

## Case report

## Lumbo-sacral radiculopathy referral decision-making and primary care management. A case report

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## ABSTRACT

Low back pain guideline recommendations can inform a decision in primary care to refer for surgical assessment. The purpose of this report is to present a patient with clinical signs and symptoms of lumbo-sacral radiculopathy who experienced pain of high intensity, severe paresis and depression. The guideline informed decision-making process resulted in a decision not to refer. This case report aims to increase awareness of referral guidelines and to demonstrate radicular pain and weakness, disability and depression outcomes subsequent to primary care management.

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## 1. Introduction

Direct access to physiotherapy services occurs in various countries worldwide. The World Confederation for Physical Therapy (WCPT) mapped the presence of direct access and self-referral in a 2012 survey and found that direct access was permitted in 50% of the 63 WCPT member organisations that responded to the access survey item (WCPT, 2012). Direct access has prompted scrutiny of the physiotherapy evaluative and diagnostic processes leading to referral to other specialities or health services (Boissonnault and Ross, 2012).

Low back pain is a common presentation in primary care and may require referral. Low back pain guidelines (Waddell et al., 1996; Danish Institute for Health Technology Assessment, 1999; Accident Compensation Corporation, 2004; Chou et al., 2007) recommend referral if low back pain is accompanied by “red flags” for serious pathology, pain unresponsive to a trial of conservative management, intolerable radicular pain despite medication, progressive paresis or severe paresis. A judgement that pain is intolerable is made by the patient (Danish Institute for Health Technology Assessment, 1999). Progressive paresis is motor deficit that

deteriorates within a few days (Balagué et al., 2001). The Medical Research Council (MRC) grades for motor deficit are (0) complete paralysis, (1) flicker of contraction, (2) active movement with gravity eliminated, (3) active movement against gravity and (4) active movement against gravity with resistance (O'Brien, 2010). Normal power is MRC Grade 5. Referral for surgical assessment is recommended if the MRC Grade is less than three (Balagué et al., 2001).

Referral of lumbo-sacral radiculopathy for surgical assessment and magnetic resonance imaging is under scrutiny as unnecessary referral is common. Eighty percent of physician referrals for magnetic resonance imaging and a similar percentage of referrals of lumbo-sacral radiculopathy for surgical assessment have been found to be unjustified (Huang et al., 2008; Webster et al., 2013). This is a problem as early imaging can result in the detection of unrelated abnormalities, with possible misinterpretation of such findings leading to over-testing and intensive interventions, factors linked to prolonged disability and higher total medical costs (Chou et al., 2012). Short-term benefits of surgery are reported but any long term advantage compared to conservative management of lumbo-sacral radiculopathy has not been clearly established (Chou et al., 2009). Reasons for unjustified referral include lack of awareness of referral guidelines, clinician concerns about the patient's condition, patient requests to be referred and economic incentives (Webster et al., 2013).

The purpose of this report is to present a patient with lumbo-sacral radiculopathy along with the referral decision-making

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process used in the case that informed the decision not to refer (Fig. 1). The aim is to increase awareness of referral guidelines and to demonstrate radicular pain and weakness, disability and depression outcomes subsequent to primary care management. The patient has given consent for this report to be published.

**2. Case report**

*2.1. History*

A 46-year-old male of Māori and New Zealand European ethnicity self-referred to the physiotherapy clinic and reported a constant ache 7/10 Verbal Analogue Scale (VAS) in the right lower lumbar region and right lower limb (Fig. 2). The onset of symptoms, seven weeks prior, occurred during a lift with a twist to the left when moving heavy tent poles. The patient's main complaint was disturbed sleep due to increased right lower limb pain VAS 9/10, in the early hours of each morning. Difficulty was reported with walking in the office, standing after sitting and lifting at work. Regular recreational walks were no longer possible. Stretching eased the pain though no specific details about this could be elicited. There were no sensory complaints or reports of tripping.

The patient described good general health with occasional mild asthma managed with Ventolin. For the current episode no other consultations had occurred and, in accordance with the patient's preference, no over-the-counter or prescription pain relievers had been taken. One previous episode of low back pain 12 years prior had

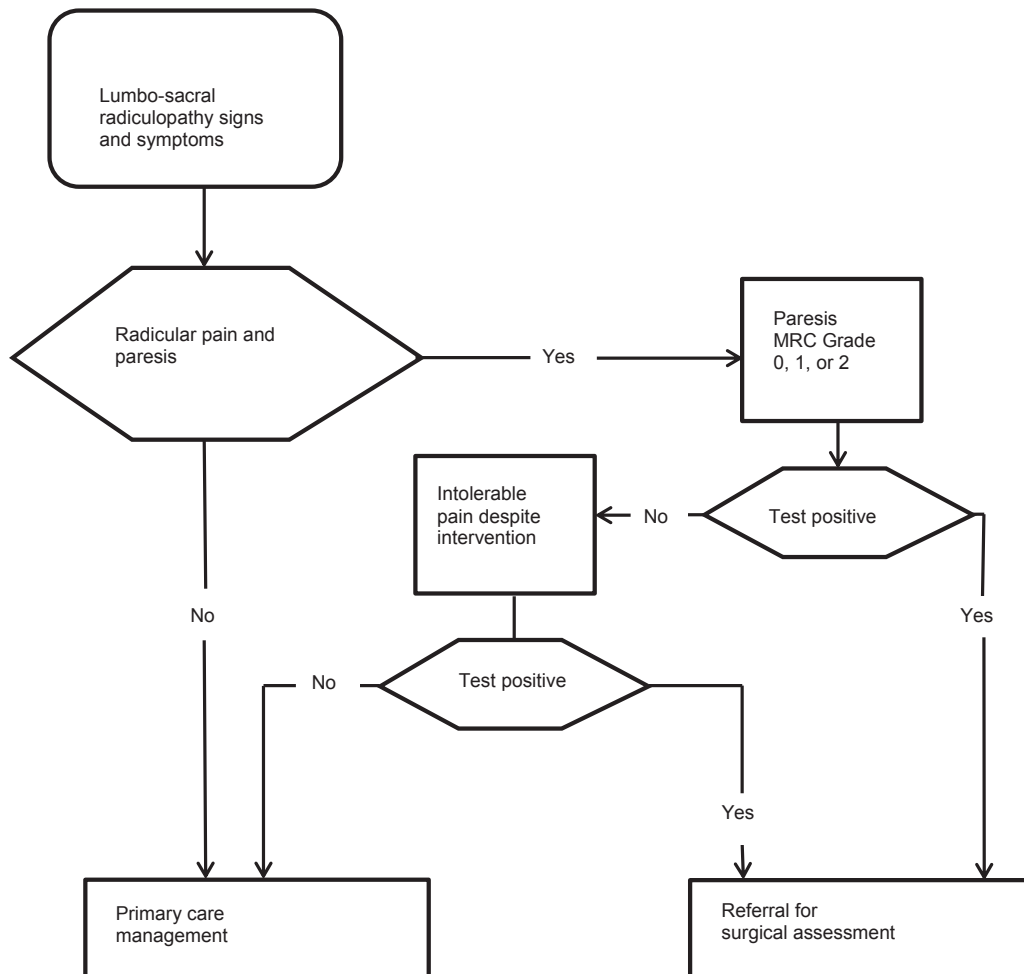
fully resolved and there was no history of surgery for back pain or any other medical condition. There were no recognised red flags such as history of cancer, fever, weight loss, recent infection, immunosuppression, cord signs or bilateral symptoms (Leerar et al., 2007).

*2.2. Physical examination findings*

Physical examination demonstrated the following signs:

- Observation revealed a lumbar scoliosis with the curve apex on the left lumbar (L) 2–4 and right side gluteal atrophy.
- Active lumbar movements were reduced by 10% on left sidebend, by 50% on right sidebend and by 90% on extension. The spine deviated to the left on flexion and flexion was reduced by 50%.
- Active lumbar movements, left sidebend, extension and flexion increased right lower limb pain
- Manual muscle testing showed paresis (MRC Grade 3) of right side Tibialis Anterior upon foot inversion and right side Extensor Hallucis upon big toe extension,
- Right side straight leg raising was reduced by 40% and provoked pain to the right postero-lateral calf and lateral ankle (VAS 9/10), and
- 'Bowstring' palpation of the right sciatic nerve at the popliteal fossa provoked right calf and ankle pain (VAS 9/10).

Manually assisted movements are highlighted as a relative contraindication in cases similar to this where deterioration in



**Fig. 1.** The application of radicular pain and paresis guideline recommendations to the surgical referral decision in the reported case of lumbo-sacral radiculopathy.

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