Axial Disease in Psoriatic Arthritis

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The definition of axial disease in psoriatic arthritis has varied from isolated unilateral grade 2 sacroiliitis to criteria similar to those used for ankylosing spondylitis. Depending on the definition used, the prevalence of axial disease varies from 25% to 70% of patients with psoriatic arthritis. This article reviews the prevalence, clinical and radiologic features, pathogenesis, and treatment of psoriatic spondylitis.

Introduction
Psoriatic arthritis (PsA) has been defined as an inflammatory arthritis associated with psoriasis. Early descriptions by Wright [1] and Wright and Moll [2] recognized the presence of inflammatory back disease as one of the patterns of PsA. Although isolated spondylitis among patients with psoriasis was rare—occurring in less than 5% of patients—many additional patients had spinal disease together with peripheral arthritis. A debate on the uniqueness of PsA has centered on the question of whether patients with inflammatory back disease and psoriasis represented ankylosing spondylitis with psoriasis or psoriatic spondylitis [3•]. The identification of a unique pattern of psoriatic spondylitis has nonetheless emerged as an entity.

Definition of Axial Disease in Psoriatic Arthritis
The definition of axial disease in PsA has been unclear. Should only patients with symptomatic back pain and limitation of movement be included? Should patients with even one abnormal sacroiliac joint be included? What about patients with isolated syndesmophytes? These have all been reported to represent psoriatic spondylitis in the literature. Should physicians use the European Spondyloarthropathy Study Group (ESSG) criteria [4] as the standard, even though these criteria have not shown good specificity and sensitivity for PsA [5•,6•]? Taylor et al. [7•] outlined the difficulties in the clinical description of PsA and commented on the insensitivity of the clinical examination. They also reviewed the differences noted among patients with PsA, ankylosing spondylitis, inflammatory bowel disease, and reactive arthritis and suggest that in order to capture the totality of axial manifestations in PsA, researchers must include symptoms and radiographic changes of the spine and the sacroiliac joints.

In the literature, studies have included different definitions of spinal disease in PsA, varying from the presence of isolated radiographic changes of unilateral sacroiliitis or syndesmophytes to the New York criteria definition of ankylosing spondylitis. Because patients with PsA are not as tender as patients with rheumatoid arthritis [8] and not as symptomatic as patients with ankylosing spondylitis [9], isolated radiographic features may reasonably be included in the definition of psoriatic spondylitis.

Prevalence of Psoriatic Spondylitis
As noted above, no widely accepted definition of axial involvement in PsA exists; therefore, estimates of disease prevalence vary. Three population-based studies reported on the prevalence of spondyloarthritis including PsA in the past 3 years [10–12]. In Greece, Trontzas et al. [10] clinically assessed 10,647 individuals. Using the ESSG criteria, they estimated the prevalence of PsA in Greece to be 0.17%. Of the 12 individuals diagnosed with PsA, eight had sacroiliitis, inflammatory back pain, or both. A similar prevalence estimate of 0.19% was found in France [11]. This population-based study was based on a telephone questionnaire of over 15,000 households. Diagnosis was confirmed by a rheumatologist according to the ESSG criteria. Of the 12 patients identified with PsA, eight had evidence of spondylitis by either clinical or radiologic features. A much higher prevalence of PsA was detected in a recent study from Italy, using questionnaires and rheumatologic confirmation, also with the ESSG criteria [12]. The estimated prevalence of PsA in Italy was 0.37%.

Among patients with PsA, the prevalence of spondylitis has varied from 25% to 70%, depending on the inclusion criteria, as well as the timing of the evaluation. Thus, Hanly et al. [13] identified spondylitis in 52 of 220 (23.6%) patients at entry into a longitudinal observational cohort. However, a subsequent study from the same cohort using longitudinal data found that 194 of 377 (51.5%) patients had a spondyloarthritis at their last visit [14].
Lambert and Wright [15] identified spondylitis in 40% of their patients with PsA. Battistone et al. [16] studied 222 patients with PsA entering a drug trial. All patients had psoriasis and peripheral arthritis with average disease duration of 12 years. The prevalence of radiographic evidence of sacroiliitis (grade 2 or higher) was 78%; 71% of these had grade 3 disease. A recent study of 92 patients with PsA defined psoriatic spondylitis on the basis of at least unilateral grade 2 sacroiliitis and identified 44.6% with axial disease [17].

Clinical Picture of Spinal Disease in PsA
Lambert and Wright [15] reviewed 130 patients with PsA and identified spondylitis in 40% of them. Although not all patients had radiographs, 51 of them had complete sets of radiographs of the spine and sacroiliac joints. Researchers noted sacroiliitis in 21% of the patients (12 men and 10 women), and it occurred among patients with primarily spinal involvement and patients with peripheral arthritis. They found anterior syndesmophytes alone in the cervical spine and noted lateral syndesmophytes in the lower thoracic and lumbar spine. Syndesmophytes were present in 18 patients without radiologic evidence of sacroiliitis. Only three patients had bamboo spine. Patients with spondylitis without peripheral arthritis tended to be male with less nail dystrophy, but iritis was common, and they commonly presented with restriction of mobility. HLA-B27 was common, and 86% of these patients fulfilled New York criteria for ankylosing spondylitis [18]. Patients with sacroiliitis and peripheral arthritis were older and had longer disease duration of both skin and joint disease, and only 21% of them fulfilled New York criteria for ankylosing spondylitis. Patients with syndesmophytes without sacroiliitis resembled those who had sacroiliitis in their clinical features but had a greater prevalence of nail lesions.

Scarpa et al. [19] described the clinical spectrum of psoriatic spondylitis based on 43 patients with spondylitis (19 women and 24 men, mean age 41 years). Of the 43 patients, 22 had pure spondylitis, eight had spondylitis with distal arthritis, and 13 had spondylitis with symmetrical polyarthritis. In the first group (patients with pure spondylitis), there was a male preponderance (15 men, seven women), shorter duration of psoriasis, and higher frequency of sacroiliitis (68%). In addition, investigators found radiographic evidence of syndesmophytes that tended to be nonmarginal, unilateral, in the lumbar spine in 75% of the patients, and less frequently in the thoracic and cervical spine. In 23% of these patients, enthesitis was documented. HLA-B27 was documented in 54% of the patients. In the second group (patients with spondylitis with distal arthritis), investigators found a female preponderance (five women, three men). Although patients in this group initially presented with distal joint disease, they later developed other joint involvement. Researchers found no radiologic evidence of sacroiliitis, but 62% of the patients demonstrated syndesmophytes in the cervical spine, 50% in the thoracic spine, and 75% in the lumbar spine. Enthesitis was documented in 40% of the patients. None had HLA-B27. One questions whether some of these patients had diffuse idiopathic skeletal hyperostosis rather than spondylitis. The third and final group included seven women and six men. These patients had polyarticular disease from the outset. Their spinal disease manifested with cervical disease in 23%, thoracic disease in 46%, and lumbar disease in 69%. Nongormal and asymmetric syndesmophytes were typical. Unilateral sacroiliitis was noted in two patients who were HLA-B27 positive.

Hanly et al. [13] identified patients with clinical or radiologic evidence of spinal disease at their initial presentation to an observational cohort study of PsA and who had follow-up for at least 30 months. Clinical criteria for spinal involvement included: inflammatory neck pain or stiffness, inflammatory back pain or stiffness, and evidence of clinical sacroiliitis (Gaenslen test, Patrick-FABER test, or direct compression). Radiologic criteria included the presence of sacroiliitis, at least grade 2 according to the New York criteria [18]. Researchers identified 52 patients (23.6%) from a total of 220 patients attending the clinic. They found a slight male predominance (30 males, 22 females) with a mean age of 44 years and mean disease duration of 8 years. The mean follow-up was 57 months. Grade 2 or more sacroiliitis was documented in 24 patients; of the 22 patients who had syndesmophytes, only 13 had definite sacroiliitis and two had normal sacroiliac joints. Spinal mobility was preserved in these patients despite the fact that there was radiologic progression in terms of new syndesmophytes and new or increased sacroiliitis grade.

A subsequent study from the same cohort defined psoriatic spondylitis by the presence of inflammatory back pain and stiffness, sacroiliitis on physical examination, radiographic evidence of grade 2 sacroiliitis or greater, and classical or paramarginal syndesmophytes on spinal radiographs [14]. The researchers identified 82 women and 112 men followed at the PsA Clinic according to a standard protocol, and they performed a logistic regression analysis to look for variables that discriminated between men and women with this condition. No differences in type of peripheral arthritis, degree of damage, or medication were noted between the two groups. However, they found some evidence for more advanced spondyloarthitis in men. No differences were seen in the frequency of HLA-B27 or any of the PsA-related HLA antigens. They concluded that there may be gender-related differences in the expression of psoriatic spondyloarthritis unrelated to HLA antigens.

A study of a smaller group of 100 Spanish patients with psoriatic spondylitis (63 men and 37 women), concluded that the extent of the spondylitic process was quite similar between the two, although women showed poorer functional performance and more aggressive peripheral disease [20].