

LETTER

The added value of coronal STIR images in routine magnetic resonance imaging of sciatica

Dear Editor,

The most frequent cause affecting sciatic nerve is its compression due to a herniating lumbar disc. Nonetheless, extraspinal causes of sciatica are rarely diagnosed not only due to their low occurrence but also due to the highly limited depiction of the extraspinal tracts of the lumbar nerve roots using standard magnetic resonance imaging (MRI) protocols of the lumbar spine¹.

A 39-year-old male patient suffering from sciatica was admitted with electromyographically confirmed radiculopathy of the fifth lumbar and the first sacral nerve on the right. MRI of the lumbar spine done in axial and sagittal planes (Figure 1A and B) showed circumscribed areas of postinflammatory changes in anterosuperior corners of the lumbar vertebral bodies. Coronal short tau inversion recovery (STIR) tomograms (Figure 1C) parallel to the sacroiliac joints depicted edematous changes of the bone marrow of the right sacral wing and the right lumbosacral nerve trunk. The diagnosis of spondyloarthritis with right sacroiliitis and right lumbosacral nerve trunk irritation was made.

The cases of sacroiliitis causing sciatica have been previously reported, and it is believed that their connection could be explained by referred pain or inflammatory mediator release². Standard MRI protocols for evaluating the lumbar spine for pain and radiculopathy recommend using T1W and T2W images in axial and sagittal planes leaving sacroiliac joints uncovered³. The advantage of using STIR sequences is that they offer a fat signal suppression technique with high susceptibility to increased water content in osseous and soft tissues. Early detection of bone marrow edema is of crucial importance for preventing structural changes that result in loss of function². Therefore, we recommend the use of an additional STIR sequence in coronal plane covering sacroiliac joints in evaluating potential pathology in this region that could manifest as sciatica.

References

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Conflict of interest

None.

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Figure 1: Sagittal T1W (A) and T2W (B) magnetic resonance images of the lumbar spine showing hyperintensities (fatty bone marrow degeneration representing postinflammatory changes) of the anterosuperior corners of the lumbar vertebral bodies accompanied by the mild annular disc bulging at L3/4 level. Subsequent coronal short tau inversion recovery (STIR) image parallel to sacroiliac joints (C) shows a hyperintense signal of the right sacral wing (arrow) and the ipsilateral lumbosacral trunk (arrowhead) consistent with bone marrow edema and irritation, respectively.

