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Case Report

Cervical gouty myelopathy in two cases at King Abdulaziz Medical City

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الملخص

النقرس هو اضطراب روماتيزمي يوجد بشكل حصري في الجنس البشري. ينجم عن ترسب بلورات بولات الصوديم الأحادية في المفاصل, والغضاريف, والأوتار، والأنسجة الرخوة. ومع ذلك، إصابة العمود الفقري نادرة. في هذا التقرير, نصف حالتين حضرتا إلى مدينة الملك عبد العزيز الطبية بجدة بأعراض سريريه لاعتلال النخاع الرقبي, بما في ذلك آلام الرقبة, وظاهرة "ليرميت", وشلل رباعي وعجز حسي (مستوى الكتف). أكد التصوير بالرنين المغناطيسي وجود ضغط على الحبل الشوكي الرقبي مع تغيرات جوهرية في إشارات الحبل الشوكي. أُجري لكلا المريضين استئصال الصفائح الفقرية وخلال العملية؛ لوحظ ضيق شديد في القناة. كما لوحظ وجود مادة جبنية بيضاء تسببت بضغط بليغ على الجذور. كان التشخيص المرضي هو النقرس. في هذه المقالة, قمنا باستعراض حالتين صعبة مع النتائج السريرية, والشعاعية والمرضية المثيرة للإهتمام. ونحن نؤكد على أهمية التشخيص المبكر لمنع المراضة.

الكلمات المفتاحية: النقرس النخاعي; اعتلال النخاع; النقرس المحوري; التصوير بالرنين المغناطيسي; توفة; الشلل النصفي

Abstract

Gout is a rheumatological disorder found exclusively in human species. It is caused by deposition of crystals of monosodium urate in joints, cartilages, tendons, and soft tissues. Involvement of the spine, however, is rare. In this report, we describe two patients presented to King Abdulaziz Medical City in Jeddah with clinical features of cervical myelopathy, including neck pain, L'hermitte phenomena, quadriparesis and sensory deficit (shoulder level). *Magnetic resonance imaging* confirmed the presence of cervical cord compression with intrinsic cord signal abnormalities. Both patients had laminectomy and intraoperatively; severe canal stenosis was identified. A whitish cheesy material was noticed causing significant root compression. The pathology was diagnostic of gout. In this article, we present two difficult cases with interesting clinical, radiological and pathological findings. We emphasize on the importance of early diagnosis to prevent morbidity.

Keywords: Axial gout; Magnetic resonance imaging; Myelopathy; Paraplegia; Spinal gout; Tophus

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Introduction

Gout, "the king of diseases and the disease of kings," is a well-described metabolic disorder found exclusively in human species. It is characterized by the supersaturation and deposition of monosodium urate (MSU) crystals in joints, cartilages, tendons, and tissues. Clinically, most cases of gout are characterized by sudden onset of severe acute monoarticular arthritis in a peripheral joint, typically, in the lower limbs. Gouty involvement of the axial spine is rare and most patients have been diagnosed while undergoing surgery for spinal cord or root compression. There are only 7 studies reported from Kingdom of Saudi Arabia. This indicates the poverty of research statistics regarding this topic. In one study, hyperuricemia was found in 8 persons of the population.[1] Only one case of gout affecting the cervical spine was reported in Kingdom of Saudi Arabia.[2] The present study reports two cases of gouty myelopathy where the diagnosis was only made intraoperatively. Our approach to understanding the present cases involved extensive analysis of all previously published cases and literature of spinal gout.

Case 1

The first case is a 79-year-old male presented with a 3-year history of bilateral arm and leg weakness. The patient reported that these symptoms started when he attempted to lift his sliding garage door up with his left arm. He noticed sharp pain in the left shoulder region. He had progressive numbness in his fingers and hands with progressive, proximal more than distal, weakness of his upper extremities. Six months later, the upper extremity symptoms worsened. He also noticed weakness in his legs; he felt unsteady while walking. He had several falls and could not get up. Interestingly, he voluntarily described the L'hermitte phenomenon. His symptoms progressed to the point that he could not dress himself or perform many of his daily activities. Bladder and bowel functions were normal, though. Past medical history was remarkable for hypertension and smoking. His medications included amitriptyline, aspirin and lisinopril. On examination, his vital signs and systemic examination were normal. On neurological examination, his higher mental functions and cranial nerves examination were normal. He was spastic in all limbs − lower extremities more than upper extremities. He had bilateral, proximal more than distal, weakness (tetraparesis) ranging from 1/5 to 3+/5. Reflexes were symmetrically brisk with bilateral Babinski sign. Sensory examination for pinprick, light touch, vibration and joint position sensations were diminished up to shoulders. We were able to reproduce the L'hermitte phenomenon with neck extension.

Investigations, including complete blood count, electrolytes, uric acid, urea, creatinine, coagulation profile and muscle enzymes, were within normal limits. MRI of the spine (Figure 1) showed extensive degenerative disc disease along the entire cervical spines with osteophytosis, narrowing and deformity of the spinal canal extending from C3 to C7 level, but most prominent at C4−5 level with associated abnormal cord signal intensity.

The patient was referred for surgical decompression. Intraoperatively, severe canal stenosis was identified at the level of C4−5. A cheesy whitish material was noticed over the upper half of the laminectomy causing significant C4 and C5 root compression. Laminectomy of C3−C6 was performed. The ligamentumflavum was quite adherent at the C3−C5 levels. Two pathology specimens were sent for analysis. The first consisted of bone and cartilage. The second was from the epidural whitish granular material that contained granulomatous inflammation (Figure 2A) with aggregates of macrophages, lymphocytes and multinucleated giant cells. It was accompanied by crystalline deposits, which on polarized microscopy (Figure 2B) demonstrated refractile needle-shaped inclusions typical of uric acid crystals.

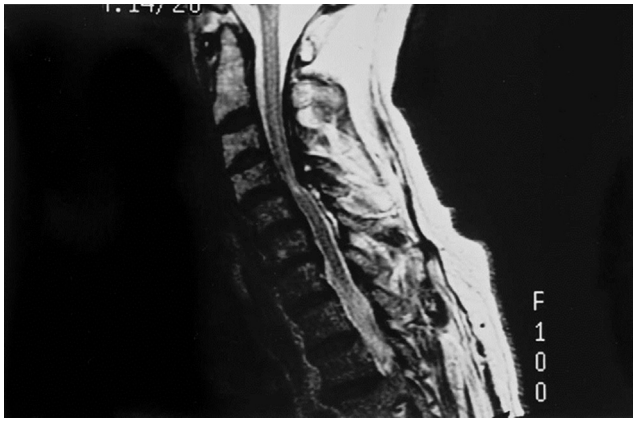

Figure 1: *Magnetic resonance imaging* of the brain, T2-weighted imaging, showing severe spinal canal stenosis with intramedullary high signal intensity.

Case 2

The second case is a 65-year-old man presented to the emergency department with a 3-month history of falls associated with weakness and numbness in all limbs and urinary incontinence. His condition was progressive in nature for the last month. Past medical history was only significant for gout diagnosed more than 10 years ago. His medications were allopurinol and aspirin. Examination revealed a skin lesion over the right ear pinna (Figure 3A). Neurologically, his higher mental functions and cranial nerves examination were normal. Motor examination revealed hypertonia and reduced power in all limbs (3 to 4/5) with wasting of the small muscles of both hands (Figure 3B). He had altered sensation below the shoulders with perianal/saddle paresthesia.

Investigations, including complete blood count, electrolytes, urea, creatinine, coagulation profile and muscle enzymes, were within normal limits. His uric acid, however, was high at 15 mg/dL (reference range is 4−6 mg/dL). MRI of the spine showed extensive degenerative disc disease along the entire cervical spines with osteophytosis and narrowing and deformity of the spinal canal extending from C4 to C6 level, but most prominent at C4−C5 level with associated abnormal cord signal intensity. The patient underwent cervical laminectomy with no postoperative complications. Pathology confirmed the diagnosis of gouty myelopathy with granulates inflammation accompanied by crystalline (needle shaped) deposit on polarized microscopy. Postoperatively, the patient had a rigorous physiotherapy with a remarkable improvement.