



# Low back Pain may be the Initial Symptom of Systemic Gout Despite Normouricemia Blood Level

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## Abstract

Low back pain is one of the most common symptoms in current population around the world. Nevertheless, tophaceous deposits in lumbar spine is a very rare condition with very few cases reported in literature. We present a case report of a 52-year-old patient with low back pain, left leg pain and numbness whose serum uric acid level was in normal range. MRI and SPECT images suggested an inflammatory-infectious process focus at L4. After a decompressive laminectomy at L4-L5 level, histological examination showed a chalky material with extensive deposition of amorphous gouty material surrounded by macrophages and foreign-body giant cells (Tophaceous deposits).

**Keywords:** Gout tophus; Lumbar spine; Low back pain; Magnetic resonance imaging

## Introduction

Tophaceous deposits in lumbar spine is a very rare condition with very few cases reported in literature [1-5]. Clinical presentation of spinal gout includes: low back pain, spinal cord or root compression [4]. We present a very uncommon case of a patient with low back pain, left leg pain and numbness without systemic gout and normouricemia.

## Case Presentation

A 52-year-old male caucasian waiter was admitted at our hospital with an acute low back pain, left leg pain and numbness of two weeks duration and a ten-day history of fever in the evening hours. His prior medical history included obesity, hay fever and dust allergy with chronic asthma. Physical examination revealed no fever, no clinical signs of peripheral gout, clear lungs and normal heart sounds. Motor and sensory examination of lower extremities were within normal limits. The initial laboratory workup showed a slightly elevated glucose level, and moderately elevated C-reactive protein level (18,3mg/dl, [normal range: 0,1-0,6]). Serum uric acid level and all other laboratory test were in a normal range. Chest radiographs were unremarkable. Lumbar spine plain radiographs showed degenerative facet arthropathy on vertebral bodies.

Lumbar magnetic resonance imaging (T1-weighted, T2-weighted) revealed a posterior epidural collection from the L3 to the L4 level, extending into the spinal canal, resembling an epidural and facet abscess and paraspinal soft tissue collection. This abnormal structure showed a hypointense signal in T1 and T2 weighted sequences (Figure 1). Intervertebral disks spaces were normal, whereas at L5-S1 the intervertebral disk space was narrowed. No nerve root compression was observed and the medullary conus were normal. Intense enhancement was showed by this collection and adjacent soft tissues after administration of contrast.

Blood cultures were sterile and serological test for Brucella, Borrelia, Salmonella, hepatitis B and C viruses (BHV and CHV) were negative. Mantoux was also negative. Transaxial, sagittal and coronal sections of <sup>67</sup>Ga SPECT images showed an intense abnormal accumulation of radiotracer at the posterior aspects of L4 (Figure 2). Both studies suggested an inflammatory-infectious focus at L4.

Decompressive laminectomy at L4-L5 level was performed and revealed a white cheesy material with spinal canal stenosis and dural sac compression. Histological examination of the samples showed chalky material with extensive deposition of amorphous gouty material surrounded by macrophages and foreign-body giant cells (Figure 3). The patient was discharged from the hospital asymptomatic remaining in stable condition at 2-year follow-up. Lumbar MR imaging revealed

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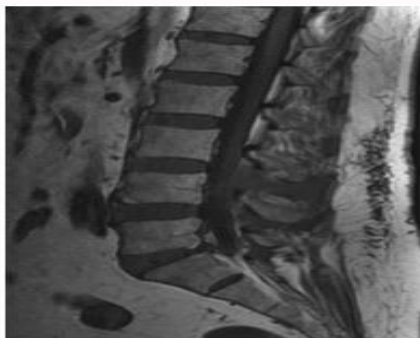
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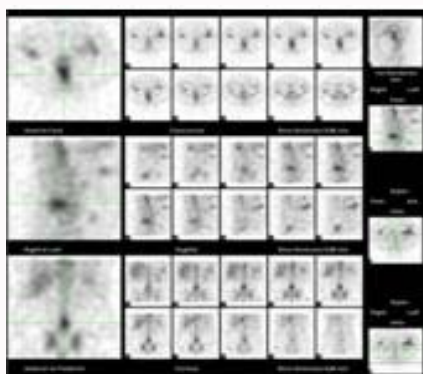
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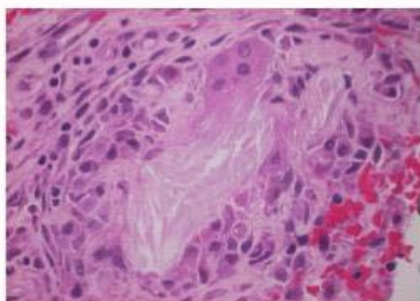
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**Figure 1:** Lumbar spine MRI. Posterior epidural collection L3 to L4, extending into spinal canal, resembling an epidural and facet abscess with paraspinal soft tissue collection.



**Figure 2:** <sup>67</sup>Ga SPECT: Intense abnormal accumulation of radiotracer at the posterior aspects of L4.



**Figure 3:** Photomicrograph of biopsy from the L3-L4 disc showing aggregates of urate crystals surrounded by an inflammatory reaction including multinucleated giant cells.

good spinal stability and no evidence of new abnormalities. Written consent was obtained from the patient to report our findings. Since we present a single case report, ethical permission has not been applied.

## Discussion

Gout is a common metabolic disorder, typically diagnosed in peripheral joints. This entity has occasionally been reported in the spine. Most patients diagnosed of spinal gout are previously symptomatic due to chronic tophaceous gout, but it may occur as the primary presentation in asymptomatic patients, which usually have increased uric acid levels in serum [1]. These characteristics make patient's history crucial for diagnosis, mainly if we consider that radiographic, MRI and SPECT features of spinal gout are not

specific and may deceptively mimic a degenerative, inflammatory, infectious or neoplastic process [2,5,6]. Definitive diagnosis relies on the demonstration of needle-shaped crystals negatively birefringent under polarized red light [1,7,8].

Nowadays there is some controversy between pharmacologic and surgical treatment of intra-spinal gout and although surgical decompression is reserved for patients with neurologic deficit [3,9,10], early recognition of spinal gout is important because timely pharmacologic treatment may avert the need of surgery. However, even if surgery is needed, it just provides symptomatic relief, being necessary a multidisciplinary management including pharmacotherapy and change of habits [3,11-13]. To our knowledge this case is noteworthy because our patient had no history of hyperuricemia or previously gout, and diagnosis has been made after examination the histological sample.

## Conclusions

Gout remains as a very difficult diagnosis entity when located in axial skeleton. Despite the sophisticated and developed current neuroimaging diagnostic techniques, patient's history is crucial and extremely important for diagnosis, being normouricemia not a reliable finding for exclusion.

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