

A 79-year-old woman with chronic low back pain

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A whole person approach to the management of an elderly woman with chronic low back pain is discussed. This approach includes weaning of opioid medication, active self-management and appropriate support.



Case scenario

A 79-year-old widow, who lives independently, has chronic low back pain and lumbar spinal canal stenosis documented on magnetic resonance imaging. She has been reviewed by an orthopaedic surgeon and neurosurgeon. She presents to you, her GP, today reporting constant, diffuse, aching pain in the low back, which is exacerbated by prolonged standing and walking. On examination she walks slowly with poor balance. She is slow on sit-to-stand testing. There is no evidence of neurological deficit in her legs.

The patient is unwilling to undergo an operation. She has well-controlled hypertension and is taking a combined ACE inhibitor and a diuretic preparation. Currently the back pain is treated with 16 mg hydromorphone controlled release once daily and occasional paracetamol. However, her daughter, a pathologist, is concerned that her mother is taking an opioid and even more concerned that her mother is becoming forgetful. Could the drug be contributing? The patient has been taking hydromorphone at this dose for over eight months, after trialing a variety of other analgesics, including oxycodone, which had given her unpleasant side effects. On two occasions she has tried to wean off the hydro-morphone but the ensuing back pain severely limited her independence.

She still does volunteer work reading to local schoolchildren and her eldest son, who recently separated from his wife, has come to live with her.

Should this patient continue taking the opioid or are there better alternatives that could provide analgesia?

Key points

- Nervous system sensitisation is the predominant contributor to many chronic pain states.
- Significant benefit from pharmacological therapy is unlikely in this case of an elderly woman with chronic low back pain, or in any other case of chronic pain.
- A whole person management approach incorporating gradual medication weaning and support to develop active self-management strategies is recommended for this case.
- Social connection, psychological strategies, physical activity and nutrition are core components of the self-management approach.

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Commentary

Diagnostic formulation

This woman's pain is not consistent with the diagnosis of lumbar spinal canal stenosis, which typically produces neuropathic leg pain associated with sensory changes (numbness and paraesthesias) and weakness exacerbated by walking or hyperextension of the lumbar spine. Urinary and/or faecal incontinence can also be part of the picture (cauda equina syndrome).

The clinical presentation in this patient does not correlate with the findings on imaging, as often occurs in cases of low back pain.¹ The structural abnormality is essentially a 'red herring'. Many elderly people with similar changes on imaging do not have pain.

It is likely that her pain relates more to nervous system sensitisation than structural change. That being said, it is possible that there may be a structural contribution, for example, from degenerative facet (zygapophysial) joints, but any ascending sensory (nociceptive) neural impulses from these joints are not 'pain' until they are interpreted as such by the brain.

Nervous system sensitisation is the predominant contributor to many chronic pain states² and is often associated with sociological,^{3,4} nutritional^{5,6} and psychological stressors,^{7,8} and physical inactivity.^{9,10} The limited history provided lacks important information about this patient's life timeline. A key question to ask her is 'What else was happening around the time the pain began?' One possibility is that the son's marital breakup and move into his mother's home may have been a source of stress. Another possibility relates to the death of her husband. The emotional impact of such situations can play a role in nervous system sensitisation and the onset or exacerbation of pain.

The patient has been on the current dose of hydromorphone for eight months. The daily oral morphine equivalent dose is 80 mg (using a conversion factor of five). Current evidence suggests that this is unlikely to be helping at this point and, furthermore, there is substantial risk of harm.¹¹ Possible harms include opioid-induced bowel dysfunction, sedation, clouded cognition,

hypopituitarism, worsening sleep apnoea, driving impairment, opioid-induced hyperalgesia, opioid dependency/addiction, validation of illness role and distraction from active self-management strategies. In this case, it is likely that the opioid is contributing to her forgetfulness. The two previous opioid weaning attempts are noted. If weaning occurs too quickly then opioid withdrawal (at times subclinical) can exacerbate pain.¹² In addition, if the patient is fearful of dose reduction then this in itself can also contribute to worsening pain. Other potential lifestyle contributors to her pain include low physical activity, lack of strength and poor diet.¹³

The diagnostic formulation seeks to identify the often multiple contributors to chronic pain. In addressing any or all of these factors, the aim is to reduce nervous system sensitisation and with it pain intensity.

Treatment recommendations

A whole person chronic pain management approach is recommended for this patient and involves:¹⁴

- active self-management strategies (to retrain the brain and reduce pain)
- weaning of pain medications (which generally become ineffective over time)
- appropriate support.

Any variation from such a plan can be discussed with a pain medicine or other relevant specialist. However, from the information provided the standard approach is appropriate in this case.

Surgery

Indications for lumbar spinal surgery include spinal instability and radicular leg pain in carefully selected patients. This patient does not have these indications and her 'unwillingness' to undergo surgery is thus supported by the evidence base.

Medication

Evidence shows that significant benefit from pharmacological therapy in this case of chronic low back pain is unlikely, as is the case for chronic pain in general.^{11,15} Furthermore, the risk of harm is comparatively high.

However, if this patient were to develop an acute pain problem or enter a palliative phase, the use of pharmacotherapy is supported by evidence.¹¹ Entry to a palliative phase is not precisely defined in the elderly. However, the therapeutic focus moves from functional improvement to reduction in distress.

NSAIDs are unlikely to produce ongoing analgesic benefit in this patient. There is also a significant risk of drug interactions. NSAIDs attenuate the antihypertensive effect of ACE inhibitors. In addition, the 'triple whammy' combination of an NSAID, an ACE inhibitor and a diuretic increases the risk of acute renal failure, especially in the elderly.

Paracetamol has less toxicity than pharmacological alternatives other than in overdose or in people with hepatic impairment. However, there is a lack of evidence supporting its long-term efficacy.

There is no evidence to support the use of antineuropathic agents, including antidepressants and gabapentinoids, in this case. In the pharmacological treatment of confirmed neuropathic pain, which this patient does not have, the numbers needed to treat for 50% pain reduction over the short term are only in the range of 4 to 10.¹⁵ In this case, in which nervous system sensitisation rather than damage is the predominant mechanism, the likelihood of benefit is even less. The risk of adverse effects from these drugs in an older population is high.

There is no evidence to suggest that opioids are any more effective in older people with chronic pain than in younger cohorts. On the other hand, the risk of falls and cognitive impairment is greater. A detailed history of the two previous weaning attempts is essential. The guiding principle for a third attempt is that it needs to occur more slowly than previously and with appropriate patient and family education and support. An example of weaning would be to reduce in monthly steps to hydromorphone controlled release 12 mg daily, 8 mg daily, 4 mg daily, 4 mg on alternate days and then cessation. This four-month wean approach provides an opportunity to develop active self-management strategies.

Online resources for patients with pain

Hunter Integrated Pain Service
www.hnehealth.nsw.gov.au/pain

NSW Pain Management Network
www.aci.health.nsw.gov.au/chronic-pain

YouTube 'Understanding pain: what to do about in less than 5 minutes'
www.youtube.com/watch?v=4b8oB757DKc (developed by John Hunter Hospital, Newcastle NSW, in collaboration with Hunter Medicare Local)

Active self-management

Although biomedical intervention can be considered a component part of the whole person approach, the main focus is on active self-management. Evidence suggests that an active approach can be used to wind down a sensitised nervous system over time to reduce pain. Social connection, psychological strategies, physical activity and nutrition are core components of the overall approach. Given this patient's literacy and social functioning, she is likely to be motivated and able to engage in self-management if appropriately directed. Her GP has a key role in monitoring her progress with self-management.

The aspect of social connection needs to be explored. Changes in this area, for example, in her relationship with her son, have the potential to reduce stress, nervous system sensitisation and pain.

Psychological factors have been mentioned in the diagnostic formulation. Depending on the situation and patient preference, the patient could trial mindfulness¹⁶ or work on awareness of the link between times of emotional stress and onset of pain.¹⁷ She could access support online (see Box) or see a community psychologist.

Physical inactivity may be contributory to her array of health problems. A planned program to improve physical activity, perhaps guided by a hands-off physiotherapist or exercise physiologist, may help. Age-adjusted high-intensity aerobic exercise has been shown to reduce pain and stress levels.¹⁸

The patient's nutritional status needs careful assessment. A poorly balanced diet can contribute to neural sensitisation. Making improvements in this area has the potential to reduce pain over the longer term.¹⁹

Summary

Pharmacotherapy is not recommended in this case. A whole person approach to management is recommended, incorporating gradual medication weaning and support to develop active self-management strategies. This approach has the greatest likelihood of reducing pain and improving quality of life in this patient. However, the balance of therapy can be redirected if a new acute pain problem develops or if she enters a palliative phase. If either of these scenarios occur, the use of medication can have a greater role.

PMT

References

1. Sirvanci M, Bhatia M, Ganiyusufoglu KA, et al. Degenerative lumbar spinal stenosis: correlation with Oswestry Disability Index and MR imaging. *Eur Spine J* 2008; 17: 679-685.
2. Phillips K, Clauw DJ. Central pain mechanisms in chronic pain states – maybe it is all in their heads. *Best Pract Res Clin Rheumatol* 2011; 25: 141-154.
3. Eisenberger NI, Lieberman MD, Williams KD. Does rejection hurt? An fMRI study of social exclusion. *Science* 2003; 302: 290-292.
4. Eisenberger NI. The neural bases of social pain: evidence for shared representations with physical pain. *Psychosom Med* 2012; 74: 126-135.
5. Esposito K, Giugliano D. Diet and inflammation: a link to metabolic and cardiovascular diseases. *Eur Heart J* 2006; 27: 15-20.
6. Seaman DR. The diet induced pro-inflammatory state: a cause of chronic pain and other degenerative diseases? *J Manipulative Physiol Ther* 2002; 25: 168-179.
7. Baliki MN, Chialvo DR, Geha PY, et al. Chronic pain and the emotional brain. *J Neuroscience* 2006; 26: 12165-12173.
8. Baliki MN, Petre B, Torbey S, et al. Corticostriatal functional connectivity predicts transition to chronic back pain. *Nature Neuroscience* 2012; 15: 1117-1119.
9. Sluka KA, O'Donnell JM, Danielson J, Rasmussen LA. Regular physical activity prevents

- development of chronic pain and activation of central neurons. *J Appl Physiol* 2013; 114: 725-733.
10. Ellingson LD, Shields MR, Stegner AJ, Cook DB. Physical activity, sustained sedentary behavior and pain modulation in women with fibromyalgia. *J Pain* 2012; 13: 195-206.
11. Reconsidering opioid therapy. Available online at: http://www.hnehealth.nsw.gov.au/___data/assets/pdf_file/0007/76039/Reconsidering_opioid_therapy_May_2014.pdf (accessed July 2014).
12. Wanigasekera V, Lee MCH, Rogers R, et al. Neural correlates of an injury-free model of central sensitization induced by opioid withdrawal in humans. *J Neuroscience* 2011; 31: 2835-2842.
13. Hayes C, Naylor R, Egger G. Understanding chronic pain in a lifestyle context: the emergence of a whole person approach. *Am J Lifestyle Med* 2012; 6: 421-429.
14. Hayes C, Hodson F. A whole person approach to persistent pain: from conceptual framework to practical application. *Pain Medicine* 2011; 12: 1738-1749.
15. Reconsidering drug therapy for neuropathic pain, CRPS and fibromyalgia. Available online: http://www.hnehealth.nsw.gov.au/___data/assets/pdf_file/0018/53307/Reconsidering_drug_therapy_for_neuropathic_pain_CRPS_and_fibromyalgia_Mar_2014.pdf (accessed July 2014).
16. Kabat-Zinn J. An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: theoretical considerations and preliminary results. *Gen Hosp Psychiatry* 1982; 4: 33-47.
17. Broom B. *Meaning-full disease*. London: Karnac Books; 2007.
18. Chatzitheodorou D, Kabitsis C, Malliou P, Mougios V. A pilot study of the effects of high-intensity aerobic exercise versus passive interventions on pain, disability, psychological strain and serum cortisol concentrations in people with chronic low back pain. *Phys Ther* 2007; 87: 304-312.
19. Health Hunter New England Local Health District. Nutrition and pain, March 2014. Available online at: http://www.hnehealth.nsw.gov.au/___data/assets/pdf_file/0020/28145/Nutrition_and_pain_March_2014.pdf (accessed July 2014).

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