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Early surgery for sciatica

Does new evidence challenge a stepped care approach for all patients?

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International guidelines for sciatica recommend a stepped care approach starting with conservative management (ie, physiotherapy and medication), escalating to steroid injections, then surgery when non-surgical treatment has failed or when major radicular weakness is present.¹ Unfortunately, evidence on the effectiveness of both non-surgical²⁻⁵ and surgical options is uncertain.

In a linked paper,⁶ Liu and colleagues (doi:10.1136/bmj-2022-070730) report a methodologically sound and balanced systematic review and meta-analysis of 24 randomised clinical trials evaluating the evidence of surgical care for people with sciatica due to lumbar disc herniation. Their meta-analysis suggests that discectomy is statistically significantly superior to non-surgical treatment in reducing leg pain and disability. However, effects were moderate at best (10-20 point reduction on a 100 point scale), but mostly small (5-10 point reduction). The benefits of discectomy were only evident in the short to medium term, with no clinically meaningful effects beyond 12 months.

Studies that evaluated plasma disc decompression and chemonucleolysis were also included, but the small number did not permit firm recommendations. Commendably, the authors carefully rated the certainty of evidence, which was low or very low. The true effect could, therefore, be markedly different from the reported estimates, allowing only weak clinical recommendations.⁷ This certainty of evidence is disappointing considering that 11 of the 12 trials evaluating discectomy were reported after the CONSORT reporting guidelines were published. The authors concluded that “discectomy might be an option for people with sciatica who feel that the rapid relief offered by discectomy outweighs the risks and costs associated with surgery.”

So, does that mean that people with sciatica should be offered surgery because they will experience more rapid improvements in pain and disability compared with non-surgical interventions? As always, context is key when interpreting study findings. In this systematic review, although not specifically mentioned by the research authors, most of the trials that examined the effect of discectomy recruited patients from secondary care. According to the stepped care approach recommended by international guidelines, secondary care referral should only be initiated for people who have not responded to conservative care or have severe radicular weakness.¹ Furthermore, to be considered for surgery, patients require a surgical indication such as a structural target on magnetic resonance imaging (MRI). Accordingly, this systematic review included only trials of people with discogenic sciatica diagnosed

by MRI. However, only 30% of patients in secondary care have an MRI finding that matches the spinal level predicted by clinical examination and thus represents a clear surgical indication.⁸ The results of this systematic review therefore relate to a much smaller and more defined group than the heterogeneous population with sciatica encountered in community healthcare settings.

In primary care, about two thirds of people with sciatica recover within two to three months^{9 10} without the need or even an indication for invasive treatments. Therefore, extrapolation of Liu and colleagues' findings to a primary care population would be misleading. Their conclusions should be limited to people with a specific diagnosis of radicular pain with or without radiculopathy, who have likely not responded adequately to non-surgical approaches, or to people with severe pain and a large enough impact on quality of life to warrant secondary care referral. A more appropriate conclusion might be that discectomy could be an option for people with radicular pain (with or without radiculopathy) who present to secondary care settings with a clear indication for surgery.

Despite limitations related to the low certainty of evidence, Liu and colleagues' review raises an important point for clinicians, people with sciatica, and policy makers. Growing evidence for worse surgical outcomes associated with prolonged symptom duration,^{11 12} together with the better short and medium term benefits of discectomy reported in this systematic review, challenge the stepped care approach that offers the least invasive options first to everyone with sciatica. Expedited surgical triage would be preferable for people with discogenic sciatica and a clear indication for surgery when rapid pain relief is a priority. Although many international pathways have this intention,^{13 14} reality is often divergent. Access to specialist services is difficult and delayed in many health systems globally, requiring proactiveness and perseverance from the patient, which is often compromised by their symptoms.¹⁵ Easier and faster access to surgical triage is needed for patients who are most likely to benefit.

Although the new review cannot provide clear treatment recommendations, the findings highlight one of the main obstacles to improving outcomes in this clinical field: sciatica is a heterogeneous condition and no routine clinical measures can consistently predict outcome.^{16 17} This knowledge gap hinders early triage, including to more invasive treatments. Solving the heterogeneity puzzle is the key to helping people with sciatica and clinicians choose the right treatment for them earlier in the

disease trajectory, while being fully informed of the benefits and risks of surgery.

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