CASE REPORTS

Home Care Neck Traction for a Patient With Neck Pain and Cervical Radiculopathy Symptoms: A Case Report

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ABSTRACT

Objective: The purpose of this case study is to describe home care traction for a patient with neck pain and radicular symptoms.

Clinical Features: A 30-year old male patient presented with a sharp pain in the left shoulder and lateral side of the left arm. Cervical spine motion was limited on the left side. Physical examination findings suggested radiculopathy on the left side.

Intervention and Outcome: Home care traction exercise for the neck in the supine position was recommended to the patient. In this exercise, the person lay on the edge of the bed in a supine position. The head was at the edge of the bed and the feet were toward the center of the bed. The head and the upper torso were lowered from the edge of the bed so as to hang the head freely from the bed. This position was maintained for 1 minute. This exercise was done 6 times a day. After 3 weeks, the patient had relief from pain and became asymptomatic with this exercise regimen.

Conclusion: Home traction exercises for the neck provided pain relief for this patient with cervical radiculopathy. This traction exercise seems simple, easy to learn, and reproducible. It can be done at home without involving any extra cost. (J Chiropr Med 2019;18:127-130)

Key Indexing Terms: Neck; Pain; Traction

INTRODUCTION

Neck pain is common, and up to 25% of patients in the outpatient clinics are estimated to be due to neck pain.^{1,2} The cause of neck pain is multifactorial and includes disc degeneration, osteoarthritis, strain and sprain of cervical spine, and myofascial pain disorders.^{2,3} Poor posture is a common aggravating factor, and the amount of time spent on mobile phones and computers correlates directly with the neck pain and other muscular-skeletal symptoms.⁴⁻⁶

Cervical traction is a frequently recommended intervention for neck pain⁷ and is an important component of nonsurgical management of neck pain, especially in cases of cervical myelopathy.^{2,3,8} A clinical prediction rule was created to identify patients with neck pain who are likely to improve with cervical traction.⁹ If 3 of 5 variables are positive, then the chances of improvement with cervical traction ranged from

44% to 79%, and if 4 of 5 variables were positive, then the chances of improvement were up to 95%.⁹

Cervical traction is usually done 2 to 3 times per week for a period of 3 weeks and can be done in a hospital as well as in a home setting.⁹ Traction done at a hospital requires the investment of time and incurs cost. On the other hand, home traction methods are convenient, economical, and time saving, but they usually require some kind of traction device.¹⁰ The purpose of this case report is to describe a symptomatic patient with cervical radiculopathy who had improvements in outcomes after a simple home care method of neck traction.

CASE REPORT

A 30-year-old male patient presented in the physician's office with a history of neck pain for 1 month. His weight was 73 kg, height was 172 cm, and body mass index was 24.74. The problem started with a neck ache that gradually progressed to a sharp pain in the left shoulder and lateral side of the arm over a period of 1 month. There was associated episodic numbness in the lateral part of the left hand, especially the thumb of the left hand. The symptoms were worsened by turning the head to the left side and simultaneously extending the neck. There was no history of injury to the neck. The patient was a software engineer

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and had to work on his computer every day for an average of 3 to 4 hours and used his mobile phone for 2 to 3 hours daily.

The systemic examination was grossly normal. All sensory and motor parameters were normal. However, the motion of cervical spine was limited, especially on the left side. Neck flexion was limited to 45° (normal 80°-90°), extension was 30° (normal 70°), lateral bending on left side was 20° and right side was 30° (normal 20°-45°), and rotation on left side was 30° and right side was 45° (normal 90°).¹¹ The Spurling test, upper limb tension test, distraction test, and shoulder abduction test were unilaterally positive on the left side for radicular pain.⁹ The examination findings pointed to nerve root compression in the cervical spine leading to radicular symptoms on the left side.

For management, it was planned to initiate neck exercises to increase strength and endurance of flexor muscles of the neck (10 repetitions of isometric and isotonic neck exercises to be performed twice a day) and to start home care traction of the neck in a supine position. In the latter exercise, the person was instructed to lie on the edge of the bed (couch) in a supine position. The head was at the edge of the bed and the feet were away from the edge. The head and the upper torso (till the level of nipples) were then lowered from the edge of the bed so as to hang the head freely from the bed. Both the hands were hung freely on each side of the head (Fig 1). The person stayed in this position for 1 minute, and then he reverted back to normal position. The exercise was repeated after 5 minutes. Adequate care was taken that the patient did not slip down from the bed. Any jerky movement was to be avoided. He was instructed that if the symptoms or the pain worsened while doing the exercise, then the exercise was to be stopped immediately. In each session, the traction of neck in supine position was done 3 times and each traction lasted for 1 minute. This was done morning and evening (twice a day).

Fig 1. Traction exercise of the neck in home care setting.

After 3 weeks of therapy, he reported improvement in neck pain and radicular symptoms. There was improvement in the neck and shoulder pain, and the episodic numbness in his left hand resolved completely. The cervical motion became almost normal (neck extension became 70°, lateral bending improved to 40° on both sides, and rotation became 90° on the left side and 100° on the right side). However, flexion did not improve to normal range but improved considerably from 45° to 70°. The Spurling test, upper limb tension test, distraction test, and shoulder abduction test all became negative, which were earlier positive on the left side.

Approval was received from the ethics committee (Indus Hospital Ethics Committee) of the hospital, and the patient provided informed consent to publish this case study.

DISCUSSION

Home care traction exercise of the neck was simple, easy to learn, and reproducible. It could be done at home and involved no cost. It is suggested that it is safe because it gives controlled traction to the neck and the traction cannot increase beyond the weight of the person's head (eg, 10-12 pounds). The latter is the weight that is recommended as the initial pull force to start therapeutic cervical traction.⁹ Unlike mechanical traction that is passive and does not involve muscles of the patient, home care traction exercise of the neck is dynamic because it actively involves the patient's neck and back muscles.

Although traction is usually given in hospital setting in some regions or countries, home care methods of providing traction have been described in the literature. In the home setting, seated cervical traction using an over-the-door pulley support with attached weights provided symptomatic relief in up to 81% of the patients with mild to moderately severe (Grade 3) cervical spondylosis syndromes.¹² Another study compared supine cervical traction to seated cervical traction in the home setting in healthy male volunteers.¹³ It found that supine cervical traction was more effective for increasing posterior vertebral separation than seated cervical traction.¹³ Another study examined the Saunders home cervical traction unit (DJO Global, Dallas, Texas) in the home setting to assess relief in neck pain in fighter pilots.¹⁴ This study concluded that the home traction led to meaningful improvement in a daily pain rating.¹⁴

The literature highlights that the home traction, especially in a supine position, is beneficial. In this case report, home traction was used in a supine position, which provided pain relief of the symptoms of the patient with symptoms of cervical radiculopathy. Moreover, this method did not require any kind of device at all. Therefore,

the described method was economical and therefore could be more commonly used for patients with a similar condition.

Limitations

This is a case report of showing benefit of home care traction exercise of the neck in a single patient. No imaging studies were performed, so the definitive diagnosis was not confirmed. Because of the natural course of disease, it is possible that the patient improved despite the benefits of the intervention. Because this is 1 case, extrapolation to other patients or populations should be avoided. This method needs to be analyzed in a large number of patients with a control group to assess the long-term efficacy of this method.

CONCLUSION

As seen in this case report, a traction exercise provided relief for this patient with neck pain and radicular symptoms in the home setting. The procedure was easy to learn and reproduce. Because it did not require additional devices, it was more economical than other home care traction methods.

FUNDING SOURCES AND CONFLICTS OF INTEREST

No funding sources or conflicts of interest were reported for this study.

CONTRIBUTORSHIP INFORMATION

Concept development (provided idea for the research): P.G.

Design (planned the methods to generate the results): P.G.

Supervision (provided oversight, responsible for organization and implementation, writing of the manuscript): P.G.

Data collection/processing (responsible for experiments, patient management, organization, or reporting data): P.G.

Analysis/interpretation (responsible for statistical analysis, evaluation, and presentation of the results): P.G.

Literature search (performed the literature search): P.G.

Writing (responsible for writing a substantive part of the manuscript): P.G.

Critical review (revised manuscript for intellectual content, this does not relate to spelling and grammar checking): P.G.

Practical Applications

- Cervical traction is a frequently recommended intervention for neck pain. Because of this, cervical traction could never be tried as a preventive option.
- If cervical traction could be done at home, then not only would it be convenient, economical, and time saving when used therapeutically, but also it could be used as a preventive measure on a long-term basis.

REFERENCES

1. Jette AM, Smith K, Haley SM, Davis KD. Physical therapy episodes of care for patients with low back pain. *Phys Ther.* 1994;74(2):101-110; discussion 110-115.
2. Bernstetter A. The application of a clinical prediction rule for patients with neck pain likely to benefit from cervical traction: a case report. *Physiother Theory Pract.* 2016;32(7):546-555.
3. Blanpied PR, Gross AR, Elliott JM, et al. Neck pain: revision 2017. *J Orthop Sports Phys Ther.* 2017;47(7):A1-A83.
4. Berolo S, Wells RP, Amick III BC. Musculoskeletal symptoms among mobile hand-held device users and their relationship to device use: a preliminary study in a Canadian university population. *Appl Ergon.* 2011;42(2):371-378.
5. Shan Z, Deng G, Li J, Li Y, Zhang Y, Zhao Q. Correlational analysis of neck/shoulder pain and low back pain with the use of digital products, physical activity and psychological status among adolescents in Shanghai. *PLoS One.* 2013;8(10):e78109.
6. Hakala PT, Rimpela AH, Saarni LA, Salminen JJ. Frequent computer-related activities increase the risk of neck-shoulder and low back pain in adolescents. *Eur J Public Health.* 2006;16(5):536-541.
7. Wainner RS, Gill H. Diagnosis and nonoperative management of cervical radiculopathy. *J Orthop Sports Phys Ther.* 2000;30(12):728-744.
8. Rhee JM, Shamji MF, Erwin WM, et al. Nonoperative management of cervical myelopathy: a systematic review. *Spine (Phila Pa 1976).* 2013;38(22 suppl 1):S55-S67.
9. Raney NH, Petersen EJ, Smith TA, et al. Development of a clinical prediction rule to identify patients with neck pain likely to benefit from cervical traction and exercise. *Eur Spine J.* 2009;18(3):382-391.
10. Cai C, Ming G, Ng LY. Development of a clinical prediction rule to identify patients with neck pain who are likely to benefit from home-based mechanical cervical traction. *Eur Spine J.* 2011;20(6):912-922.
11. Childs JD, Cleland JA, Elliott JM, et al. Neck pain: clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther.* 2008;38(9):A1-A34.

12. Swezey RL, Swezey AM, Warner K. Efficacy of home cervical traction therapy. *Am J Phys Med Rehabil.* 1999;78(1):30-32.
13. Fater DC, Kernozek TW. Comparison of cervical vertebral separation in the supine and seated positions using home traction units. *Physiother Theory Pract.* 2008;24(6):430-436.
14. Chumbley EM, O'Hair N, Stolfi A, Lienesch C, McEachen JC, Wright BA. Home cervical traction to reduce neck pain in fighter pilots. *Aerosp Med Hum Perform.* 2016;87(12):1010-1015.