MR imaging of tuberculous vertebral osteomyelitis: pictorial review

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Abstract Vertebral osteomyelitis is one of the most common manifestations of tuberculosis. Magnetic resonance imaging is considered the main imaging modality for the diagnosis, the demonstration of the extent of the disease, and follow-up studies. Vertebral destruction involving two consecutive levels with sparing of the intervertebral disc, disc herniation into the vertebral body, epidural involvement, and paraspinal abscesses are the most common MRI findings suggestive of tuberculous vertebral osteomyelitis.

Key words MR imaging · Spinal diagnosis · Tuberculosis

Introduction The spine is one of the most commonly involved extrapulmonary sites of tuberculosis (TB). The percentage rate is likely to increase as the number of immunosuppressed patients is increased. The diagnosis remains difficult since the tuberculous infection is indolent. Imaging findings are advanced when the diagnosis is established; however, imaging methods are useful for the evaluation of the disease and prompt diagnosis and treatment are necessary to prevent permanent neurologic damage. Magnetic resonance imaging is valuable in determining the extent of disease. The purpose of this article is to demonstrate and analyze the MR features in TB spondylitis.

Pathophysiology The origin of TB spondylitis is usually hematogenous rather than from involvement via a contiguous paraspinal site. The antero-inferior aspect of the vertebral body is the initial site of infection. The route of infection is controversial. The arterial route of transmission is recognized as the more important [3], although some investigators favor the Batson’s valveless venous vertebral plexus for the spread of TB infections [4].

The intervertebral disc is involved by direct spread from affected neighboring vertebrae or soft tissues [5]. If untreated, the infection spreads from the affected vertebrae into the paraspinal soft tissues or into the adjacent vertebrae via vascular communications or a subligamentous route [6]. Healing phase may progress for up to 14 months. Paravertebral soft tissue masses reach