Editorial

Assessment of Enthesitis in Psoriatic Arthritis

There has been an increasing focus on enthesitis in psoriatic arthritis (PsA). Enthesitis, defined as inflammation at the insertion of tendons and ligaments into bone, has been proposed as the primary pathological lesion of PsA, and this hypothesis has received support from animal models that have focused on the enthesis in spondyloarthropathy-like disease[1,2]. Enthesitis is part of the entry "stem" for the ClASsification for Psoriatic ARthritis criteria (CASPAR) criteria, although it must be emphasized that only a few cases of PsA had isolated entheseal involvement in that study[3].

Yet the clinical evaluation of enthesitis remains a vexing problem. When delivering educational symposia, I am often asked by dermatology and rheumatology colleagues how to assess and treat enthesitis. To the dermatologists I say look only at the Achilles insertion because (1) it is readily identifiable, (2) it is the major enthesis of the body, and (3) involvement is quite specific for spondyloarthropathy (SpA). I caution against misinterpreting a fusiform swelling of the Achilles tendon 5–10 cm proximal to the insertion as insertional tendinitis — Achilles paratendinitis is quite common and mostly unrelated to SpA. To the rheumatologist I give the same advice, but also advise using a simple enthesitis index for assessment, such as the Leeds enthesitis index, in which the patient is queried about pain when pressure is applied at each lateral epicondyle, medial femoral condyle, and Achilles tendon insertion. I warn about overinterpreting pure entheseal disease without arthritis for 2 reasons. First, there is a consistently poor relationship between what we think is enthesitis clinically and what ultrasound (US) reveals; and second, other conditions may mimic this condition, particularly where allodynia is a common feature, such as fibromyalgia (FM). We cannot be too reliant on clinical examination of enthesitis as a marker of underlying disease except perhaps at the Achilles insertion.

In this issue of *The Journal*, Macchioni and colleagues provide some further insights[4]. In a well-designed multicenter study they examined entheses of patients with PsA, psoriasis, and FM, both by clinical examination and with US. They found a higher prevalence of entheseal tenderness in FM but more enthesitis using US in PsA and psoriasis. Overall, B-mode US changes were common, particularly around the knee, with power Doppler abnormalities being less frequent across the 3 groups of patients. Therefore, is my advice to clinicians to rely only on the Achilles tendon justified by this report? No, because clinically an equal proportion of patients with PsA and FM had tenderness at the Achilles entheseal insertion; and yes, because power Doppler abnormalities at the Achilles (at cortical bone insertion, pre-insertional area, and body of tendon) were found much more frequently in PsA.

What are the strengths and weaknesses of this study? The authors correctly state that because none of the patients with PsA were taking disease-modifying drugs or steroids, it is likely that they represent a milder spectrum of disease, and this is reflected in the 28-joint count Disease Activity Score (DAS28)[4]. Nor do we have data on skin severity, an important omission in any study of PsA and psoriasis. It would also have been useful to have nail data, because previous reports have found more enthesitis in those with nail involvement. And we have to assume that the Maastricht Ankylosing Spondylitis Enthesitis Score was properly assessed, because this is not clear from the Methods section. It would also have been helpful to have a group of healthy controls to have context for the clinical and US findings. On the positive side, this was a large study, and given the difficulties of standardizing US assessment, the authors must be applauded for trying to make the scan technique as uniform as possible. However, it would have also been appropriate to try to standardize the clinical assessments. The DAS28 score is inappropriate for assessing joint disease activity in PsA because joints below the knee are not counted[5]. And the authors also correctly point out that the groups were not matched for age, sex, and body mass index, all of which can influence US scores, although regression analysis allowed for these differences[4].

How does this study fit with others in the field? A relevant comparison is the study by Højgaard and colleagues[6]. They

See Enthesitis in psoriatic disease and FM, *page 904*

assessed the presence of widespread pain (WP), using the validated WP index and other patient-reported and clinical (tender point) features of central sensitization, and examined the effect of WP on achieving minimal disease activity in PsA. WP was found frequently in PsA and correlated with other measures of disease activity, including a clinical enthesitis score, but not US scores of enthesitis. Interestingly, more tenderness was found at all enthesis sites in patients with WP, including those around the heel. The authors hypothesize that inflammatory arthritis can cause peripheral and central nociceptive sensitization, thus leading to WP[6]. In the same way, WP may resolve once the inflammatory arthritis has been treated, emphasizing the evanescence of this condition in some people. As a corollary to this, interventional studies have consistently shown concurrent improvement in enthesitis scores along with improvement in other indices of disease activity: without US we do not know whether this is a true improvement in enthesitis or a decrease in peripheral pain sensitivity as the inflammatory disease elsewhere improves. In view of this I do not think it really matters which clinical enthesitis index is used, because none of them reliably represents underlying, US-confirmed enthesitis.

To help us distinguish "true" enthesitis from allodynia, Marchesoni and colleagues have suggested using other clinical features of PsA and FM[7]. They examined 266 patients with PsA and 120 patients with FM and found that 6 or more "somatic" symptoms and 8 or more tender points were the best predictors of FM in this mixed population.

Might we improve the accuracy of our examinations for this clinical feature in PsA? We have previously suggested that if swelling, as well as tenderness, is present at the enthesis then it is more likely to be associated with US-demonstrated enthesitis[8]. However, swelling is infrequently seen at the enthesis, and is hard to detect at entheses around the shoulder, pelvis, and knee, particularly if the person is obese. I have also advocated stressing the enthesis mechanically, by opposing the appropriate muscle contraction, to improve the specificity of clinical examination[8]. This is easy to do at the lateral epicondyle of the humerus, the insertion of supraspinatus, the quadriceps, and at the Achilles, but less easy to do elsewhere and especially if the insertion is purely ligamentous.

So how should we move forward with clinical assessment of enthesitis in SpA? Clearly, tenderness at the enthesis is not a reliable sign of underlying enthesitis, as defined by US. I would certainly be wary of making a diagnosis of PsA on the grounds of clinically assessed enthesitis alone, and wary of overinterpreting enthesitis scores in people with established disease. Moreover, the clinician cannot solely rely on US — it must be remembered that US enthesitis has been found in healthy people, people with psoriasis without musculoskeletal symptoms (where it has been argued to be a pre-disease lesion), and patients with rheumatoid arthritis, systemic lupus erythematosus, and now FM[9,10]. So, extending the theory of the pathogenesis of PsA into the clinical realm by physical examination alone remains for me an enigma still to be solved.

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