

Spinal Tumor and Sciatica: A Case Report

Vivek Sharma^{1,*}, Chrishan Fernando²

¹University Health Network- Altum Health, Cambridge, Canada

²Bluewater Physiotherapy Clinic, Durham, Canada

Email address

vivek.sharma@uhn.ca (V. Sharma)

*Corresponding author

To cite this article

Vivek Sharma, Chrishan Fernando. Spinal Tumor and Sciatica: A Case Report. *Medicine Journal*. Vol. 5, No. 1, 2018, pp. 1-3.

Received: April 12, 2017; Accepted: March 10, 2018; Published: April 9, 2018

Abstract

Sciatica is most commonly attributed to degenerative disc diseases. However, symptoms may occur secondary to a spinal tumor or they may be found accidentally on imaging. The subject of this case study is a 67 year old female who presented to a community physiotherapy clinic with left sided sciatica. The subject reported previous history of sciatica on the same side. Neurological examination revealed decreased strength and light touch sensation in the left L4 nerve root distribution. Straight leg raise test was positive and reproduced radicular pain on the affected side. Lumbar spine x-rays and reports were inconclusive. Physiotherapy treatment was directed towards treatment for prolapsed disc and included modalities for pain, acupuncture and exercises. Unfortunately this patient did not respond to conservative treatment and was therefore referred back to her physician requesting Magnetic Resonance imaging (MRI). MRI results demonstrated an L4-L5 left extraforaminal disc protrusion and tiny intradural, extramedullary lesion adjacent to the right L4 nerve root, which could be indicative of a nerve sheath tumors. Though the coexistence of degenerative disc disease and spinal tumors is not common, there have been previous reports and reference to this in literature. Although nerve root compression due to spinal tumors or degenerative disc disease cannot be easily distinguished, the presence of a spinal tumor should be considered a differential diagnosis when examining patients presenting with sciatica. Therefore, when conducting an examination and taking the subjective history, physiotherapists must be familiar with the red flags associated with the more serious underlying causes of back pain. It is the responsibility of the treating clinician to refer the patient for further evaluation and imaging when the patient is not making any progress with conservative treatment.

Keywords

Sciatica, Spinal Tumor, Degenerative Disc Disease, Disc Prolapse

1. Introduction

Low back pain is frequently encountered by Physiotherapists in primary care settings. Most often it is ascribed to lumbar disc herniations and degeneration of the spine. Sinister pathologies, such as a spinal tumor are not common causes for low back pain; they can however mimic mechanical low back pain. Intradural spinal tumors are rare with an annual incidence of 2–4/100,000 and are mostly associated with neurological deficits, radicular and nocturnal pain [1]. It has been reported that disc herniation and spinal tumors can be present concurrently and often at the same spinal level, albeit it is rare [2, 3, 4, 5, 6]. Due to some

similarities in clinical presentations and image findings for spinal tumor and disc herniation, a diagnosis of spinal tumor can be missed at an early stage. Back pain is not commonly described as a concomitant symptom, such that patients presenting with a tumor and degenerative spine disease, the symptoms of back pain are typically attributed to the degenerative changes rather than the tumor. Complete history, careful physical examination and investigative measures; such as contrast MR imaging, are helpful to establish throughout diagnoses [9]. The purpose of this case is to make physiotherapists aware about referring to the appropriate clinician when a client is not responding to treatment. Another aim of this study is to present the appearance of both degenerative disc disease and a spinal tumor at the same

spinal segment and consider spinal tumor as one of the differential diagnosis when assessing a client with complaints of sciatica.

2. Methods

A 67 years old female patient presented to our clinic with complaints of low back pain radiating down the left leg accompanied with numbness in the left leg. She had been experiencing pain for 5 weeks after twisting her back while bending over to lift an object. Following the injury she experienced immediate Low back pain that was confined to her low back area only that resulted with her attending emergency for assistance. The attending physician prescribed pain medications and ordered X-rays that showed no significant findings. In the days following, this patient's pain began radiating down the left leg to her ankle and at this juncture she made an appointment for physiotherapy. During the clinical examination, her chief complaints included constant sharp shooting pain down her left leg from low back; she reported pain levels of 10/10 on the subjective pain scale with sleep disturbance due to the pain. Her pain was aggravated by sitting and standing, however she experienced less pain in standing. She found relief with the use of topical creams and with lying down. She denied any bladder and bowel symptoms. She denied having any constitutional symptoms. Her anamnesis revealed a previous episode of sciatica affecting the same leg that improved without intervention. Her past medical history was remarkable for fibromyalgia, osteoarthritis and bladder spasms.

On objective examination, she was observed to have a list in her spine and ambulated with a limping gait pattern. There was diffuse tenderness and spasm present in her lower paraspinal muscles with restricted and painful lumbar flexion extension and side flexion to the left. However her right sided side flexion and rotations did not reproduce any pain. Neurological examination demonstrated a reduction in strength and reduced light touch sensation in her left L 4 nerve root distribution. Straight leg raise was positive for radicular pain on the left side. Her deep tendon reflexes (knee and ankle jerk) were equal and symmetrical through her lower extremities and the Babinski reflex was down going.

We suspected a prolapsed disc to be the reason for her ongoing pain and addressed her symptoms with electro modalities, McKenzie lumbar extension biased exercises and nerve mobility exercises. After 4 sessions of physiotherapy treatment she did not report any change in her pain level. She was also treated with acupuncture for pain relief, however, she did not find any benefit with acupuncture either. Finally, she was referred back to her family doctor for further evaluation and with a request for a lumbar spine MRI. Her Lumbar spine MRI revealed L4-L5 left extraforaminal disc protrusion abutting the extraforaminal left L4 nerve root and tiny intradural, extramedullary lesion adjacent to the right L4 nerve root most likely nerve sheath tumor. In addition, multilevel mild disc degenerative changes were evident in her lumbar spine.

3. Discussion

Our case reports a rare situation where prolapsed disc and spinal tumor are present at the same spinal level. To the best of our knowledge, there have only been a few cases reported of degenerative disc disease coexisting with spinal tumor; however literature is growing in this area [2, 3, 4, 5, 6, 7]. Although it is not clear from our case whether the accidentally found tumor was contributing to the patient symptoms or the client's heightened symptoms were due to the severity of disc prolapse. This case also highlights the importance of referring to the appropriate clinician or imaging, when a client is not making progress with physiotherapy treatment.

Sinister pathologies are uncommon and commonly thought to present as constant, unwavering pain that is unchanged by joint movement or altering body positioning and may become worse at night. However, spinal tumors may mimic musculoskeletal pathology, as symptoms are often reproducible by active/passive movement and can ease with position change or rest [5]. In clinical practice it is always difficult to distinguish between common and rare lesions involving the spine on a basis of clinical exam alone. Developments in neuroimaging have contributed to earlier and safer diagnoses concerning spine disease. However, in times of low healthcare budgets one will use resources for diagnostic imaging cautiously. The evidence indicates that clinician must abstain from immediate lumbar spine imaging in primary care patients with low back pain without features indicating a serious underlying condition [8]. Instead, decisions concerning the diagnostic armamentarium are based on the patient's clinical appearance, the probable cause of symptoms and ordered by Physicians. However, if no additional imaging is done on a client who is not responding to appropriate conservative treatment, without image-based diagnosis, this might in some cases delay a correct diagnosis [10].

Low back pain is one of the most common presentations in physiotherapy practice for which clients seek treatment. Back pain is usually considered benign in nature with a self-limited and natural course in vast majority of affected population. It is very rare that low back is caused by serious underlying disease like spinal tumor, as they may initially present as mechanical dysfunction [11, 12]. It is responsibility of the physiotherapist to rule out any serious pathology. Clinical practice guidelines have been developed in order to assist clinicians in determining the presence of serious underlying cause for low back pain. The four red flag with the highest possible likelihood ratios for detecting the presence of cancer resulting in low back pain are a previous history of cancer, failure to improve with conservative treatment after 1 month, older age and an unexplained weight loss [9, 10, 13].

While many aspects of this client's history and physical exam findings were consistent with a clinical diagnosis of lumbar radiculopathy. There were some flags present that may have been suggestive of more serious underlying cause. First, the client reported that her sleep was affected because

of increased pain during the night time. However, it is not uncommon for patients with acute mechanical low back pain to have pain severe enough to awaken them from sleep. The other flags which were evident in this case were, old age and failure to improve client's symptoms with conservative care.

4. Conclusion

Differential diagnosis is a key component of Physiotherapist practice. While the prevalence of serious medical pathology causing low back pain is extremely low, encompassing less than 1% of all patients presenting to their clinicians. It is the responsibility of the physiotherapists to screen for serious medical conditions and make timely referral to the appropriate health professional.

Funding

The authors did not receive any funding.

References

- [1] David Bellut, Urs M. Mutter, Martin Sutter, Andreas Eggspuehler, Anne F. Mannion, Francois Porchet. Back pain in patients with degenerative spine disease and intradural spinal tumor: what to treat? when to treat? *Eur Spine J.* 2014; 23: 821-829.
- [2] Inger K. Roug, Larry B. McCartney. Metastatic non-Hodgkin lymphoma presenting as low back pain and radiculopathy: A case report. *Journal of Chiropractic Medicine.* 2012; 11: 202-206.
- [3] Shawn P. Williams, Bernard Beckerman, Maria Elena Piña Fonti. A 69-year-old presenting with musculoskeletal low back pain: A case of lumbosacral chordoma. *Journal of Chiropractic Medicine.* 2014; 13: 144-148.
- [4] Albert FK, Oldenkott P, Bieker G, et al. Lumbar intervertebral disk herniation with a concomitant nerve root neurinoma at the same site. Case report and review of the literature. *Neurochirurgia.* 1988; 31 (6): 222-225.
- [5] Lance M. Mabry, Michael D. Ross, John M. Tonarelli. Metastatic cancer mimicking mechanical low back pain: a case report. *Journal of Manual and Manipulative Therapy.* 2014; 22 (3): 162-169.
- [6] Jianjiang Pan, Yue Wang and Yazeng Huang. Coexistence of intervertebral disc herniation with intradural schwannoma in a lumbar segment: A case report. *World Journal of Surgical Oncology.* 2016; 14: 113-116. S W Baek, Cheol Kim, Han Chang.
- [7] Intradural schwannoma complicated by lumbar disc herniation at the same level: A case report and review of the literature. *Oncology Letters.* 2014; 8: 936-938.
- [8] J. C. Anderson. Is immediate imaging important in managing low back pain? *Journal of Athletic Training.* 2011; 46 (1): 99-102.
- [9] Nicholas Henschke, Christopher G. Maher, Kathryn M. Refshauge. Screening for malignancy in low back pain patients: Asystematic review. *Eur Spine J.* 2007; 16: 1673-1679.
- [10] Wolfgang Borm, Markus Gleixner, JurgensKlasen. Spinal tumorsin coexisting degenerative spine disease –a differential diagnostic problem. *Eur Spine J.* 2004; 13: 633-638.
- [11] Timothy Madson. Considerations in physical therapy management of a non-responding patient with low back pain. A case report. *Physiotherapy Theory and Practice.* 2017; 33 (9): 743-750.
- [12] Michael Ross, Edmond Bayer. Cancer as a cause of low back pain in a patient seen in a direct access physical therapy setting. *J Orthop Sports PhysTher.* 2005; 35: 651-658.
- [13] Arnold YL Wong, JaroKarppinen, Dino Samartzis. Low back pain in older adults: risk factors, management options and future directions. *Scoliosis and Spinal Disorders.* 2017; 12: 14.