

CONTINUING EDUCATION PROGRAM: FOCUS...

Sacroiliac joints imaging in axial spondyloarthritis

J.-B. Pialat^{a,*}, L. Di Marco^b, A. Feydy^c, C. Peyron^a,
B. Porta^a, P.-H. Himpens^a, A. Ltaief-Boudrigua^a,
S. Aubry^d

^a Service de radiologie Pavillon B, hôpital Édouard-Herriot, université Claude-Bernard Lyon 1, hospices civils de Lyon, 5, place d'Arsonval, 69437 Lyon, France

^b Service de radiologie, hôpital François-Mitterrand, 21079 Dijon, France

^c Service de radiologie B, hôpital Cochin, université Paris-Descartes, AP-HP, 75014 Paris, France

^d Service d'imagerie ostéoarticulaire, université de Franche-Comté, CHRU de Besançon, 25030 Besançon, France

KEYWORDS

Spondyloarthritis;
Sacroiliac joint;
Magnetic resonance
imaging;
CT scanner;
Sacroiliitis

Abstract Imaging of the sacroiliac joints is the key point in diagnosing and classifying spondyloarthritis. Since the integration of MRI criteria to the Assessment of Spondyloarthritis Society (ASAS) classification in 2009, the attention was focused on the presence of bone marrow edema to characterize sacroiliitis. However, returning to basics and analysing structural signs is of utmost importance to avoid overdiagnosis of spondyloarthritis.

© 2016 Éditions françaises de radiologie. Published by Elsevier Masson SAS. All rights reserved.

Current concepts on spondyloarthritis

The terms spondyloarthritis (SpA), spondylarthritides and spondyloarthropathy include a number of pathologies grouped under a common name because of their similarities: ankylosing spondylitis, spondyloarthritis associated with psoriatic arthritis, inflammatory bowel disease, reactive arthritis and undifferentiated spondyloarthritis. Synovitis acne pustulosis hyperostosis osteitis (SAPHO) syndrome is frequently included in the spondyloarthropathy group but is often considered separately since its presentation is different. The HLA-B27 antigen is positive for 90% of the case [1], and clinical presentations are quite evocative:

* Corresponding author.

E-mail address: Jean-baptiste.pialat@chu-lyon.fr (J.-B. Pialat).

- axial forms of SpA affect the sacroiliac joints (SIJ) and the spine and are most common in young adults, causing chronic low back and buttock pain;
- peripheral forms of SpA which themselves are divided in two forms: an articular form with asymmetric oligoarthritis and a form involving specifically the enthesis. Both forms generally predominate in the lower limbs.

Historically, in adults with SpA, attention has been focused on the SIJ. Almost systematic in axial forms, they were rapidly integrated in the first diagnostic criteria. In 1984, *modified New-York criteria* included radiological involvement of the SIJ (Table 1). Radiological findings were considered as positive for at least bilateral grade 2 or unilateral grade 3 sacroiliitis [2]. These criteria on plain radiographs however have limited diagnosis performance leading to a diagnosis delayed 5 to 10 years after the onset of inflammatory pain.

Lately, the concepts on SpA have somewhat evolved, and in 2009, the classification criteria from the International Assessment of Spondyloarthritis Society group were created: the ASAS classification. This classification still includes the sacroiliac abnormalities, but this time assessed by either plain radiographs or MRI [3]. The use of MRI is very interesting: since very sensitive to inflammatory edema, it allows earlier detection of the disease. This cross-sectional imaging technique also overcomes limitations induced by superposition and allows a good analysis of associated morphological abnormalities. The identification of sacroiliitis proven by X-ray or MRI has become a fundamental criterion for the axial SpA classification since only one other associated criterion is necessary to assert the diagnosis of SpA (Fig. 1). MRI has thus allowed to re-classify “non-radiographic” SpA in patients with no radiological sign of SpA but with an already positive MRI [4]. These ASAS criteria however comprise another diagnostic arm, without sacroiliitis: it is then necessary to have a positive HLA-B27 associated with at least two other criteria (Fig. 1). This arm actually includes “non-radiographic” forms of SpA with negative MRI.

The current issue of sacroiliac joints imaging is to find a balance between the sensitivity of detection and characterization of pathological images. Indeed, besides SpA, other pathologies, including degenerative diseases can affect the

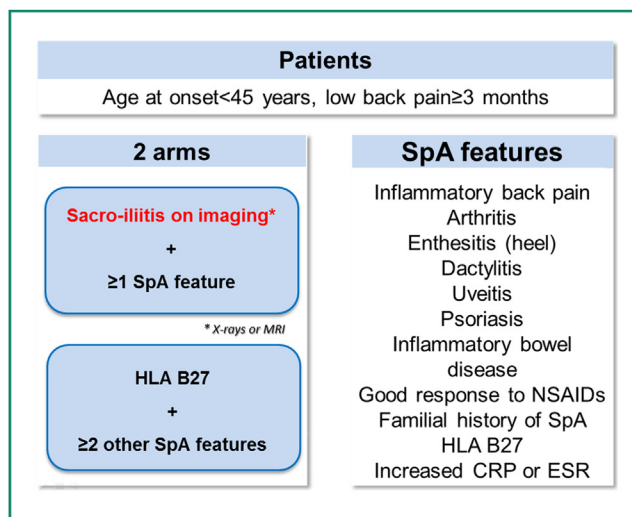


Figure 1. Assessment of spondyloarthritis international society group (ASAS) classification criteria of axial spondyloarthritis.

SIJ and lead to bone edema (BME). The legitimate desire of clinicians to treat patients as early as possible, the use of biotherapies with their adverse effects and financial costs currently challenge the interpretation of imaging modalities, MRI especially. Moreover, current ASAS criteria only fit into the definition of sacroiliitis the presence of BME on MRI. Indeed, other structural or inflammatory signs haven’t yet found their place in these criteria, even though they are a major foundation in imaging to characterize inflammatory sacroiliitis and to distinguish them from other differential diagnoses. It is therefore essential to insist on the radiological signs evocative of SpA, to master the criteria that are necessary to diagnose sacroiliitis, to know pitfalls and differential diagnoses that can mimic an inflammatory SpA and to understand the place of imaging modalities in monitoring patients with SpA.

The imaging of sacroiliitis in spondyloarthritis: back to basics

Generalities

- To simplify, SpA evolves in three phases:
- firstly, an inflammation beginning at the enthesis and capable of inducing joint synovitis and BME;
 - secondly, various amounts of erosive bone remodeling;
 - and finally, a “healing” process with variable proliferation of bone construction or ankylosis whose processes and linkages with earlier phases are still far from being fully clarified.

An imaging test may be performed at any stage of the disease, but SpA evolves in successive spurts and at various locations. It is therefore common to find a combination of signs of these different evolutionary phases.

These abnormalities appear to areas of enthesis of the SIJ: in the subchondral bone of the cartilaginous portion (which is thinner on the iliac than on the sacral side of the SIJ), and at capsular insertions sites or at the ligamentous

Table 1 Grading of radiological signs used in the modified New York classification. Sacroiliitis is considered as positive for bilateral grade ≥ 2 or unilateral grade ≥ 3.

Grade	Abnormality	Description
Grade 1	No abnormality	
Grade 2	Minimum abnormality	Small localized areas with erosion or sclerosis, without alteration in the joint width
Grade 3	Unequivocal abnormality	Moderate or advanced sacroiliitis with erosions, evidence of sclerosis, widening, narrowing, or partial ankylosis
Grade 4	Severe abnormality	Total ankylosis

Download English Version:

<https://daneshyari.com/en/article/5578943>

Download Persian Version:

<https://daneshyari.com/article/5578943>

[Daneshyari.com](https://daneshyari.com)