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A 69-Year-Old Presenting With Musculoskeletal Low Back Pain: A Case of Lumbosacral Chordoma

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Abstract

Objective: The purpose of this case report is to describe the presentation of a patient with lumbosacral chordoma characterized by somatic chronic low back pain and intermittent sacral nerve impingement.

Case report: A 69-year-old male presenting to an emergency department (ED) with low back pain was provided analgesics and muscle relaxants then referred for a series of chiropractic treatments. Chiropractic treatment included manipulation, physical therapy, and rehabilitation. After 3 times per week for a total of 4 weeks, re-examination showed little relief of his symptoms. His pain symptoms worsened and he presented to the ED for the second time. Magnetic resonance imaging was performed and revealed a high intensity mass.

Intervention and outcome The soft tissue mass identified on magnetic resonance imaging was surgically removed. Shortly after the surgery, the patient developed post-operative bleeding and was returned to surgery. During the second procedure, he developed a post-operative hemorrhage related to the development of disseminated intravascular coagulation and subsequently died during the second procedure. A malignant lumbosacral chordoma was diagnosed on pathologic examination.

Conclusion: This case report describes the presentation of a patient with lumbosacral chordoma presenting with musculoskeletal low back pain. Chordomas are rare with few prominent manifestations. An early diagnosis can potentially make a difference in morbidity and mortality. Due to its insidious nature, it is a difficult diagnosis and one that is often delayed.

Introduction

Chordoma is a rare, slow growing neoplasm of the bone that derives from notochordal remnants.[1–3] As the spine develops, notochordal remnants are downgraded to the intervertebral regions, where they progress into the nucleus pulposus[3]; and as a result, chordomas are almost exclusively found in the axial skeleton. Typically, chordomas tend to form in either the clivus of the skull (shallow depression behind the dorsum sellae) or the sacrococcygeal region (32% and 29% of cases respectively)[4,5]; the vertebral bodies are rarely involved.[4,6,7]

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In the United States the occurrence of chordomas is approximately 1 in 1 million (approximately 300 patients a year)[8] and account for less than 1% of all bone tumors.[6] Chordomas of the sacral spine usually manifest themselves in the older adult, with the greatest incidence being between 50–70 years of age. Chordomas that develop at the base of the skull occur more frequently in the younger patient.[6,7] Collectively, the male-to-female ratio is 2 to 3:1[9,10] and the median survival rate in the United States is approximately 7 years with an overall survival of 68% at 5 years and 40% at 10 years.[6,7] The prognosis for patients with chordoma is, at least in part, related to how early in the disease process the correct diagnosis is made and definitive treatment undertaken.[1,2] Clearly, the earlier the diagnosis is correctly made, the greater the likelihood of survival for the patient.

The clinical picture of chordomas will vary, depending on the anatomical site of the lesion. There have been published reports[11,12] of patients who have a mean duration of their symptoms for 2 years before the correct diagnosis is made. Sacral chordomas, especially, can be present for a prolonged period before symptoms appear.[13] Pain in the low back and sacral region is one of the most common presenting symptoms. This pain is often described as dull in nature and is usually worse in the sitting position (mimicking discogenic pain). Some patients will also develop saddle anesthesia and urinary or fecal dysfunction (cauda equina syndrome).[1,2] Additionally, some patients with sacral chordomas will develop coccydynia (pain in and around the coccyx), erectile dysfunction, urinary frequency or urgency, urinary incontinence, constipation or weakness, and paresthesias of the legs.[4,14,15]

Although the sacral and clival regions are most commonly involved in chordoma development, these lesions may occasionally arise anywhere along the vertebral column.[16] Symptoms would depend on the area involved and the local tissues that may become invaded by the disease. Chordomas are unusual tumors in that they may cause destruction after crossing a disc space. The purpose of this report is to present a case of a patient who was referred by his medical physician to a chiropractic clinic for the management and treatment of chronic lumbosacral low back pain (LBP) and was later diagnosed with lumbosacral chordoma.

Case Report

A 69-year-old male, whose medical history consists of mild, well-controlled, hypertension, presented to the emergency department (ED) complaining of a LBP for 3 to 4 months. He denied any neurological symptoms during that time, although, more recently, he had noted a few episodes of urinary incontinence and decreased urine output. Over the previous days (prior to the ED visit) he noted small amounts of urine production per day. His pain was worse when he was in a sitting position and less severe during recumbency. He had self-medicated with anti-inflammatory medications (naproxyn sodium, 2 capsules) without improvement. He had seen his primary care physician on at least 2 occasions prior to the ED visit, and was given muscle relaxants (methocarbamol 750 mg 4 times per day). When these did not help his LBP, his primary medical physician prescribed hydrocodone/acetaminophen 5 mg/300 mg every 4 hours for the pain in addition to the muscle relaxants prescribed previously. This medication improved his symptoms moderately, but only for a short period of time.

He was then referred by his primary medical physician for chiropractic care for symptomatic relief of his musculoskeletal LBP. The Doctor of Chiropractic (DC) found the physical examination findings consistent with somatic dysfunction with the exception of slight hypoesthesia over the right buttock and a very small (2 cm), palpable non-tender mass posteriorly over the sacral region. It was felt at the time that this soft tissue mass likely represented a sebaceous cyst, a small pilonidal cyst and/or Trigger Point (as described by Travell, 1999).[17] Lumbopelvic radiographic images performed by both the referring medical physician and DC were unremarkable. The treatment prescribed at the chiropractic clinic included a variety of mobilization and manipulation therapies (VibraCussor, Sound-assisted Soft Tissue Mobilization, Instrument-Assisted joint manipulation, and mild distraction to the L5-SI joint via Cox protocol) to hypo-mobile joints (with emphasis on the sacral-iliac and lumbosacral junction). Other adjunctive therapies prescribed and performed by the DC included various physical therapy techniques (including pelvic and abdominal strengthening exercises) and nutritional consultation (anti-inflammatory dietary recommendation). The described treatment protocol was 3 times per week for a total of 4 weeks, with the aim of reducing pain. Upon re-examination, he described little, if any, permanent relief of his symptoms. At this point his pain symptoms had worsened so he presented to the ED for the second time to decrease his LBP pain.

The physical examination findings in the second ED visit confirmed the objective findings noted in the chiropractic report. However, the small non-tender