Case 16222

Acute Schmorl Node in Lumbar Spine: An Unusual Cause of Back Pain

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Section: Musculoskeletal system
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Imaging Technique: MR
Special Focus: Acute Inflammation Neoplasia Case
Type: Clinical Cases
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Patient: 48 years, female

Clinical History:

A 48-year-old woman presented with severe low backache for 7 days before. Pain was nocturnal and increased with movements. The patient had no previous history of trauma and no neurological abnormalities were noted. She had a medical history of breast cancer.

Imaging Findings:

MR images demonstrated a defect with concentric rim of oedema (hypointense in T1, hyperintense in T2 and STIR) in the inferior endplate of L5 vertebra in relation to herniation of disc material (figures 1a, 1b, 1c). After contrast, there was enhancement of the lesion (figure 2). In addition, there was loss of height and signal intensity of the L5-S1 disc. No fractures, soft tissue masses or either significant findings were observed. The imaging findings were consistent with small Schmörl hernia with acute inflammatory changes.

Discussion:

Schmörl nodes, classically known as intravertebral disc herniations, were first described by Schmörl. It represents a herniation or an extrusion of the intervertebral disc nuclear material through the vertebral body endplate, with displacement of this material into the adjacent vertebral body [1]. Generally, the Schmörl nodes are considered to be a common asymptomatic incidental finding on imaging, especially around the thoracolumbar junction [1, 2, 3]. However, Schmörl nodes, or acute cartilaginous node, can rarely manifest with acute symptoms, most common in the mid to lower lumbar spine [2, 3].

Schmörl nodes in an active phase are characterized by an area of oedema-type T1-hypointense and T2-hyperintense signal intensity in the adjacent vertebral body surrounding the node; this area may have a concentric morphologic structure.

After the administration of gadolinium-, the disk and the peripherally oedema enhance homogeneously for 6 months or more [2].

The differential diagnosis should include infective spondylitis or neoplastic lesion, but acute Schmörl node can be diagnosed by demonstrating herniated disc content, osseous defect involving single end plate, marrow focal edema around the herniated disk (concentric halo) and lack of diffuse disk signal change. The clinical features of infection, a
paraspinal or epidural soft-tissue mass and paraspinal inflammatory changes [2] can help the diagnosis of infective spondylitis.

Management is usually conservative; bed rest, analgesics and bracing being the mainstay of treatment [2, 3].

Take Home Message:
Schmörl nodes or intervertebral disc herniations are commonly seen as an incidental finding on imaging, and they are often asymptomatic. However, acute Schmörl node is a rare entity, that should not be confused with tumour or infection [1].

‘Written informed patient consent for publication has been obtained.’

Differential Diagnosis List: Acute Schmörl Node, spondylitis, metastasis

Final Diagnosis: Acute Schmörl Node

References:


Figure 1

Description: Sagittal T1-weighted images demonstrate schmorl node (arrow) surrounded by bone marrow edema (low signal intensity) Origin: HGU J.M. Morales Meseguer, Department of Radiology, Murcia, España
Description: Sagittal T2-weighted images demonstrate a schmorl node (arrow) surrounded by bone marrow edema (high signal intensity). Origin: HGU J.M. Morales Meseguer, Department of Radiology, Murcia, España

Description: Sagittal STIR demonstrate schmorl node surrounded by bone marrow edema (high signal intensity) Origin: HGU J.M. Morales Meseguer, Department of Radiology, Murcia, España
Figure 2

Description: Sagittal T1-weighted images with fat saturation demonstrate enhancement of both the node and the edematous bone marrow. Origin: HGU J.M. Morales Meseguer, Department of Radiology, Murcia, España.