especially spondylitis ($p < 0.0001$). Sex, pattern of peripheral arthritis at onset or follow up, length of the interval between the onset of skin and joint manifestations, DIP joint involvement, dactylitis, enthesitis, and lack of methotrexate or sulfasalazine treatment were not associated with a higher prevalence of hip disease.

Longitudinal observation was available for 17 of the 32 patients with clinical hip arthropathy. Nine of these 17 patients had surgical treatment: bilateral hip arthroplasty in five and unilateral joint replacement in four. The mean age at the first arthroplasty was 41 years (range 25–63). Fifty per cent of these patients required hip arthroplasty within 5 years after the onset of hip joint symptoms. Other procedures performed in these nine patients included fusion of C1-2 for cervical spine instability in one, unilateral knee arthroplasty in two, and bilateral knee arthroplasty in two. In comparison, of the 472 patients with PsA who did not have hip arthropathy, only six required knee arthroplasty.

DISCUSSION

Our cohort study of 504 patients with PsA demonstrates that even in a referral centre, symptomatic hip joint disease is not

common, occurring in <7% of patients followed up for a median of 5 years. However, the patients affected had substantial orthopaedic morbidity, which included total hip arthroplasty at a young age (fig 1). In the patients available for long term follow up, the clinical illness progressed rapidly, with half of the affected patients requiring arthroplasty within 5 years after the onset of hip symptoms. In addition, patients with severe hip joint disease are more likely to require total knee arthroplasty than those without hip arthropathy.

Patients with onset of PsA before age 30 appear most at risk, especially if they have evidence of axial skeletal involvement with psoriatic spondylitis. Other characteristics of PsA, such as the pattern of peripheral synovitis, DIP joint disease, dactylitis, or enthesitis, do not identify people at risk for hip joint disease. The results of this study support earlier observations that hip joint disease is an uncommon but major complication of spondyloarthropathy.^{2 7 8}

Estimates of the prevalence of hip disease in PsA vary with the referral characteristics of the patient population. The characteristics of patients with PsA seen in our tertiary referral practice may not be the same as those encountered in other settings. In a 10 year community based epidemiological study from our local practice in Olmsted County, Minnesota, one psoriatic incident case out of 66 required joint arthroplasty.⁹ Of the patients with PsA diagnosed in a general population, 6% have manifestations of psoriatic spondylitis. This small group would be the one most at risk and in need of careful screening for hip joint disease.

Our patients reported symptoms of hip disease sufficiently pronounced to warrant radiographic evaluation and the diagnosis of definite arthropathy. However, the patients were not uniformly screened radiographically to identify sacroiliitis or spondylitis. With screening for all patients, the prevalence of radiographic sacroiliitis ranges from 5% to 80%.^{2 8 10–14} The wide range reflects selection factors such as sex, grade of radiographic sacroiliitis, and specialty clinic or hospital referral cases inherent in the study groups. If symptoms or examination findings are used to define possible psoriatic spondyloarthropathy, up to 44% of patients in a referral clinic who have PsA may be at risk for hip joint involvement.¹³ A larger group of patients may have hip synovitis, but they will only be identified by more sensitive evaluation methods such as magnetic resonance imaging.

The results of our study suggest that a potentially small period of time exists for medical therapeutic intervention in patients who have symptoms of hip joint disease. None of the reported therapeutic trials with methotrexate or sulfasalazine in PsA have specifically indicated whether hip synovitis responds to such treatment. Sulfasalazine has been shown in randomised controlled clinical trials to have minimal clinical effect on the axial disease of PsA.^{15 16} The strong association of symptomatic hip disease with psoriatic spondylitis suggests that alternative treatments such as anti-tumour necrosis factor should be considered early in the development of hip synovitis.¹⁷ Specific intervention trials will be required to determine whether the progression of this complication of PsA can be arrested.

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Accepted 28 December 2004

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