



Scott Masters
Rachel Lind

Musculoskeletal pain

Presentations to general practice

Background

In order to understand more about pain presentations in primary care, the authors undertook a descriptive study on musculoskeletal pain presentations to a general practice with a special interest in musculoskeletal medicine.

The aim was to describe and categorise musculoskeletal pain presentations into pain subtypes.

Methods

Over a 5 week period in 2009, 133 consecutive musculoskeletal pain patients consented to participate in a study on pain presentations. Patients were categorised into: somatic, somatic referred, neuropathic or a combination of these. Further information was collected on age, gender, length of attendance, mode of referral, and current pain history.

Results

Patients were predominantly female with chronic pain problems. Somatic low back pain was the commonest pain presentation. Neuropathic pain was a feature of 25% of cases, with pure somatic referred pain presenting in 1 in 7 cases. Nearly half of the patients were referred by their usual general practitioner.

Discussion

Differentiating pain types is important in pain management. Neuropathic and somatic referred pain are common presentations to primary practice but may be difficult to detect. Data on pain presentation subtypes in primary practice is important to inform medical educators and research organisations and instruct future planning for primary care.

Keywords: musculoskeletal diseases; chronic disease; back pain; neck pain; neuropathic pain; somatic referred pain



Although musculoskeletal problems are the third most common reason for visiting general practice,¹ there is scant literature on the nature of these presentations.

While some population studies have reported on the prevalence of neuropathic pain,^{2,3} there is a lack of data differentiating musculoskeletal pain presentations into somatic, somatic referred or neuropathic categories. Data on pain subtype prevalence in the general practice setting is important as it will instruct further management of pain and will assist in improving guidelines and protocols for general practitioners.

Somatic pain refers to pain arising from the body wall, not the viscera. Referred pain is pain perceived in a region innervated by nerves other than those innervating the source of the pain. Somatic referred pain is explicitly somatic pain that becomes referred. The term is used to distinguish referred pain that arises from the musculoskeletal tissues of the body from visceral referred pain. Neuropathic pain is pain caused by a lesion or dysfunction of the peripheral or central nervous system. They are distinguished on clinical grounds.⁴

Differentiating pain types is important in clinical practice. For example, children who present with knee pain may have hip pathology, adults presenting with burning pain in the trunk may have shingles, and patients presenting with chest and abdominal pain may have spinal dysfunction.

Current guidelines impress upon doctors to collect this information when taking an acute pain history.⁵ Therefore recording this data would seem a critical step in making an accurate diagnosis and avoiding the need for expensive and perhaps futile investigations. Considering the \$34 billion per annum that chronic pain costs the Australian economy,⁶ accurate identification

of the type of pain and its anatomic distribution should be a compulsory first step of management.

Methods

Setting

The data was collected at Caloundra Spinal & Sports Medicine Centre, a specialised musculoskeletal medicine centre (which is part of a general practice) in Caloundra, Queensland. Patients presented from around southeast Queensland including Hervey Bay to the north, Gold Coast to the south, and Kingaroy to the west.

Subject selection

All patients with musculoskeletal complaints seen by a GP with postgraduate qualifications in musculoskeletal medicine (Diploma and Fellowship) at Caloundra Spinal & Sports Medicine Centre during a 5 week period in January and February 2009 were eligible for inclusion in this review.

Patients were included if attending specifically for a musculoskeletal problem, whether new or longstanding. Patients presenting to the practitioner for nonmusculoskeletal complaints were excluded. No patients refused consent to be involved in the study.

Data collection

Patients completed a screening questionnaire for neuropathic pain, the Doleur Neuropathique en 4 (DN4);⁷ a tool using seven interview questions and three physical tests (*Table 1*). A score of 4/10 or greater indicates neuropathic pain. Patients also underwent a full pain history and examination, as deemed necessary by the practitioner. Data collected included: age, gender, length of attendance, primary problem area, mode of referral, duration of problem, and current pain history including self rated pain severity on a numerical analogue scale. Based on the

Table 1. DN4 questionnaire⁷

To estimate the probability of neuropathic pain, please answer 'yes' or 'no' for each item of the following four questions.

Question 1	YES / NO
Does the pain have one or more of the following characteristics?	
Burning	<input type="checkbox"/> <input type="checkbox"/>
Painful cold	<input type="checkbox"/> <input type="checkbox"/>
Electric shocks	<input type="checkbox"/> <input type="checkbox"/>
Question 2	YES / NO
Is the pain associated with one or more of the following symptoms in the same area?	
Tingling	<input type="checkbox"/> <input type="checkbox"/>
Pins and needles	<input type="checkbox"/> <input type="checkbox"/>
Numbness	<input type="checkbox"/> <input type="checkbox"/>
Itching	<input type="checkbox"/> <input type="checkbox"/>
Question 3	YES / NO
Is the pain located in an area where the physical examination may reveal one or more of the following characteristics?	
Hypoesthesia to touch	<input type="checkbox"/> <input type="checkbox"/>
Hypoesthesia to pinprick	<input type="checkbox"/> <input type="checkbox"/>
Question 4	YES / NO
In the painful area, can the pain be caused or increased by brushing?	
Yes = 1 point No = 0 points	Patient's score: /10

history, examination and the DN4 screening tool (validated for research),^{7,8} a clinical decision by the musculoskeletal doctor was made as to the type of pain the patient was experiencing: somatic, somatic referred, neuropathic (including radicular), or a mixture of these.

Data analysis

Data were collated using Microsoft Excel. Where appropriate, data were presented in graph form and described according to means, medians and proportions.

Approval for this research was granted by Griffith University Human Research Ethics Committee.

Results

One hundred and thirty-three consecutive patients with musculoskeletal pain agreed to participate in the study.

Patients were predominantly female (62%) with ages ranging from 12–85 years (Figure 1). Over half of the sample were 55 years of age and over.

Duration

The duration of the presenting complaint varied from 2 days to 60 years. The median duration was 1 year. Sixteen percent were acute pain patients (12 weeks or less) while 63% had pain of 1 year or longer.

Thirty percent of patients were new to the practice, 16% were previous patients who were presenting with a new complaint, while the remainder (54%) were attending for continuing care of an existing problem.

Area of pain

Eighteen separate pain regions were identified (Figure 2). Patients were asked to mark the centroid of their main pain on the pain map and then indicate which other body parts the pain spread toward. The most common site was the lower back with or without radiation to the leg (31%), followed by the shoulder (15%) and neck (10%).

Patients identified as having multiple regions of pain (14%) had each region entered individually into the database. Overall there were 207 pain sites identified for 133 patients

Referral

Almost half of the patients were referred by their GP. Other common methods of referral were self referral (21%) and from physiotherapists (10%) (Figure 3).

Pain as result of injury

One-third of patients identified their problem as being the result of an injury. Over 50% of the

injuries were related to moving and handling, falls and road traffic accidents. Around 10% were sustained during sporting activity.

Severity of pain

One hundred and thirty-one patients entered a score on the numerical analogue pain scale, the mean score being 5.3 (out of 10).

Type of pain

The most common type of pain was somatic at just over 50% of cases. Somatic referred and neuropathic made up 13% and 8% respectively, with the remaining 29% of cases having mixed pain types. Of the patients displaying features of mixed pain types, mixed somatic/neuropathic were almost two-thirds and somatic/somatic referred were just over one-third. The total number of patients presenting with neuropathic pain as part of their pain problem represented 25% of the total.

A subgroup of the neuropathic pain was radicular pain, which made up 20% of all the neuropathic pain cases and 5% of the total pain cases. All the radicular pain cases involved the lower limb. Figure 4 shows the breakdown for pain subtypes.

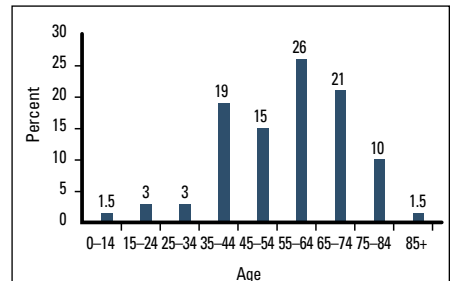


Figure 1. Age range of musculoskeletal patients presenting to clinic

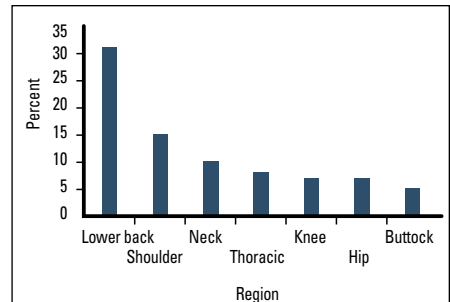


Figure 2. Top seven pain regions presenting to clinic as % of total

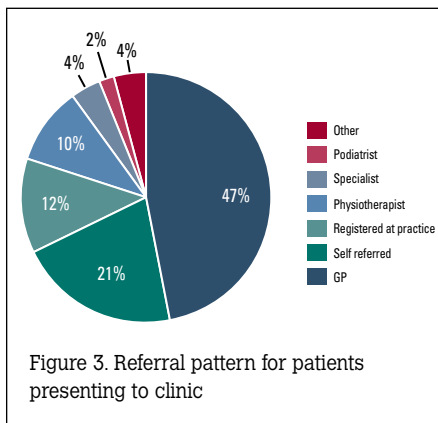


Figure 3. Referral pattern for patients presenting to clinic

Discussion

The most common reason for presentation to a musculoskeletal medicine practice is persistent somatic low back pain. Women make up almost two-thirds of the presentations. One quarter of the presentations involved neuropathic pain. Almost 1 in 7 presentations was for somatic referred pain.

The majority of patients were referred from their primary GP with the remainder referred from specialists or other health professionals or self referred. Overall most problems were due to persistent pain of moderate pain intensity.

There is currently little, if any, published data examining primary care presentations in terms of pain subtypes. Considering the importance of making an accurate pain diagnosis, this lack of data seems a major oversight. This concern has been raised elsewhere, particularly with regard to preventing mismanagement, minimising iatrogenic problems and improving the quality of research.⁹

The need for better awareness of somatic referred pain by primary health providers has been strongly promoted by others.¹⁰ With nearly 1 in 7 presentations in this study being purely somatic referred pain, it suggests this problem is common. Lack of recognition by primary care doctors could lead to delayed diagnosis and inappropriate treatments in these patients. It has recently been pointed out that mismanagement of somatic referred pain is one of the common pitfalls in the management of chronic nonmalignant pain.¹¹ Potential advantages of early recognition of somatic referred abdominal, chest and limb pain include more appropriate use of investigations, better targeted management plans, and increased opportunity to lessen disability with an earlier return to full duties both at work and in recreation.

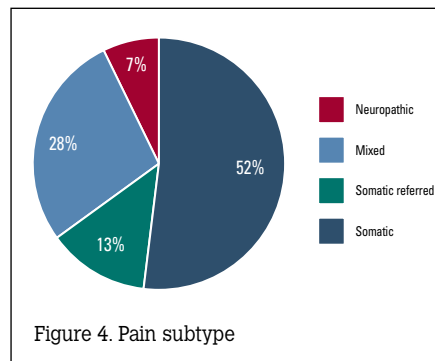


Figure 4. Pain subtype

Somatic low back pain was the commonest single pain presentation in this study. Early recognition of acute somatic low back pain and application of evidence based management has been shown to result in less investigation, less ongoing health care needs, less use of medication with less health expenditure and better outcomes in terms of pain, disability and return to work.^{12,13} Despite this, there still has been no coordinated training of practitioners or students in these proven management guidelines. Guidelines for the other common regions (neck, shoulder, thoracic, knee, hip and buttock) should also be tested and if found to be advantageous then actively promulgated throughout primary care health centres.

Neuropathic pain has distinct diagnostic and management features yet is often misdiagnosed and mismanaged.¹⁴ Diagnosis of neuropathic pain is mainly reliant on a detailed history with subsequent confirmation by examination. Our data suggest that this is a frequent problem in primary practice. European authors have recently focused on the importance of the recognition of neuropathic pain in primary practice and the central role GPs have yet to fulfil in the management of neuropathic pain.¹⁵

In Australia there is recognition that current undergraduate training of musculoskeletal medicine is inadequate to meet the current and future needs of our population.¹⁶ There is also awareness of an urgent need to boost primary health care knowledge about pain and pain management.⁶ It is apparent in this study that of all referral sources, GPs were most likely to refer patients to a special interest GP for assistance in managing musculoskeletal pain. Better use of special interest GPs for training health professionals may be one way to meet these shortcomings.

Limitations of this study

The main limitation to this study is that it has relied on only one general practice to collect its data and it may not be representative of the broader population. As this particular practice sees many patients presenting with pain, relatively quick collection of a sizeable database was made possible. However, half of the patients were referred from their usual GP so it is likely these patients were more complex than is usual and not representative of most primary practices, with potentially more similarities to secondary care presentations. The extent to which our findings can be generalised to other primary care practices requires further study. It does however give some insights to the type of more complex pain problems that are requiring ongoing care outside the hospital/specialist setting.

Limitations exist in the measuring tools used in this study. The DN4 has level 4 evidence for its use and, while it has not been formally validated specifically for use in English speaking primary care, it is a widely used and recommended tool.⁵ The diagnosis of pain subtypes was performed by the lead author. This was done after collection of a full pain history, examination and completion of the DN4. Independent verification of the diagnosis did not occur which is a potential source of bias.

Implications for practice

- Neuropathic pain is common and may be mixed with somatic pain.
- Somatic referred pain is not uncommon, but has the potential for misdiagnosis.
- There may be potential for increased education to primary care providers in diagnosis of different pain subtypes.
- Further research into the role of postgraduate musculoskeletal trained GPs and their utility in primary health care pain management may be warranted.

Authors

Scott Masters MBBS, FRACGP, FAFMM, is Director, Caloundra Spinal and Sports Medicine Centre, Queensland. standeven@optusnet.com.au
Rachel Lind MBChB, is an intern, Victoria Hospital, Kirkcaldy, United Kingdom.

Conflict of interest: none declared.

References

1. Britt H, Miller GC, Charles J, et al. General practice activity in Australia, 2008–09. 2009 General Practice Series no. 25. Cat. no. GEP 25. Canberra: AIHW. Available at www.aihw.gov.au/publications/index.cfm/title/11013 [Accessed 22 January 2010].
2. Bouhassira D, Lantéri-Minet M, Attal N, Laurent B, Touboul C. Prevalence of chronic pain with neuropathic characteristics in the general population. *Pain* 2008;136:380–7.
3. Toth C, Lander J, Wiebe S. The prevalence and impact of chronic pain with neuropathic pain symptoms in the general population. *Pain Med* 2009;10:918–29.
4. Merskey H, Bogduk N. Classification of chronic pain. 2nd edn. IASP Task Force on Taxonomy. Seattle: IASP Press, 1994.
5. Australian and New Zealand College of Anaesthetists and Faculty of Pain Management. Acute pain management: scientific evidence. 2nd edn. Melbourne: ANZCA, 2005. Available at www.anzca.edu.au/resources/books-and-publications/acutepain.pdf [Accessed 19 January 2010].
6. National Pain Summit. Draft National Pain Strategy. Melbourne: ANZCA, 2010, page 5. Available at www.painsummit.org.au/strategy/Strategy_NPS.pdf/view [Accessed 19 March 2010].
7. Bouhassira D, Attal N, Alchaar H, et al. Comparison of pain syndromes associated with nervous or somatic lesions and development of a new neuropathic pain diagnostic questionnaire (DN4). *Pain* 2005;114:29–36.
8. Bennett M, Attal N, Backonja M, et al. Using screening tools to identify neuropathic pain. *Pain* 2007;127:199–203.
9. Bogduk N. On the definitions and physiology of back pain, referred pain and radicular pain. *Pain* 2009;147:17–9.
10. Harding G, Yelland M. Back, chest and abdominal pain. Is it spinal referred? *Aust Fam Physician* 2007;36:422–9.
11. Cherry D. Managing chronic nonmalignant pain. *Med Today* 2009;10:36–40.
12. McGuirk B, King W, Govind J, Lowry J, Bogduk N. Safety efficacy and cost-effectiveness of evidence-based guidelines for the management of acute low back pain in primary care. *Spine* 2001;26:2615–22.
13. McGuirk B, Bogduk N. Evidence-based care for low back pain in workers eligible for compensation. *Occup Med* 2007;57:36–42.
14. Carter GT, Galer BS. Advances in the management of neuropathic pain. *Phys Med Rehabil Clin N Am* 2001;12:447–59.
15. Haanpaa ML, Backonja M, Bennett MI, et al. Assessment of neuropathic pain in primary care. *Am J Med* 2009;122:S13–21.
16. Chehade M, Bachorski A. Development of the Australian Core Competencies in Musculoskeletal Basic and Clinical Science project – phase 1. *Med J Aust* 2008;189:162–5.

correspondence afp@racgp.org.au