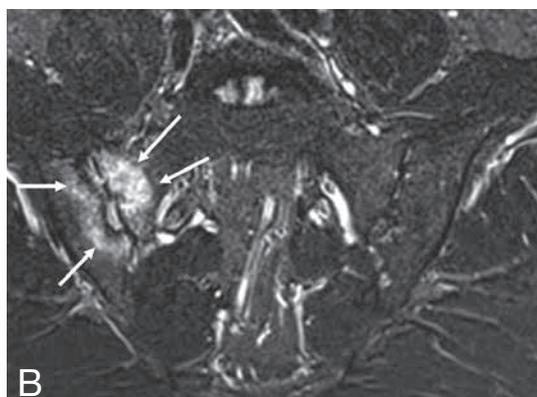
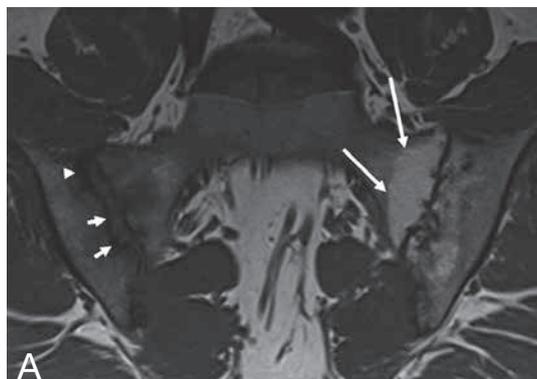


IMAGES IN CLINICAL RADIOLOGY



Active and structural lesions of the sacroiliac joints in spondyloarthritis

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MRI gains importance in early diagnosis of spondyloarthritis as it detects active inflammatory and structural lesions well before radiographic changes become evident. A 'positive' MRI with bone marrow oedema of the sacro-iliac joint is a key criterion in current disease classification systems.

A 36-year-old male was admitted to our department for morning stiffness and chronic buttock pain. There was no significant medical or family history.

MRI of the sacroiliac joints showed active inflammatory as well as structural lesions. T1-weighted MR image (Fig. A) shows structural lesions: erosions and subsequent pseudowidening of the sacroiliac joint (short arrows), subchondral sclerosis (arrowhead) and periarticular fat deposition on the left-hand side (long arrows). No ankylosis was seen. STIR MR image (Fig. B) shows extensive bone marrow oedema on both sides of the right sacroiliac joint (arrows) in keeping with acute sacroiliitis.

DNA testing for detection of HLA-B27 was positive. Diagnosis of undifferentiated spondyloarthritis with active and structural lesions was made. TNF-alpha blocker treatment improved patient mobility and relieved the buttock pain. No follow-up imaging was obtained.

Comment

Seronegative spondyloarthropathy is a group of joint conditions that are not associated with rheumatoid factors, with prevalence

estimated 1.5%. Five subgroups are distinguished: ankylosing spondylitis, reactive arthritis (Reiter's syndrome), psoriatic arthritis, arthritis associated with inflammatory bowel disease and undifferentiated spondyloarthritis.

Sacroiliac joint imaging is important for diagnosing and classifying the disease. MRI sequences include T1-weighted and fat-saturated T2-weighted or STIR images in semicoronal planes along the long axis of the sacrum. There is a growing consensus that there is no role for the use of gadolinium contrast in routine clinical practice.

MRI gains importance since it detects active inflammatory lesions long before radiographic changes become evident. Moreover, MRI plays a key role in the ASAS (Assessment of Spondyloarthritis International Society) classification system for this group of joint conditions: a 'positive' MRI concurrent with at least 1 clinical sign of the disease allows classification as axial spondyloarthritis.

MRI demonstrates active lesions (bone marrow edema, capsulitis, synovitis and enthesitis) as well as structural lesions (erosions, sclerosis, periarticular fat deposition, ankylosis). Of these lesions, only 'bone marrow edema' is regarded a definite sign of a 'positive' MRI for sacroiliitis.

Radiologists should be aware that not all bone marrow oedema reflects sacro-iliitis: differential diagnosis includes sacral insufficiency fracture, tumour, infection (often with extensive soft tissue involvement), degenerative disease and osteitis condensans ilii.

References

1. Sieper J., Rudwaleit M., Baraliakos X., et al.: The assessment of spondyloarthritis international society (ASAS) handbook: a guide to assess spondyloarthritis. *Ann Rheum Dis*, 2009, 68: ii1-ii44.
2. Weber U., Ostergaard M., Lambert R., et al.: The impact of MRI on the clinical management of inflammatory arthritides. *Skeletal Radiol*, 2011, 40: 1153-1173.

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