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Successful opioid tapering using a non-pharmacological approach in chronic pain: a case report

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Abstract

Chronic pain in older adults is a major clinical challenge due to its high prevalence, complex pathophysiology, and frequent impact on function and quality of life. Polypharmacy and prolonged analgesic use, particularly opioids, often complicate management, leading to dependence and adverse effects. We report the case of a 75-year-old woman with chronic low back pain associated with significant functional impairment and opioid dependence. A multimodal, patient-centered approach was implemented, including gradual morphine tapering, transcutaneous electrical nerve stimulation, functional rehabilitation, and structured psychological support. This integrated strategy aimed to control pain while improving mobility and autonomy and addressing psychological dimensions of chronic pain. The patient showed a favorable evolution, with reduced pain intensity, improved functional capacity, and decreased reliance on opioids. Functional autonomy improved the Instrumental Activities of Daily Living score from 4/8 to 6/8; transition from *Groupes Iso-Ressources* 2 to 4, along with social reintegration. She also reported a subjective improvement in quality of life and increased engagement in her care. This case emphasizes the value of multimodal, non-pharmacological strategies and individualized, function-oriented management in older adults with chronic pain.

Key words: chronic low back pain, older adults, TENS, opioids, case report.

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Introduction

Chronic pain is highly prevalent among older adults and represents one of the leading causes of functional limitation and loss of autonomy. Beyond its high frequency, it is increasingly recognized as a multidimensional condition that affects not only physical functioning but also psychological well-being and social participation.[1] While prevalence is typically estimated to be between 50% and 60%, it is probably lower than it really is in the most at-risk groups, especially in patients who have trouble communicating or thinking.[2] Chronic pain has also been shown to negatively impact self-management capacities in patients with comorbid conditions, such as diabetes or heart disease, further contributing to functional decline and poorer health outcomes.[3]

In this context, pharmacological treatments, particularly opioids, remain widely used. However, their long-term use in older adults raises significant concerns due to the increased risk of adverse effects, including dependence, sedation, confusion, and gastrointestinal complications. Age-related changes in pain perception and tolerance further complicate management, as they may alter both symptom expression and therapeutic response,[2] making it critical to think about individualized treatment plans that account for these variations in older adults.

These limitations emphasize the necessity of alternative strategies that are not only effective but also better tolerated and more closely aligned with functional goals.

Non-pharmacological approaches have progressively become central to the management of chronic pain in older adults. Adapted physical activity plays a key role in improving functional capacity and interrupting the cycle of pain-related inactivity. Evidence suggests that structured exercise programs can positively influence symptom severity and overall activity levels, thereby contributing to improved quality of life.[4,5] In parallel, mind-body interventions, including cognitive behavioral therapy, relaxation techniques, and hypnosis, have demonstrated efficacy in reducing pain perception and associated symptoms such as insomnia, fatigue, and depression.[1,6] These approaches are particularly relevant in older populations, where the psychological and emotional dimensions of pain are often prominent, as they can help address both the physical and mental health challenges faced by this demographic.

In addition, multidisciplinary and case management approaches have shown promising results in optimizing care for chronic conditions, including musculoskeletal pain, by improving coordination and patient engagement.[7] Neuromodulation techniques, such as transcutaneous electrical nerve stimulation (TENS), further expand the therapeutic arsenal. By activating large-diameter afferent fibers and modulating descending inhibitory pathways, TENS offers a non-invasive and well-tolerated option for pain control, particularly suited to older patients in whom pharmacological burden should be

minimized.[6] Complementary therapies such as hydrotherapy have also demonstrated beneficial effects on pain and functional outcomes in chronic conditions, particularly in improving mobility and reducing discomfort in patients with arthritis and fibromyalgia.[8]

Taken together, these findings support the growing consensus that multimodal, individualized approaches represent the most effective strategy for managing chronic pain in older adults.

The present case is particularly instructive, as it illustrates the transition from prolonged opioid dependence to an integrated non-pharmacological strategy, resulting in significant and sustained clinical improvement.

Case Report

Patient information

The patient is a 75-year-old woman who has been followed for chronic low back pain that has evolved for more than 10 years. This persistent pain progressively impaired her mobility and autonomy in daily living activities, becoming a major source of functional limitation. Clinically, she described constant mechanical low back pain, exacerbated by physical activity, and associated with a gradual decline in physical capacity.

Her medical history included atrial fibrillation, obstructive sleep apnea syndrome, active smoking, and a history of coronary angioplasty, performed in 2018. She also had untreated hypothyroidism at the time of evaluation. She weighed 65 kg for a height of 165 cm, corresponding to a body mass index of 23.9 kg/m^2.

She had a prior history of lumbar spine surgery consisting of a decompressive laminectomy, which she experienced as unsuccessful and after which she declined further surgical intervention. At the time of evaluation, she was not considered a candidate for additional surgery due to the absence of a clearly compressive or surgically correctable lesion, the chronicity of symptoms, and significant functional deconditioning.

From a therapeutic perspective, she was receiving high-dose prolonged-release morphine with rescue doses. The patient was receiving prolonged-release morphine sulfate at a dose of 80 mg twice daily (160 mg/day), associated with immediate-release morphine at 20 mg per breakthrough episode, resulting in a total daily opioid consumption of approximately 240 mg of oral morphine equivalents. Although initially effective, this regimen had progressively led to dependence and prompted the patient to request a reduction in treatment.

The patient had progressively withdrawn socially due to chronic pain, leading to reduced communication with her family.

Clinical findings

At the initial evaluation, the patient exhibited marked limitations in spinal mobility, with low back pain rated at 7/10 on the numerical rating scale. The pain significantly affected walking, transfers, and daily activities. Clinical examination revealed mechanical pain reproduced by movement, without associated neurological deficits.

At baseline, the patient had experienced a marked decline in functional autonomy, with progressive loss of independent ambulation and use of a wheelchair for daily mobility prior to initiation of the multimodal rehabilitation program.

Timeline

The low back pain developed gradually over more than 10 years, with a slow but continuous increase in intensity. Over time, therapeutic escalation led to progressive opioid dose increases. At the time of specialized consultation, the patient reported persistent disabling pain and clearly expressed a desire to reduce her medication. The early course after the introduction of a multimodal strategy was marked by rapid improvement in functional tolerance and progressive pain reduction.

Diagnostic assessment

The evaluation was primarily based on clinical examination and standardized pain assessment scales. Previous imaging and complementary investigations were consistent with degenerative chronic low back pain. The main diagnostic challenge was distinguishing structural pain from the component induced or amplified by prolonged opioid use. Differential diagnoses included a neuropathic component and functional deconditioning syndrome. The initial prognosis appeared guarded due to the chronic nature of the pain and established medication dependence.

Therapeutic intervention

Management relied on a comprehensive, progressive, and patient-centered strategy. A key element of the intervention was the patient's strong motivation to discontinue opioid therapy, which facilitated adherence to the multimodal program.

Opioid tapering was conducted progressively by reducing the daily morphine dose by 20 mg per step until complete discontinuation. The pace of reduction was adjusted according to clinical tolerance, pain intensity, and the absence of withdrawal symptoms, with close clinical monitoring throughout the process.

At the same time, a structured TENS program was introduced as a key non-pharmacological modality. The patient was educated on its use to promote adherence and autonomy, allowing regular self-administered analgesia through neuromodulation mechanisms.

The use of TENS was also supported by local clinical practice within the rehabilitation team, where it is routinely applied as a non-pharmacological alternative to opioids prior to mobilization or nursing care.

The patient placed TENS electrodes over the lumbar region and individualized the stimulation intensity after initial supervised training. The patient used the device daily for approximately 20-30 minutes per session. A rapid clinical response was observed, and significant improvement was reported after the first 2 days of use, allowing early resumption of ambulation with a walking cane. She also rapidly gained autonomy in adjusting the device independently.

This approach was integrated into a multidisciplinary care pathway combining physiotherapy, occupational therapy, and structured psychological support.

After complete discontinuation of opioids, rescue analgesia consisted of paracetamol and nefopam, used on an as-needed basis. No reintroduction of opioid therapy was required after discontinuation, and pain remained manageable under non-opioid analgesics.

Follow-up and outcomes

Clinical evolution was favorable in the first few weeks. The patient reported a significant reduction in pain intensity, from 7/10 to 3/10, along with marked improvement in mobility and autonomy.

Functional autonomy improved, with the Instrumental Activities of Daily Living (IADL) score increasing from 4/8 to 6/8 and a transition from *Groupes Iso-Ressources* (GIR) 2 to GIR 4. The GIR classification is a French national scale used to assess dependency and autonomy in older adults. GIR 1 corresponds to the highest level of dependency requiring continuous assistance, whereas GIR 6 indicates full independence. The transition from GIR 2 to GIR 4 therefore reflected a clinically meaningful improvement in the patient's autonomy and daily functioning.[9]

No additional laboratory or imaging investigations were required during follow-up, as assessment remained primarily clinical and functional. Tolerance to TENS was excellent, and adherence to the therapeutic program was satisfactory after an initial adaptation phase during opioid tapering. No significant adverse events were reported.

Overall, the patient demonstrated progressive functional recovery, including restoration of ambulation with a walking aid and improved independence in daily activities. Opioid therapy was successfully discontinued without withdrawal symptoms.

Discussion

This case provides a clear illustration of the value of a multimodal approach in managing chronic pain in older adults. The clinical improvement observed in our patient supports the growing body of evidence advocating for integrated strategies that combine pharmacological optimization with non-pharmacological interventions. These methods are especially pertinent in geriatric populations, where pain is multifactorial and intricately linked to functional decline, psychological distress, and social vulnerability. These findings are consistent with recent high-level evidence emphasizing that chronic low back pain should be managed using individualized, multimodal strategies rather than relying predominantly on pharmacological treatments.[10,11]

A key strength of this management lies in its individualized and comprehensive nature, targeting not only nociceptive mechanisms but also functional impairment and the cognitive-emotional dimensions of pain. Chronic pain in older adults is increasingly understood as a biopsychosocial phenomenon. Cognitive behavioral therapy and other interventions have been shown to be very helpful not only for pain intensity but also for related symptoms like insomnia, fatigue, and depression. This has led to an overall improvement in quality of life.[1] Recent meta-analyses further confirm the effectiveness of psychological interventions in chronic low back pain, particularly when integrated into multidisciplinary care models.[12]

Furthermore, age-related changes in pain perception and tolerance, as highlighted in neurobiological studies, may alter the clinical presentation and response to treatment in older patients.[2] This reinforces the need for tailored therapeutic strategies that go beyond standard pharmacological approaches, such as incorporating non-pharmacological interventions and personalized pain management plans that consider individual patient characteristics. In this context, reducing opioid exposure is of particular importance, given the well-documented risks of adverse effects and dependency in this population. Current clinical guidelines also recommend cautious use of opioids in chronic low back pain, highlighting their limited long-term efficacy and potential harms.[13] This case also raises important questions regarding the initial appropriateness of long-term opioid therapy in chronic non-cancer pain. In retrospect, the progressive dose escalation may not have reflected sustained nociceptive severity, but rather the development of tolerance and dependence without meaningful functional improvement.

Non-pharmacological interventions, including physical activity and rehabilitation, play a central role in restoring function and breaking the cycle of pain-related inactivity. The association between chronic pain and reduced physical activity has been clearly established, with inactivity contributing to further deconditioning and disability.[5] Structured exercise programs have been shown to improve both symptom severity and functional capacity, supporting their inclusion in multimodal care pathways.[4] International recommendations strongly support these approaches, identifying exercise and education as first-line treatments for chronic low back pain.[10]

In addition, broader non-pharmacological strategies, as highlighted in recent systematic reviews, demonstrate consistent benefits in older adults with chronic pain, particularly when interventions are combined rather than used in isolation.[6] Case management models that include care from many different fields have also been shown to work in improving outcomes for chronic conditions like diabetes and heart disease, which supports the approach taken in this case.[7] Recent overviews of Cochrane reviews confirm that combined non-pharmacological and non-surgical interventions provide the most consistent benefits in terms of pain reduction and functional improvement.[14]

The use of TENS in our patient is consistent with these principles. TENS is a low-risk, non-invasive treatment that can help with pain by using neurophysiological mechanisms like segmental inhibition and activation of endogenous analgesic pathways. However, it does not work for everyone. Its favorable safety profile makes it particularly suitable for older adults, especially in the context of reducing pharmacological burden, as it allows for effective pain management without the side effects associated with many medications commonly prescribed to this age group. The use of TENS in our patient is consistent with these principles. TENS is a non-invasive, low-risk modality that may modulate pain through segmental inhibition and activation of endogenous analgesic pathways. However, its effectiveness in chronic low back pain remains controversial, and large systematic reviews, including the one by Knotkova *et al*., have highlighted limited or inconsistent evidence of benefit in this indication.[15] Despite these limitations, its use in this case was justified by its excellent safety profile, local clinical practice within the rehabilitation team, and the patient's strong preference to reduce opioid consumption. In selected patients, individualized responses may still support its integration into multimodal pain management strategies.

Additional complementary approaches, such as hydrotherapy and spa-based interventions, have also been reported to provide symptomatic relief and improve functional outcomes in patients with chronic musculoskeletal pain, further supporting the role of non-pharmacological modalities in comprehensive pain management.[8]

Beyond pain reduction, this case also highlights the importance of functional and psychosocial outcomes. The observed improvement in autonomy IADL score and GIR classification) and social reintegration, including renewed family interaction, underscores the relevance of patient-centered outcomes that extend beyond pain intensity alone. In this case, quality of life improvement was assessed clinically through functional recovery IADL improvement from 4/8 to 6/8), autonomy grading (transition from GIR 2 to GIR 4), and psychosocial reintegration, rather than using a formal validated quality of life questionnaire. Although the patient's body mass index was within the normal range, it remains an important modifiable factor in chronic low back pain and associated comorbidities such as obstructive sleep apnea and should be systematically assessed in clinical practice. After complete discontinuation of opioids, no reintroduction of opioid therapy was required, and pain remained manageable under non-opioid analgesics such as paracetamol and nefopam.

Despite these encouraging findings, this report has several limitations. As a single case observation, it does not allow for generalization of the results. Moreover, the absence of long-term follow-up limits the assessment of sustained efficacy and adherence to the intervention. To better define the role of multimodal non-pharmacological strategies in this population, future studies should involve larger cohorts and longer follow-up periods.

Conclusions

This case report suggests that a multimodal strategy incorporating non-pharmacological approaches can lead to meaningful improvements in chronic pain among older adults, while facilitating a reduction in opioid use. It underscores the importance of individualized, function-oriented care that addresses the multidimensional nature of pain and prioritizes quality of life, particularly by tailoring interventions to the specific needs and preferences of older adults to enhance their overall well-being.

Patient's perspective

The patient reported a subjective improvement in quality of life, associated with regained autonomy and social reintegration. She resumed contact with her daughter, whom she invited to observe her functional progress, including the transition from wheelchair use to walking with a cane.

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Availability of data and materials: the data supporting the findings of this case report are available from the corresponding author upon reasonable request. No datasets were generated or analyzed during the current study beyond those presented in this article.

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