

L5 Radiculopathy with Neurological Deficit Due To Sacral Insufficiency Fracture

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Sacral insufficiency fractures (SIF) are observed in osteoporotic subjects, with aging, female sex, and corticosteroids as risk factors^{1,2}. Teriparatide may be a therapeutic option in such cases, as well as surgical stabilization in recalcitrant cases³.

A 67-year-old white woman with steroid-dependent polymyalgia rheumatica developed right buttock pain extending down to the right lateral thigh and leg. On physical examination, tenderness was noted in the right sacral area but there was no motor or sensory impairment. Pelvic computer tomography scan and magnetic resonance imaging (MRI) showed a fracture line along the right sacral ala surrounded by an area of marrow edema and swelling of the right L5 root (Figure 1). SIF associated with L5 radiculopathy was diagnosed and the patient was treated by analgesics, bisphosphonate infusion, and finally, sacroplasty. She had persistent pain 1 month later but repeat MRI did not show cement leakage. Twelve months later, she had persistent pelvic pain

radiating in an L5 distribution and motor deficit (right foot dorsiflexion: 3/5). Pelvic MRI showed healing of the fracture with persistent edema of the right L5 root (Figure 2).

Neurologic symptoms associated with SIF are uncommon and occur in 2% of cases^{4,5}. Neurological deficits are exceptional. The mechanisms that may explain neurological involvement include nerve root irritation by the bone edema or the healing process. In general, neurological involvement associated with SIF resolves with the outcome of the fracture^{3,4}. In our case, there were neurological sequelae, explained by persistent neurological irritation due to bone callus.

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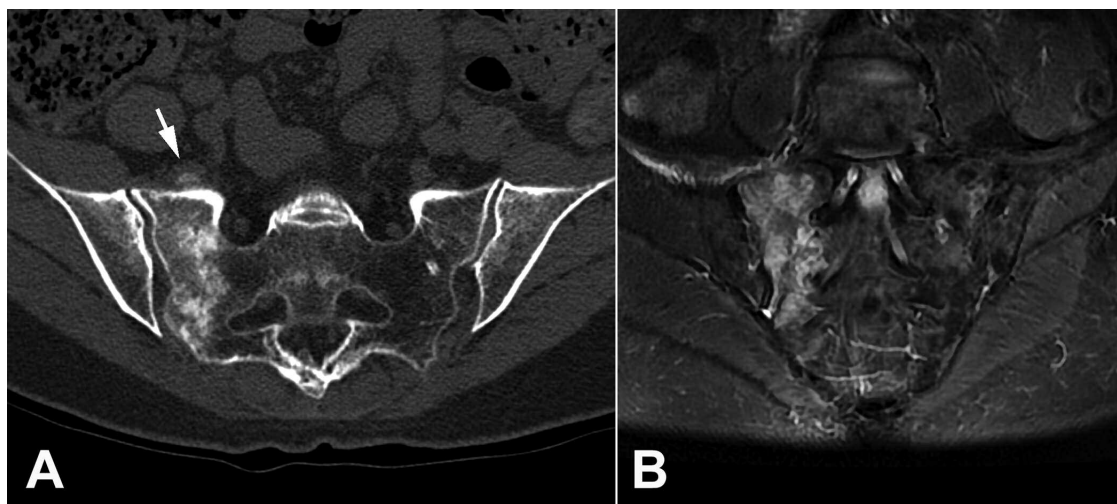


Figure 1. A. Axial CT scan shows a fracture line along with sclerosis of the right sacral ala. Note the fifth lumbar root swelling in contact with bone callus (arrow). B. Coronal STIR MR image reveals bone marrow edema on both sides of the fracture. CT: computed tomography; STIR: short-tau inversion recovery; MR: magnetic resonance.

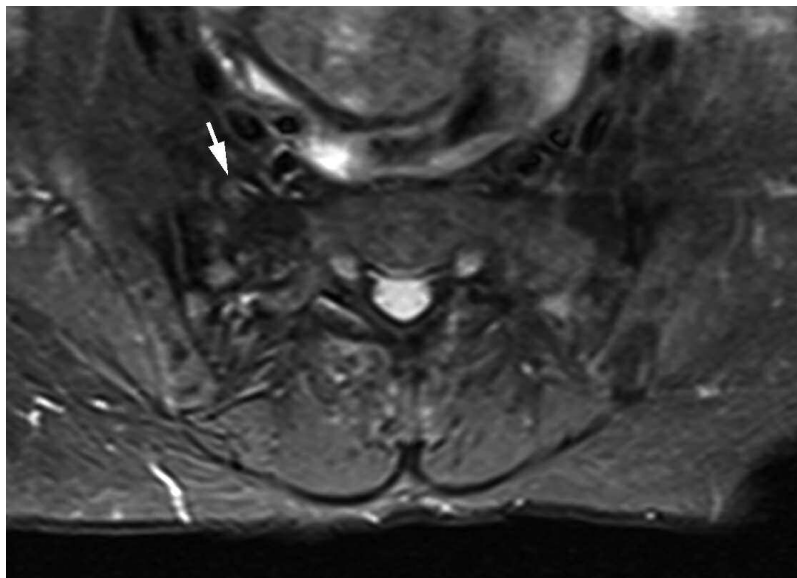


Figure 2. Axial STIR MR image of the sacrum taken 13 months later. While the sacral fracture is healed, edema and swelling of the right L5 root persist (arrow), associated with a linear low-signal image medial to the root consistent with an irritating thorn-shaped callus. STIR: short-tau inversion recovery; MR: magnetic resonance.

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