



PT or cervical collar for cervical radiculopathy?

Active treatment (physical therapy + home-based exercise) and passive treatment (cervical collar + rest) are equally effective at relieving acute neck and arm pain.

PRACTICE CHANGER

To shorten recovery time for adults with acute cervical radiculopathy, recommend either physical therapy (PT) and a home exercise plan or a cervical collar and rest.¹ Both are more effective than a wait-and-see strategy.¹

STRENGTH OF RECOMMENDATION

B: Based on a single well-done randomized controlled trial (RCT).

Kuijper B, Tans JT, Beelen A, et al. Cervical collar or physiotherapy versus wait and see policy for recent onset cervical radiculopathy: randomized trial. *BMJ*. 2009;339:b3883.

ILLUSTRATIVE CASE

James M, a 43-year-old self-employed mechanic, came to see you 2 weeks ago because of neck pain radiating to his right shoulder, arm, forearm, and dorsum of his hand. You diagnosed acute right-sided cervical radiculopathy and prescribed a nonsteroidal anti-inflammatory drug.

Today he's back in your office, reporting that he has experienced only minimal transient relief. You reassure him that the pain will subside within a few months, but James wants to know if you can give him something to speed up his recovery and enable him to return to work.

Each year in the United States, approximately 85 out of every 100,000 adults develop cervical radiculopathy²—a neurologic condition characterized

by dysfunction of a cervical spinal nerve, the roots of the nerve, or both. In addition to pain in the neck and the arm on the affected side, patients often develop sensory loss, loss of motor function, and/or reflex changes in the affected nerve-root distribution.

Most patients respond to conservative measures

A nonsurgical approach is the preferred first-line treatment strategy for cervical radiculopathy.³ The Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders—an international network of experts in a number of specialties—found no evidence that surgery provides better long-term outcomes than more conservative treatment.³ Approximately 80% to 90% of patients respond to a conservative approach, with improvements in pain, function, and mood in 3 to 6 months.^{4,5}

There are numerous conservative therapies for cervical radiculopathy, including oral analgesics, rest, cervical traction, short-term immobilization with a cervical collar, PT, a short course of oral corticosteroids, and perineural steroid injections.⁴⁻⁶ These therapies may be used singly or in combination. Until now, however, no high-quality RCTs compared the efficacy of various nonsurgical treatment modalities for acute cervical radiculopathy—and their effectiveness is still subject to debate.

CONTINUED

Mariya Dmytriv, MD;
Kate Rowland, MD;
Thomas Gavagan, MD,
MPH; David Holub, MD,
FAAFP

Department of Family
Medicine, The University
of Chicago

PURLs EDITOR

John Hickner, MD, MSc
Department of Family
Medicine, Cleveland Clinic

STUDY SUMMARY**Initially, both Tx modes beat wait-and-see**

The study by Kuijper et al¹ is the first RCT to compare the effectiveness of PT, cervical collars, and a wait-and-see strategy in alleviating symptoms of cervical radiculopathy. Enrollees (N=205) were men and women ages 18 to 75 years who were referred by general practitioners in 3 Dutch hospitals. All the participants had a diagnosis of cervical radiculopathy confirmed by a neurologist. In addition, all the cases were of recent onset, with symptoms of <1 month's duration at the time of enrollment. Patients with clinical signs of cord compression and those who had previously been treated with either PT or a cervical collar for this episode were excluded.

The researchers randomized the participants into 3 groups: PT, cervical collar, or control. All the groups were comparable at baseline.

■ **Those in the PT group** received twice weekly therapy for 6 weeks, with a focus on mobilizing and stabilizing the cervical spine. They were also taught to perform home exercises and advised to do the exercises daily.

■ **Patients in the cervical collar group** were given a semi-hard, snugly fitted collar and instructed to wear it during the day for 3 weeks—and to rest as much as possible. They were weaned from the collar over the course of another 3 weeks.

■ **Participants in the control group** were simply told to follow their normal daily routine as much as possible. All 3 groups were permitted to take oral pain medication as needed.

The primary outcome measures were changes over time in neck and arm pain scores, using 2 validated measurement tools: a 100-mm visual analog scale (VAS) and a 100-point neck disability index (NDI). Both tools were used at 3 weeks, 6 weeks, and 6 months. Secondary outcomes were treatment satisfaction (as measured on a 5-point scale), use of opiates, and working status.

By 6 months, differences virtually disappeared

Both the active and passive interventions reduced arm and neck pain faster than the wait-and-see strategy. At 6 weeks, participants in both the PT and cervical collar groups reported a

31-mm reduction in arm pain ($P=.007$ and $.006$, respectively), compared with a 19-mm reduction for those in the control group ($P=.006$). This is a clinically meaningful difference.

The rate of reduction in neck pain over the first 6 weeks was: PT group, 2.4 mm/week, $P=.002$; cervical collar group, 2.8 mm/week, $P<.001$; and control group, 0.9 mm/week. The rate of reduction in the NDI was 1.4 points per week for the control group vs 2.3 points per week for the cervical collar group ($P=.024$). The PT group fared no better on the NDI measure than the control group. This may reflect the fact that the index predominantly measured disability caused by neck pain, whereas arm pain scores, —which were highest initially—showed the greatest improvement, the authors note.

At 6 months, pain and disability had almost resolved for all the patients, regardless of their treatment group, and secondary outcomes—treatment satisfaction, analgesic use, and working status—were similar for all 3 groups.

WHAT'S NEW**High-quality RCT supports PT and cervical collar**

Some investigators have advocated the short-term use of immobilization with either a cervical collar or a cervical pillow during sleep. Until now, however, there was no conclusive evidence about the benefits of this approach.

One earlier RCT (N=493) compared 5 treatment modalities—traction, positioning, collar, placebo tablets, and heat treatment—and found no significant difference in pain and ability to work.⁷ That trial was done nearly 15 years ago, however, and the investigators did not use validated outcome scales. Therefore, the trial would not meet current RCT standards.

The study we report on here leaves little doubt that the 2 treatments reviewed—PT and cervical collar—provide more rapid relief than a wait-and-see approach.

CAVEATS**Pain meds still needed, unanswered questions remain**

Although the cervical collar and PT groups had less pain at 3 and 6 weeks compared with the controls—and all 3 groups showed equal



Both the active and passive interventions reduced arm and neck pain faster than the wait-and-see strategy.

improvement at study's end—the researchers found little difference in use of analgesics. Data on adherence to treatment was recorded by patients, so treatment adherence may not be completely accurate.⁸

Patients without severe arm pain or signs of muscle weakness were not included in this study, so we don't know whether individuals with less severe cervical radiculopathy would benefit from these treatments. What's more, this study focused only on new cases of acute cervical radiculopathy, and the findings may not apply to patients with chronic, recurrent, or persistent symptoms.

The apparent contradiction in the finding that both immobilization and PT are beneficial does not have a clear scientific explanation. The researchers hypothesize that immobilizing the neck with a collar reduces foraminal root compression and inflammation; this could explain the larger reduction in arm pain compared with neck pain and neck disability found in this study. The mechanism of pain reduction with PT is unclear, although it is probably related to the restoration of the neck musculature's strength and range of motion.

Cost is another issue. A cervical collar and rest is at least as effective as PT for recent

onset cervical radiculopathy, but the collar costs only about \$20—far less than the cost of 12 sessions of therapy.

One final caveat: Any patient with persistent or worsening symptoms should undergo additional evaluation, including imaging.

CHALLENGES TO IMPLEMENTATION

Rest is contrary to usual approach

Some physicians may not agree with the recommendation to encourage rest. Indeed, rest and immobilization are contrary to the usual recommendation for musculoskeletal injuries—to resume activity as soon as possible.

Patients might not like wearing a collar for a variety of personal reasons, such as cosmetic appearance or limitations of motion. On the other hand, some patients may feel that their pain is too severe to be able to participate in PT—which may also be too expensive for, or not readily available to, some patients. **JFP**

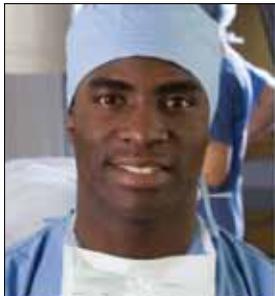
ACKNOWLEDGEMENT

The PURLs Surveillance System is supported in part by Grant Number UL1RR024999 from the National Center for Research Resources; the grant was a Clinical Translational Science Award to the University of Chicago. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Center for Research Resources or the National Institutes of Health.

> A cervical collar is at least as effective as PT for recent onset cervical radiculopathy, and it costs far less.

References

1. Kuijper B, Tans JT, Beelen A, et al. Cervical collar or physiotherapy versus wait and see policy for recent onset cervical radiculopathy: randomized trial. *BMJ*. 2009;339:b3883.
2. Radhakrishnan K, Litchy WJ, O'Fallon WM, et al. Epidemiology of cervical radiculopathy: a population-based study from Rochester, Minnesota, 1976 through 1990. *Brain*. 1994;117:325-335.
3. Nordin M, Carragee EJ, Hogg-Johnson S, et al. Assessment of neck pain and its associated disorders: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. *Spine*. 2008;33(suppl 4):S101-S122.
4. Saal JS, Saal JA, Yurth EF. Nonoperative management of herniated cervical intervertebral disc with radiculopathy. *Spine*. 1996; 21:1877-1883.
5. Persson LC, Carlsson CA, Carlsson JY. Long-lasting cervical radicular pain managed with surgery, physiotherapy, or a cervical collar: a prospective, randomized study. *Spine*. 1997;22:751-758.
6. Wolff MW, Levine LA. Cervical radiculopathies: conservative approaches to management. *Phys Med Rehabil Clin N Am*. 2002;13:589-608.
7. Levine MJ, Albert TJ, Smith MD. Cervical radiculopathy: diagnosis and nonoperative management. *J Am Acad Orthop Surg*. 1996;4:305-316.
8. Wainner RS, Fritz JM, Irrgang JJ, et al. Reliability and diagnostic accuracy of the clinical examination and patient self-report measures for cervical radiculopathy. *Spine*. 2003;28:52-62.



The recruitment hub created exclusively for
physicians and advanced practice clinicians.

MedOpportunities.com