

IMAGES IN CLINICAL RADIOLOGY



Treats from the heart

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A 48-year old woman complaining of fatigue and lower back pain since several days, presented at the emergency department with anomic aphasia and fever. The conventional radiograph of the knees revealed mild erosive changes in the left medial compartment with effusion and hand radiographs were unremarkable in the painful right hand but showed some joint space narrowing in the left IP-1 joint, whereas the chest radiograph, CT brain were unremarkable. Blood cultures demonstrated a *Staphylococcus aureus* sepsis.

Lumbar spine MR showed an epidural abscess extending from L1 to L5 with posterior dural compression without signs of spondylodiscitis, as can be seen on the sagittal T1 TSE fat saturated image with intravenous administration of gadolinium (arrow Fig. A). Paravertebral extension of infection was seen on the left side at the L5-S1 level with involvement of the musculus erector spinae on the axial T1 TSE fat saturated image with gadolinium (arrow Fig. B).

Transesophageal echocardiography showed vegetations and insufficiency of the mitral valve, consistent with endocarditis. After mitral valve replacement and continuation of antibiotic therapy the patient fully recovered.

Comment

Musculoskeletal symptoms are common in endocarditis. The most common symptom is arthralgia, usually of the larger joints. Secondly, lower back pain can be present, sometimes with irradiating pain mimicking clinical signs of disc extrusion. These symptoms can precede the diagnosis of endocarditis by several months. They often resolve spontaneously after treatment and an inflammatory and/or immune etiology has been postulated in most cases. Nonetheless, infectious embolic spread to the musculoskeletal system should always be considered in endocarditis regardless of appropriate treatment.

The prevalence of endocarditis in patients with spinal infections can be as high as 30%. Depending on the involved compartment, spinal infections can be categorized into three groups: extradural infections (osseous spine, epidural space, facet joints, and paraspinal soft tissues), intradural extramedullary infections and intramedullary infections. The most common pathogen is *S. aureus* (62-67%) followed by *Mycobacterium tuberculosis*. The lower thoracic and lumbar spine is the most common site of involvement. Cord compression is the most common presenting symptom in spinal epidural infection. Epidural abscess is almost always located at the posterior portion of the spinal canal.

The whole spine should be imaged once spinal infection is suspected, so that multiple level disease can be excluded. Focal abscess formation and paravertebral extension are best evaluated with contrast enhanced MR. Plain radiographic evaluation, generally the initial modality used, is of little value. CT may help to demonstrate paraspinal extension and bone destruction. The sensitivity of MRI for extradural infection varies between 91 and 100% and is the modality of choice. Sagittal views can be used to evaluate cranial or caudal extension. MRI signal depends on the contents of the lesion. Frequently, long segment isohyperintense epidural mass lesion with hypointense thickened, displaced dura on both T1- and T2WI can be seen. Cord compression can be easily detected with MRI. Postcontrast images can help in the differentiation of epidural phlegmon from abscess. Phlegmon has no liquid component or pus with almost uniform enhancement. Abscesses have a liquid component with rim enhancement.

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