

Excruciating Low back Pain in an Acute Stroke Patient: A Case Report

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Abstract

Background: Acute low back pain is one of the most common reasons for adults to see a physician. However, vertebral osteomyelitis (VO) is a rare condition, which mostly affects the lumbar spine. Lumbar spine MRI imaging is the diagnostic method of choice. If left untreated can lead to vertebral destruction or spinal abscess formation.

Case: An 86-year-old man presented with a stroke to our facility, while undergoing therapy complained of excruciating low back pain that prevented him from undergoing therapy specially standing and walking. His vital signs were normal, and he was afebrile. Plain X-ray of the lower spine showed osteoarthritic changes. Patient was initially started on non-steroidal anti-inflammatory (NSAID) with no change in the severity of his low back pain. Lumbar vertebral spine magnetic resonance imaging (MRI) showed lumbar vertebral osteomyelitis. Initiation of IV antibiotics dramatically decreased the pain severity.

Conclusion: Low back pain is common in the elderly population and responds effectively to NSAID. Persistence of low back pain in the presence of pathognomonic changes in the lumbar spine MRI indicate the presence of VO. Prompt treatment with empirical antibiotics is warranted.

Key Words: intractable low back pain, vertebral, osteomyelitis, MRI lumbar spine

Introduction

Vertebral osteomyelitis (VO) is a rare condition with an incidence 2/100,000 individuals/year, [1, 2] common in men, over 60 years of age [2, 3]. It usually affects the lumbar spine [2, 3]. Skin and genitourinary tract infections are common antecedent sites [3]. It is due mainly to hematogenous spread as vertebrae are highly vascular compared to disc which are avascular in adults. If left untreated it can lead to spinal cord compression from either vertebral destruction or spinal abscess and even death [4, 5]. Prompt treatment with IV antibiotics is needed as delay risks not only joint and bone destruction, but also cord compression and death from septicemia. Surgical intervention may be needed in the presence of neurological deficits, cord compression, spinal instability, or disease recurrence despite an appropriate course of antibiotics [6].

Case Report

An 86-year-old man with a history of hypertension and osteoarthritic joints pain presents to our facility with a sudden onset of left facial droop and left-sided weakness. On neurological evaluation he had a left facial

and left arm and leg weakness in keeping with a right sided acute stroke, which was confirmed by head MRI. In the second week of his in-patient stay he started complaining of lower back pain. The pain was localized to the lumbar area, progressively increasing in severity that he unable to withstand physical therapy as pain worsened by active and passive trunk and lower extremity movements. Repeat medical and neurological examination was unchanged from admission including being afebrile throughout this time. He was initially started on non-steroidal anti-inflammatory medication and later changed to opiate analgesic which offered partial pain relief [7-9]. His blood work-up was negative except for a sedimentation rate of 57. Plain X-ray of the lumbar spine showed osteoarthritic changes (Figure 1a and b). Magnetic resonance imaging (MRI) T1 image axial and sagittal images without gadolinium showed bony hyperintensities on T2 in keeping with osteomyelitis (Figure 2a and b). Patient was started empirically on IV antibiotic for 6-weeks in consultation with the infectious disease service without undergoing aspiration or biopsy. During his discharge his daughter mentioned the patient had a surgical resection of a pilonidal sinus two weeks prior to his stroke.



Figure 1a: Plain X-ray of the lumbar spine in sagittal view



Figure 1b: Plain X-ray of the lumbar spine in coronal view

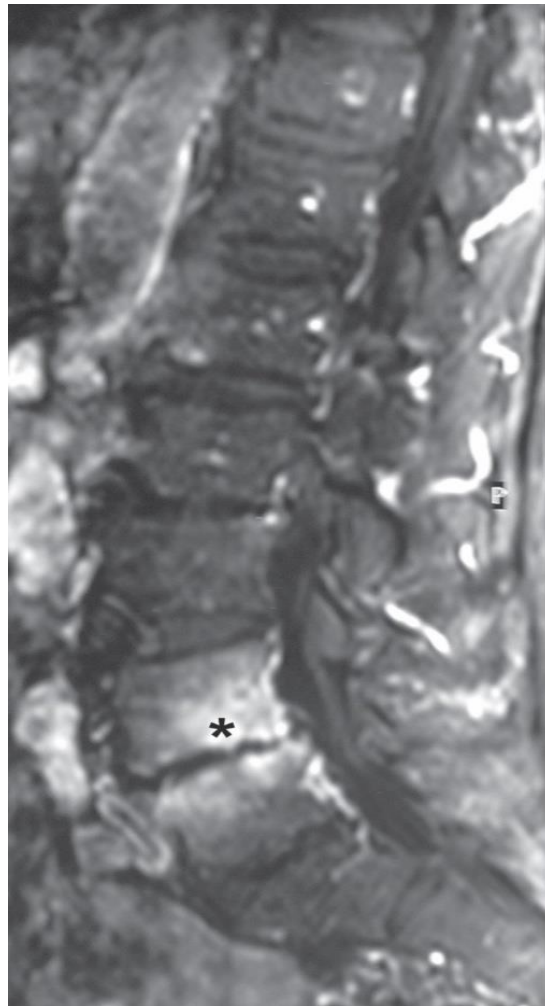


Figure 2a: Sagittal lumbar spine MRI T1 image without gadolinium showing bony hyperintensity in keeping with osteomyelitis (black *)

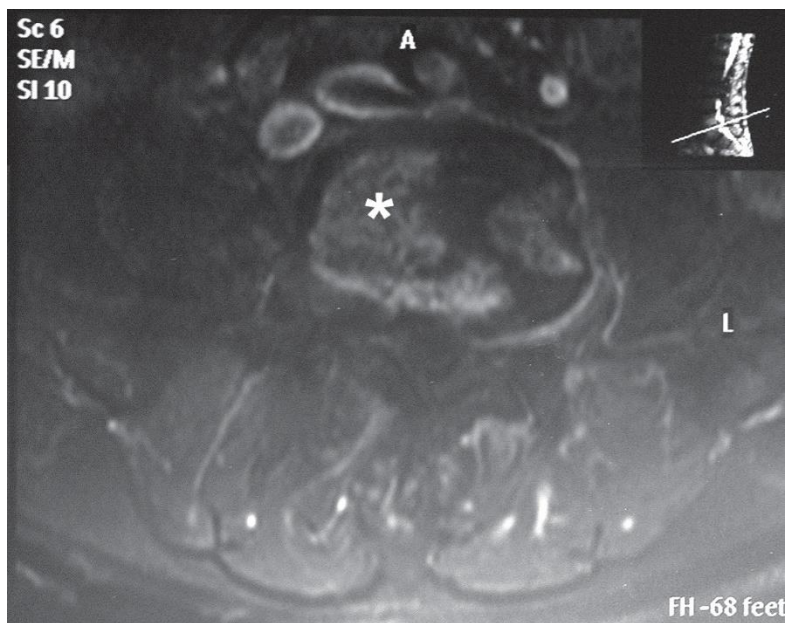


Figure 2b: Axial lumbar spine MRI T1 image without gadolinium showing bony hyperintensity in keeping with osteomyelitis (white *)

Discussion

Vertebral osteomyelitis (VO) is challenging to diagnose in its early stages and unfortunately can lead to significant morbidity and mortality on delayed diagnosis in late stages [10]. Risk factors for higher mortality rate include increased age, male sex, and presence of comorbidities such as history of congestive heart failure, cerebrovascular disease, liver disease, hepatitis C, and renal disease [10]. This case illustrates the difficulty physicians face when caring for elderly patients as: a) patient was afebrile throughout the course of his disease, b) patient and his spouse could not remember all of the relevant details of their medical/surgical history, as this patient recently had a pilonidal sinus surgery which can delay the diagnosis, c) excruciating low back pain unresponsive to analgesics may be due to a cause other than spine osteoarthritis as in this patient, and d) spine MRI is the diagnostic method of choice to confirm the diagnosis and help initiate early treatment [1]. Delay in diagnosis results in high mortality rate (15-30%) [10]. Previously image-guided percutaneous biopsy was considered gold standard for VO diagnosis. However, its yield of identifying organism in cases of VA range from 30-45%, [11, 12] and the risk of the procedure complications such as bleeding, infection, neurological injury, and needle breakage makes it a less desirable intervention. Now-a-days spine MRI is the gold standard in diagnosis of VO. It shows hyperintensities on T2 weighted images affecting the adjacent vertebral bodies 9as in this case) due to branched arterial supply. It has a sensitivity, specificity, and accuracy of 90% and greater which is higher than radionuclide bone scan [1].

Conclusion

Vertebral osteomyelitis is a rare and challenging condition, difficult to diagnosis as the presentation is non-specific. Early spine MRI is the diagnostic investigation of choice in the absence of a fever, positive blood culture, and a raised leucocyte count. It also helps initiate early IV antibiotics administration. Dramatic response to IV antibiotics in the absence of a response to NSAID and/or opioids point to the presence of an infectious etiology

References

1. Modic MT, Feiglin DH, Piraino DW, Boumpfrey F, Weinstein MA, Duchesneau PM, Rehm S. (1985) Vertebral osteomyelitis: assessment using MR. *Radiology*. 157(1):157-66.
2. Beronius M, Bergman B, Andersson R. (2001) Vertebral osteomyelitis in Göteborg, Sweden: a retrospective study of patients during 1990-95. *Scand J Infect Dis*. 33(7):527-32
3. Krogsgaard MR, Wagn P, Bengtsson J. (198) Epidemiology of acute vertebral osteomyelitis in Denmark: 137 cases in Denmark 1978-1982, compared to cases reported to the National Patient Register 1991-1993. *Acta Orthop Scand*. 69(5):513-7
4. Frisbie JH, Gore RL, Strymish JM, Garshick E. (2000) Vertebral osteomyelitis in paraplegia: incidence, risk factors, clinical picture. *J Spinal Cord Med*. 23(1):15-22.
5. Solis Garcia del Pozo J, Vives Soto M, Solera J. (2007) Vertebral osteomyelitis: long-term disability assessment and prognostic factors. *J Infect*. 54(2):129-34.
6. Berbari EF, Kanj SS, Kowalski TJ, Darouiche RO, Widmer AF, et al, (2015) Infectious Diseases Society of America. 2015 Infectious Diseases Society of America (IDSA) Clinical Practice Guidelines for the Diagnosis and Treatment of Native Vertebral Osteomyelitis in Adults. *Clin Infect Dis*. 61(6):e26-46.
7. Roelofs PD, Deyo RA, Koes BW, Scholten RJ, van Tulder MW. (2008) Non-steroidal anti-inflammatory drugs for low back pain. *Cochrane Database Syst Rev*. (1): CD000396.
8. Cifuentes M, Webster B, Genevay S, Pransky G. (2010) The course of opioid prescribing for a new episode of disabling low back pain: opioid features and dose escalation. *Pain*. 151(1): 22-29.
9. Issa K, Diebo BG, Faloon M, Naziri Q, Pourtaheri S, Paulino CB, Emami A. (2018) The Epidemiology of Vertebral Osteomyelitis in the United States From 1998 to 2013. *Clin Spine Surg*. 31(2):E102-E108.
10. Chelsom J, Solberg CO. (1998) Vertebral osteomyelitis at a Norwegian university hospital 1987-97: clinical features, laboratory findings and outcome. *Scand J Infect Dis*. 30(2):147-51.
11. Megan T Ang, Geoffrey R Wong, Davy R Wong, Warren Clements, Tim Joseph. (2019) Diagnostic yield of computed tomography-guided biopsy and aspiration for vertebral osteomyelitis. *J Med Imaging Radiat Oncol*. 63(5):589-595.
12. Lee HT, Pukenas BA, Sebro R. (2020) Change in Bone CT Attenuation and C-reactive Protein Are Predictors of Bone Biopsy Culture Positivity in Patients With Vertebral Discitis/Osteomyelitis. *Spine (Phila Pa 1976)*. 45(17):1208-1214.



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