Discovering four sacroiliac joints in a patient with spondylarthritis

Sirs,

Axial spondylarthritis (ax-SpA) comprises a group of chronic inflammatory diseases, affecting young adults of both sexes (1). Sacroiliac joints (SIJs) are the first articulations involved in patients with ax-SpA. A 43-year-old man with a history of psoriasis since the age of 24, presented with low back pain and morning stiffness for the last two years. Past medical and family history were unremarkable, he was no smoker and received no medication. Physical examination revealed features of psoriasis over the elbows and knees bilaterally. The rest of clinical examination was negative. Laboratory evaluation showed high C-reactive protein 12 mg/L (normal value <5), while the rest of laboratory tests were within normal limits. Human leucocyte antigen (HLA)-B27 was positive. Conventional radiographs of the pelvis revealed para-articular sclerosis in two separate joint spaces, visible on both sides, creating the appearance of four SIJs, two in each side (internal and external) (Fig. 1A). Computed tomography (CT) scan of the pelvis demonstrated the presence of four SIJs, with subchondral sclerosis (Fig. 1B-C). Magnetic resonance imaging (MRI) depicted subchondral bone marrow oedema on STIR affecting all SIJs, internal and external of both sides (Fig. 1D-E). These findings represent a picture of active sacroiliitis affecting four SIJs in a patient with psoriasis (1).

The SIJs are the joints between the sacrum and the ileum bones of the pelvis that have a paired C- or L-shape capable of a small amount of movement. In humans, there are two SIJs, one on the left and one on the right, that often match each other, but there are anatomical variants from person to person. Thus, accessory SIJs have been described in several individuals (2). The aetiology of accessory SIJs in the same patient is obscure. Some reports suggest a congenital variant with true diarthrodial joint lined by hyaline articular cartilage. However, since there is an increased prevalence of accessory SIJs with age (2), while no accessory SIJs were reported in the paediatric populations (3), it is more likely that SIJs acquired are pseudo articulations, formed secondary to altered biomechanical stress with predominant fibrocartilaginous structure (4). The accessory SIJs are described as an additional articulation between the sacrum and the ilium, usually located posterior to the main synovial portion of the joint. In the present case, two separate joint spaces are clearly visible on both sides, creating the appearance of four joints spaces on radiographs (Fig. 1). This is not due to an accessory SIJ but is rather a result of the presence of two distinct joint spaces oriented tangentially on the x-rays on one side. This phenomenon is probably an anatomical variation of the SIJs (5). To our knowledge, this is a unique reported case of a patient with psoriatic SpA, having four SIJs all affected by the disease process. Our patient was treated with adalimumab 40 mg every two weeks with excellent response.

Acknowledgement

We would like to thank Mrs Chrysoula Arvaniti for her excellent secretarial assistance.

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Competing interests: none declared.

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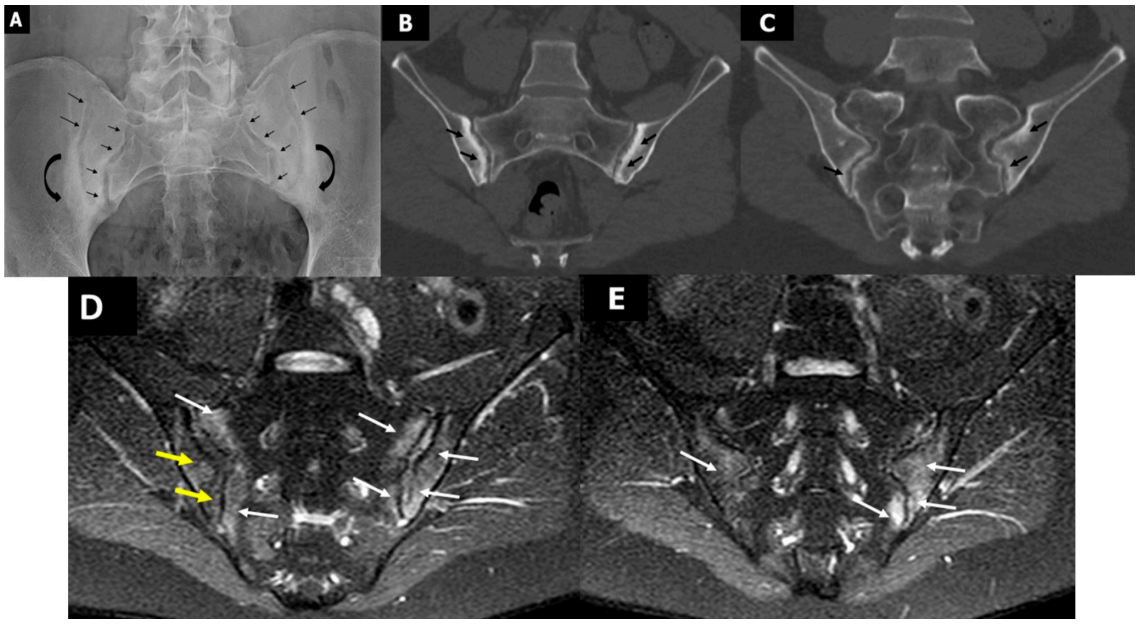

Fig. 1. A: Radiograph of the SIJs shows four SIJs (arrows): para-articular sclerosis on both iliac sides with evidence of ankyloses mostly on the external (curved arrows).
B: CT. Four SIJs external and (**C**) internal: Para-articular sclerosis of the SIJs ilium side, shown as hyperdense signal (arrows).
D: MRI. Oblique transversal STIR images of the four SIJs external and **(E)** internal: Para-articular bone marrow oedema, shown as hyperintense signal on STIR (arrows) and para-articular sclerosis of the SIJs ilium side, shown as hypointense signal (yellow arrows).