

Low Back Pain Radiating to the Left Buttock as a Form of Onset of Multiple Myeloma: A Rare Case Report

Jang-Chun L^{1,3}, Jo-Ting T¹, Hsin-I M² and Wei-Hsiu L^{2*}

¹Department of Radiation Oncology, Shuang Ho Hospital, Taipei Medical University, Taipei, Taiwan, Republic of China

²Department of Neurological Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan, Republic of China

³Department of Radiation Oncology, Tri-Service General Hospital, Taipei, Taiwan, Republic of China

*Corresponding author: Wei-Hsiu Liu, Department of Neurological Surgery, Tri-Service General Hospital, 325, Cheng-Kung Road 2, Taipei 114, Taiwan, Republic of China, Tel: 886287927177, Fax: 886287927178; E-mail: liubear0812bear@yahoo.com.tw

Rec Date: November 3, 2015, Acc Date: April 21, 2015, Pub Date: April 24, 2015

Copyright: © 2015 Lin JC, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Low back pain (LBP) is a common presentation in patients with multiple myeloma. However, LBP that is increased or unrelieved by rest may indicate for malignancy and a patient's young age may mislead and delay diagnosis. Here, we presented a 43 year-old-female who complained of low back pain with radiation to left buttock. The symptom got worsen at night and not improved after took nonsteroidal anti-inflammatory medication. X-ray of lumbarsacral spine revealed osteolytic lesion over sacral bone. Magnetic resonance (MR) imaging studies of lumbarsacral spine showed an infiltrative tumor involving the left-sided sacral bone. Accordingly, left sacral laminectomy with removal of tumor was performed and pathological result revealed plasmacytoma. In addition, bone marrow biopsy demonstrated increased plasma cells with 35% of all nucleated cells. The final diagnosis was multiple myeloma.

Keywords: Low back pain; Multiple myeloma

Introduction

Accurate diagnosis of LBP may be difficult and requires a comprehensive approach. However, the history and physical examination may elicit warning signals that indicate the need for further work-up and treatment. These "red flags" include a history of trauma, fever, incontinence, unexplained weight loss, a cancer history, long-term steroid use, parenteral drug abuse, intense localized pain and back pain that is increased or unrelieved by rest. Here, we reported 47 year-old-female who complained of low back pain with radiation to left buttock. The patient had "red flags" that is pain at night that disturbs sleep and low back pain could not improved by rest. Further work-up, like Magnetic resonance (MR) imaging was performed and finally multiple myeloma was diagnosed.

Case Report

A previously healthy 43 year-old-female sustained severely low back pain with radiation to left buttock for two weeks. The patient called at clinic and took nonsteroidal anti-inflammatory medication under the impression of myofascial pain. However, the symptom did not improve and the patient called at our emergent department. The patient complained of increasingly painful sensation at night and the symptom could not improve after bed rest or took nonsteroidal anti-inflammatory medication. On physical examination, local tenderness was noted over left buttock. On neurological examination revealed no abnormal finding except to absent of bilateral babinski's signs, and decreased deep tendon reflex. The laboratory examinations revealed no remarkable contribution except to anemia (Hgb: g/dL). X-ray of lumbarsacral spine showed osteolytic lesion over left sacral bone (Figure 1). MR images of lumbarsacral spine presented with an

infiltrative tumor involving the left-sided sacral bone, spinal canal and presacral region (Figure 2A and 2B). Accordingly, left sacral laminectomy with removal of tumor was performed. The pathological result revealed plasmacytoma. Then serum and urine protein electrophoresis, X-rays of the skull, axial skeleton, proximal long bones and bone marrow biopsy were survey. The significant finding were kappa light chains of urine revealed elevated (22.4 mg/dL), increased plasma cells with 35% of all nucleated cells and skull X-ray as punched-out lesions (Figure 3). The final diagnosis was multiple myeloma. Now the patient was refer to oncologist and received chemotherapy.



Figure 1: X-ray of lumbar and sacral spine showed osteolytic lesion over left sacral bone.

Discussion

LBP is a very common symptom, and it affects 4 of 5 people at some time during their lives. It is the leading cause of disability for those aged 19 to 45 and is the second most common cause of missed work days for adults younger than 45. LBP has many causes, and the most common causes are muscle and ligament strains and sprains. The diagnosis of LBP requires careful history and detailed physical examination to determine whether the causes are mechanical or secondary and more threatening. However, difficulties arise in the differential diagnosis of LBP because clinical signs and laboratory findings may be unremarkable, or misleading, and major etiologic categories of LBP include degenerative infiltrative and infective disc diseases, metastatic or neoplastic and infective vertebral involvement [1].

Therefore, when the patient had "red flags" include a history of trauma, fever, incontinence, unexplained weight loss, a cancer history, long-term steroid use, parenteral drug abuse, pain at night that disturbs sleep and back pain that is increased or unrelieved despite treatment or bed rest, the further work-up should be performed. Especially, the malignancy, such as multiple myeloma, should be highly suspected if the patient had the symptom, like unexplained weight loss, a cancer history, pain at night that disturbs sleep and LBP that is increased or unrelieved despite treatment or bed rest.

Multiple myeloma is a malignant plasma cell disorder that account for about 1% of malignant disease and 2% of deaths from all malignant neoplasms [2]. This disease is age-related, and its incidence peaks between 60 to 70 years [3]. It is commonly associated with marked destructive osteolytic bone lesions, therefore intractable bone and pathological fracture are the major features [4]. One of the most common sites of lesion development is the spine [5]. The low thoracic spine and lumbar spine are most frequently involved [6], and low back pain is typically initial presentation [7]. It is rare involved the sacral region and the lesion was usually osteolytic without peripheral rims of sclerosis, and are sometimes with a space-occupying lesion [8]. When making decisions about the need for, and timing of, further diagnostic investigation, we can base on American College of Physicians guideline, which provides a more focused on list of red flags than other guidelines, and emphasizes consideration of the low probability of disease [9]. This finding increased the chance of malignancy to greater than 7%, by the guideline to screen for malignancy; a history of malignancy was the only red flag [10].

The work-up of suspected multiple myeloma includes a skeletal survey and bone marrow biopsy. A series of X-rays of the skull, axial skeleton and proximal long bones should be evaluated. Myeloma activity sometimes appear as "lytic lesions" (with local disappearance of normal bone due to resorption), and on the skull X-ray as "punched-out lesions". MR imaging is more sensitive than simple X-ray in the detection of lytic lesions, and may supersede skeletal survey, especially when vertebral disease is suspected. A bone marrow biopsy is usually performed to estimate the percentage of bone marrow occupied by plasma cells. That is generally considered to be benign and can be managed in a primary care setting; and the difficulty in providing a definitive diagnosis for most presentations of back pain has given rise to the term "non-specific low back pain" [11]. Moreover, to endorsing red flags with low diagnostic accuracy, we think guidelines that recommended immediate referral to imaging if any red flag was present [12]. We advocate directs clinicians to image patients when even only one red flag is present by West Australian Diagnostic Imaging Pathways Guideline [13].

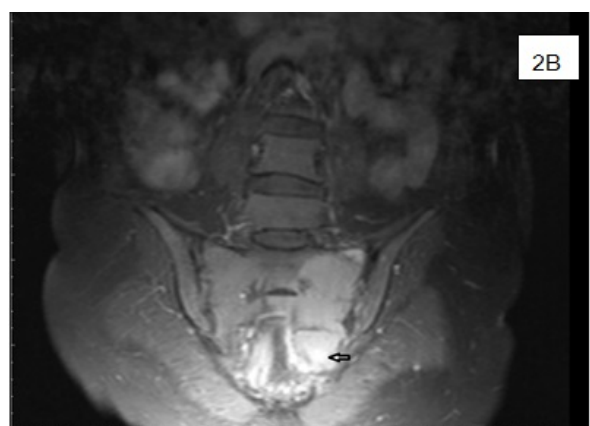
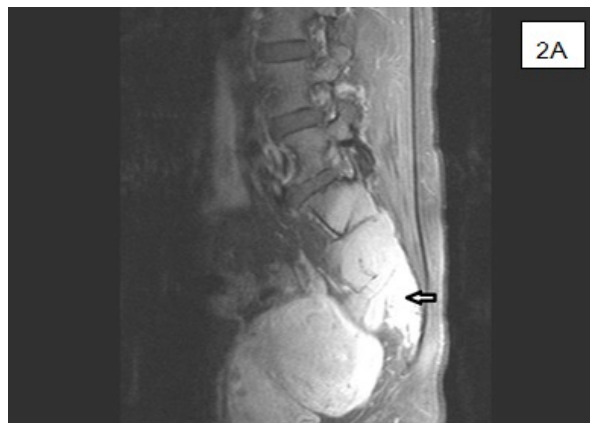


Figure 2: Magnetic resonance (MR) images of lumbar and sacral spine revealed an infiltrative tumor involving the left-sided sacral bone, spinal canal and presacral region.



Figure 3: X-ray of skull bone showed punched-out lesions (arrow).

In conclusion, LBP is a very common symptom, and is the second most common cause of missed work days for adults than 45. However, the patient had "red flags" include unexplained weight loss, a cancer history, pain at night that disturbs sleep and back pain that is increased or unrelieved despite treatment or bed rest, malignancy, such as multiple myeloma should be suspected. Further work-up for LBP should be evaluated. Moreover, multiple myeloma is very uncommon in patient young than 50 years and rarely located in sacral region. In our case, the patient's young age may mislead and delay diagnosis. Therefore, physicians should keep in mind that young patient had LBP at night that disturbs sleep or unrelieved despite treatment or bed rest, multiple myeloma may be the cause.

References

1. Abram SR, Tedeschi AA, Partain CL, Blumenkopf B (1988) Differential diagnosis of severe back pain using MRI. *South Med J* 81: 1487-1492.
2. Bladé J, Kyle RA, Greipp PR (1996) Multiple myeloma in patients younger than 30 years. Report of 10 cases and review of the literature. *Arch Intern Med* 156: 1463-1468.
3. Kyle RA (1975) Multiple myeloma: review of 869 cases. *Mayo Clin Proc* 50: 29-40.
4. Mundy GR, Bertolini DR (1986) Bone destruction and hypercalcemia in plasma cell myeloma. *Semin Oncol* 13: 291-299.
5. Hu KC, Lin J, Chuang YC, Cheng SJ, Chang KM (2001) Multiple myeloma associated with extramedullary plasmacytoma causing nerve root compression: a case report. *J Formos Med Assoc* 100: 277-280.
6. Terti R, Alanen A, Remes K (1995) The value of magnetic resonance imaging in screening myeloma lesions of the lumbar spine. *Br J Haematol* 91: 658-660.
7. George ED, Sadovsky R (1999) Multiple myeloma: recognition and management. *Am Fam Physician* 59: 1885-1894.
8. Lanzieri CF, Sacher M, Solodnik P, Hermann G, Cohen BA, et al. (1987) Unusual patterns of solitary sacral plasmacytoma. *AJNR Am J Neuroradiol* 8: 566-567.
9. Downie A, Williams CM, Henschke N, Hancock MJ, Ostelo RW, et al. (2013) Red flags to screen for malignancy and fracture in patients with low back pain: systematic review. *BMJ* 11: 347.
10. Henschke N, Maher CG, Refshauge KM, Herbert RD, Cumming RG, et al. (2009) Prevalence of and screening for serious spinal pathology in patients presenting to primary care settings with acute low back pain. *Arthritis Rheum* 60: 3072-3080.
11. Koes BW, van Tulder M, Lin CW, Macedo LG, McAuley J, et al. (2010) An updated overview of clinical guidelines for the management of non-specific low back pain in primary care. *Eur Spine J* 19: 2075-2094.
12. Negrini S, Giovannoni S, Minozzi S, Barneschi G, Bonaiuti D, et al. (2006) Diagnostic therapeutic flow-charts for low back pain patients: the Italian clinical guidelines. *Eura Medicophys* 42: 151-170.
13. Government of Western Australia Department of Health (2013) Diagnostic imaging pathways: low back pain.