Comment on: Recommendations for acquisition and interpretation of MRI of the spine and sacroiliac joints in the diagnosis of axial spondyloarthritis in the UK: reply

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Dear Editor, we thank the authors(1) for their interest in our recent paper on the recommendations for acquisition and interpretation of MRI of the spine and sacroiliac joints in patients suspected of having of axial spondyloarthritis (axSpA).(2) These recommendations were formulated following a systematic review of the literature(3) and agreement amongst a multidisciplinary expert group of rheumatologists and radiologists.

We read the cases presented by the authors of this letter with interest. We believe they are atypical for axSpA, clinically and/or radiologically. The cardinal MRI features of axSpA are of subchondral bone marrow oedema/osteitis, enthesitis and erosions, with sclerosis and subcortical fat metaplasia occurring during healing phases, followed ultimately by bone ankylosis. However, even these appearances cannot be taken as diagnostic in the absence of relevant clinical symptomatology. It is important to highlight that clinical history in axSpA is variable and the diagnosis is based on pattern recognition of a combination of features. These may include inflammatory back pain and stiffness, peripheral manifestations (arthritis, dactylitis, enthesitis and tenosynovitis), restriction of spinal mobility and extra-articular manifestations (uveitis, psoriasis and inflammatory bowel disease). It is part of the routine clinical work up to inquire about other clinical features that may suggest an alternative diagnosis, such as history of trauma, surgery, radiculopathy, chronic widespread pain, osteoporosis, fractures, infection, and connective tissue disease symptoms.(4)

Osteoid osteomas typically present during the second decade with progressively increasing pain that is more severe at night, may or may not be related to activity, and is characteristically highly responsive to non-steroidal anti-inflammatory drugs (NSAIDs), usually within less than half an hour.(5) This clinical presentation shares some similarities with axSpA. Imaging appearances however, can be distinctive as shown in the images provided, where bone marrow oedema appears as intraosseous rather than in a subcortical distribution as seen in axSpA. This image therefore is not a typical mimic of axSpA sacroiliitis. In cases such as the one presented, there is general agreement that where osteoid osteomas are suspected, enhancement may be helpful, but that high resolution CT scanning is the key diagnostic tool.(5, 6)

In the second case, the imaging appearances are of a septic arthritis, with the pathology focused on the joint space. There is also extensive surrounding soft tissue oedema. Again, these appearances should not be considered a mimic of axSpA sacroiliitis, which being primarily an osteitis, does not evoke surrounding soft tissue changes even when very acute. Very early septic sacroiliitis could mimic unilateral sacroiliitis radiologically but the clinical history is distinctive. The imaging appearances are then of subcortical bone marrow oedema and increased T2 signal in the joint space, but enhancement of the joint and subcortical bone would not differentiate between these conditions. It is the clinical context and symptoms, together with serological findings including leukocytosis and neutrophilia, that are more likely to help distinguish these disease processes, rather than enhancement per se.

SIJ MRI is a valuable tool in the workup of patients with chronic back pain suspected to have axSpA. However, it does not replace careful clinical evaluation and differential diagnostic considerations, including not only clinical and laboratory features but also demographic and activity related considerations such as age, body mass index, profession, epidemiological context and level of sport activity. Furthermore, contextual interpretation of active and structural MRI lesions simultaneously is key to differentiate axSpA sacroiliitis from other conditions.

The literature supporting the use of non-contrast enhanced scans where axSpA related sacroiliitis is suspected is highly persuasive.(7-9) Our recommendations do not cover the imaging of other conditions that occur in the sacrum, posterior ilia or the sacroiliac joints. However, as outlined above, in general careful scrutiny of the unenhanced images will show that the appearances of these conditions are not ‘mimics’ of axSpA sacroiliitis. Further, good communication between rheumatologists, physicians and radiologists should support consensus diagnosis in the clinical setting.

Acknowledgements

Margaret A Hall-Craggs and Pedro M Machado and are supported by the National Institute for Health Research (NIHR) University College London Hospitals (UCLH) Biomedical Research Centre (BRC). Helena Marzo-Ortega is supported by the NIHR Leeds BRC. The views expressed are those of the authors and not necessarily those of the (UK) National Health Service (NHS), the NIHR, or the (UK) Department of Health.

Disclosures

The British Society for Spondyloarthritis (BRITSpA) is a registered charity in England and Wales. H.M.O. has received grants and/or honoraria from Abbvie, Celgene, Eli-Lilly, Janssen, MSD, Novartis, Pfizer and UCB. P.M.M. has received consulting/speaker's fees from Abbvie, BMS, Celgene, Janssen, MSD, Novartis, Pfizer, Roche and UCB. The other authors have declared no conflicts of interest.

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