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Case report

Spinal tuberculosis at the posterior element of spinal column: Case report

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1. Introduction

Spinal tuberculosis (TB) patients comprise up to 50% of all patients afflicted with musculoskeletal tuberculosis. The anterior column is affected in 98% of these cases. These patients develop varying degrees of kyphotic deformity, and 10–47% develop neural complications [1]. In spite of the availability of diagnostic modalities, surgical techniques and effective antituberculosis regimens, spinal TB is still a life-threatening disease, which can cause bony destruction, deformity and neurological deficits [2]. The keys to diagnosing spinal TB are: (1) the recognition that TB is a multifaceted disease and (2) a definitive diagnosis emerges only from strong clinical analysis. The classic spinal TB commences at the anterior aspect of the vertebral body vicinity to the endplate, leading to destruction of adjacent vertebral bodies, intervertebral disc, and soft tissue. However, a small number of cases do not present the characteristics of tuberculous spondylitis. These kinds of atypical spinal TB are rarely reported and are often subject to diagnostic delays and even errors [3]. Since TB is an excellent imitator, and no single pathognomonic finding can differentiate it from other pathologies [4]. In this report, we described a case of spinal tuberculosis of the posterior elements of the spinal column.

2. Case report

2.1. History and physical exam

A 60-year-old woman presented with low back pain, a hump on her upper back and 1 month difficulty in ambulation. She complained of numbness on her right calf and foot after walking and could not particularly tolerate the supine position. 2 years prior to the case consult, she underwent vertebroplasty of the L2 due to an osteoporotic compression fracture. 14 months prior to the case consult she subsequently underwent a corpectomy of L1 and L2 with application of anterior cage L1–L2, posterolateral fusion (PLF) and posterior fixation (PF) from T11 to L4 with the diagnosis of a burst fracture of L1 and cemented L2 secondary to fall (Fig. 1). At that time, she had no sign of infection, including fever, leukocytosis and erythema on the operative scar. Histopathological evaluation revealed degenerative disc and fibrocartilage. There was no history of TB exposure, no recent weight loss, low-grade fever, decreased appetite or night sweats.

On physical examination, fever was not detected. Cough and sputum were also not present. Her breath sounds were clear. Palpation revealed no enlargement of the lymph nodes. Neurologic examination revealed that motor function in both extensor hallucis longus muscles was decreased to a grade of 4/5 and sensory function in touch was decreased in the right L5 dermatome.

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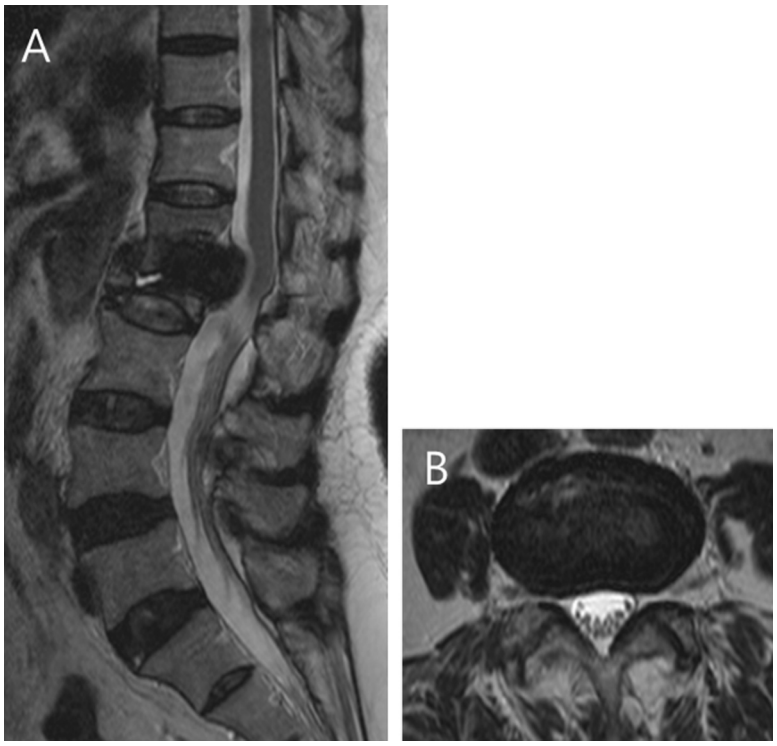

Fig. 1. (a) Sagittal T2W1 demonstrating compression of L1 and L2 vertebral body and retropulsion of cemented bone fragment. (b) Axial T2WI showing degenerative facet arthropathy on the L4–L5.

2.2. Laboratory examinations

Laboratory studies revealed normal hemoglobin and white blood cell count. However, erythrocyte sedimentation rate (ESR; 115, reference 0–9.0 mm/h) and C-reactive protein (CRP; 38.7, reference 0–4.0 mg/dl) level were significantly elevated. All other examinations, including biochemistry, were within the normal range. Both Human Immunodeficiency Virus (HIV) and purified protein derivative (PPD) tests were negative. Chronic inflammatory diseases, such as fungal infections, spinal brucellosis or tuberculosis were included in the differential diagnoses; however, the patient recalled no history of such diseases or close contact with a tuberculosis patient in the past.

2.3. Radiological findings

Further image analysis with chest X-ray and abdominal ultrasound revealed normal findings. Plain radiographs of the thoracolumbar spine demonstrated spondylolisthesis of L4 on L5 with osteolytic changes in the L4–L5 facet joint (Fig. 2). Comparing of previous radiologic images, computed tomography scan revealed posterior displacement of the screws, radiolucency around the screws and osteolytic lesion at the right L4–L5 facet joint (Fig. 3). Magnetic resonance imaging (MRI) with gadolinium contrast revealed an extradural dorsal mass with rim enhancement and dorsal thecal sac compression at the L4–L5 level (Fig. 4). In addition, the presence of the paraveretebral abscess was strongly suggestive of the possible diagnosis of the spinal/vertebral infection (Fig. 5).

2.4. Operation

For diagnostic and therapeutic purposes, a posterior laminectomy with abscess drainage was performed at the L4–L5 level and biopsy specimens were taken. An anterior lumbar interbody fusion (ALIF) was also performed from L2 – S1 and PLF and PF from T9 to the ilium due to pseudarthrosis with instrument failure. Intraoperatively, the right L5 pedicle and lamina were eroded and fragile. Granulated tissues tightly surrounded the right L4 exiting

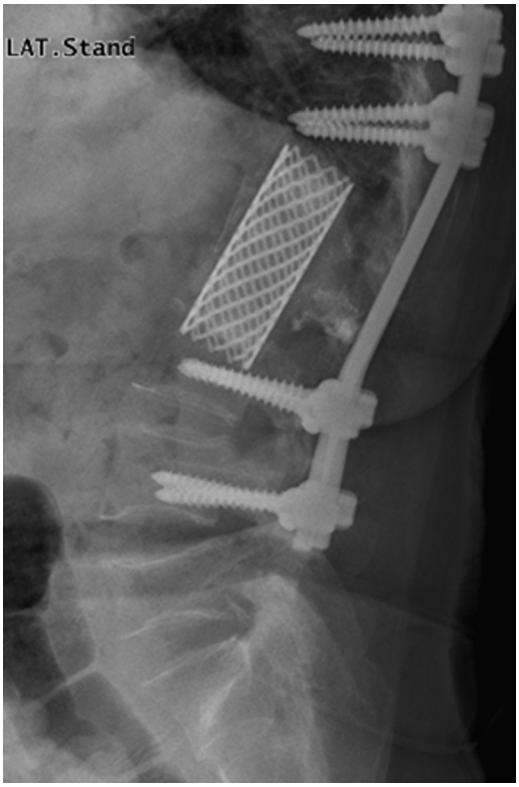

Fig. 2. Lateral lumbar spine radiograph showing spondylolisthesis of L4 on L5.