

Letters to the Editor

Thoracic Outlet Syndrome Is Typically Not an Urgent Condition

Original Article: Neck Pain: Initial Evaluation and Management

Issue Date: August 1, 2020

See additional reader comments at: <https://www.aafp.org/afp/2020/0801/p150.html>

To the Editor: In Table 1 of their article, Drs. Childress and Stueck list findings that warrant urgent evaluation in patients with neck pain, including thoracic outlet syndrome. No physical examination findings have high sensitivity or specificity for thoracic outlet syndrome. The Roos test has poor predictive value and a high false-positive rate; consequently, some researchers have indicated that it should be abandoned.¹

The table also implies that all thoracic outlet syndrome presentations warrant “urgent evaluation.” This is not the case. Thoracic outlet syndrome can be neurologic, arterial, or venous. The overwhelming majority of thoracic outlet syndrome is neurogenic, with only 1% of all thoracic outlet syndrome presentations consisting of potential limb-threatening etiologies, which are mostly embolic or thrombotic.² Most of these presentations are seen in individuals with cancer and in persons who have recently had invasive vascular procedures.³

In most cases, thoracic outlet syndrome is diagnosed after more common diagnoses have been ruled out (e.g., cervical radiculopathy, shoulder impingement, upper extremity nerve entrapment).⁴ When diagnostic testing is warranted for embolic or thrombotic thoracic outlet syndrome, the test of choice is duplex ultrasonography. Magnetic resonance imaging, which is listed in the table as an option, is a poor screening test but has more utility for surgical planning.⁵

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References

1. Hixson KM, Horris HB, McLeod TCV, et al. The diagnostic accuracy of clinical diagnostic tests for thoracic outlet syndrome. *J Sport Rehabil*. 2017;26(5):459-465.

Email letter submissions to afplet@aafp.org. Letters should be fewer than 400 words and limited to six references, one table or figure, and three authors. Letters submitted for publication in *AFP* must not be submitted to any other publication. Letters may be edited to meet style and space requirements.

This series is coordinated by Kenny Lin, MD, MPH, deputy editor.

2. Hussain MA, Aljabri B, Al-Omran M. Vascular thoracic outlet syndrome. *Semin Thorac Cardiovasc Surg*. 2016;28(1):151-157.
3. Ohman JW, Annest SJ, Azizzadeh A, et al. Evaluation and treatment of thoracic outlet syndrome during the global pandemic due to SARS-CoV-2 and COVID-19. *J Vasc Surg*. 2020;72(3):790-798.
4. Kuhn JE, Lebus GF V, Bible JE. Thoracic outlet syndrome. *J Am Acad Orthop Surg*. 2015;23(4):222-232.
5. Hardy A, Pougès C, Wavreille G, et al. Thoracic outlet syndrome: diagnostic accuracy of MRI. *Orthop Traumatol Surg Res*. 2019;105(8):1563-1569.

In Reply: The response from Dr. Martin is fair and is an appropriate discussion about the true risks for thoracic outlet syndrome. Thoracic outlet syndrome includes a variety of potential etiologies that could manifest in similar symptoms. Our goal in mentioning the condition in our article was to maintain some vigilance in the differential diagnosis of neck pain, as some, albeit rare, patterns of neck pain and associated symptoms (that might prompt the question of thoracic outlet syndrome) could reflect these potentially limb-threatening conditions. We would agree that the far more common causes of this syndrome would not be classified as urgent. In the differential provided in Table 1 of our article, we did not subdivide this condition adequately to allow for the breadth of these salient points.

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Long-term Benefits of Manipulation for Neck Pain

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To the Editor: As a member of the American Academy of Family Physicians and an osteopathic physician, I was greatly interested in the article on neck pain by Drs. Childress and Stueck. I disagreed with the description of the effectiveness of manipulation for the treatment of neck pain, which is directly opposite to the results found in a Cochrane review.¹

The article states that manipulation produced short-term pain relief, but that long-term benefits were minimal or inconsistent. However, the Cochrane review stated that, “Cervical manipulation for acute/subacute neck pain was more effective than varied combinations of analgesics, muscle relaxants and non-steroidal anti-inflammatory drugs for improving pain and function at up to long-term follow-up. For chronic cervicogenic headache, cervical manipulation provided greater benefit than light massage in improving pain and function at short-term and intermediate-term

follow-up. For chronic [cervicogenic headache], cervical manipulation may be superior to transcutaneous electrical nerve stimulation (TENS) in improving pain at short-term follow-up.” And, “...for subacute and chronic neck pain, cervical mobilisation appeared similar to pulsed ultrasound, TENS, acupuncture and massage in improving pain, function, quality of life, and patient satisfaction up to intermediate-term follow-up.”¹

The article states that the benefit did not extend beyond follow-up. However, the Cochrane review stated that at follow-up the pain and function were improved. I would appreciate the authors' comments on the inconsistency between their article's conclusion and those of the Cochrane review, in addition to further review of the relevant literature. Thank you for your attention to this matter.

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Reference

1. Gross A, Langevin P, Burnie SJ, et al. Manipulation and mobilisation for neck pain contrasted against an inactive control or another active treatment. *Cochrane Database Syst Rev*. 2015;(9):CD004249.

In Reply: It was not our goal to discourage the use of cervical manipulation by skilled clinicians. The comments in our article reflect those made by the Cochrane review authors in their summary, “results for cervical manipulation and mobilisation versus control are few and diverse.”¹ In a controlled setting, analgesics, muscle relaxants, and nonsteroidal anti-inflammatory drugs provide reliable and consistent relief for chronic neck pain.² Similarly, in the comparison of mobilization to pulsed ultrasonography, transcutaneous electrical nerve stimulation, acupuncture, and massage, the Cochrane authors noted that none of the studies addressing these questions were high quality (80% of the included studies were low or very low quality), and conclusions were limited to short-term and intermediate-term follow-up.

We do not advise against the use of manipulation techniques for neck pain; however, we maintain that our article is consistent with the conclusions in the Cochrane review based on the lack of higher-quality evidence and the paucity of long-term data.

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1. Gross A, Langevin P, Burnie SJ, et al. Manipulation and mobilisation for neck pain contrasted against an inactive control or another active treatment. *Cochrane Database Syst Rev*. 2015;(9):CD004249.
2. Binder AI. Neck pain. *BMJ Clin Evid*. 2008;2008:1103.

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An Osteopathic Approach to Neck Pain

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We thank Drs. Childress and Stuek for presenting a best practice approach to the initial evaluation and treatment of neck pain. We propose also considering an osteopathic approach.

In the absence of red flag findings, we agree that clinicians should consider treatment focused on the patient's level of pain and function. With this same approach, we encourage clinicians to use osteopathic techniques to treat neck pain and consider the relationship between structure and function. Osteopathic manipulative treatment (OMT) is a group of related techniques used to manage somatic dysfunction (see <https://www.aafp.org/afp/2019/0215/p248.html>). The goals of applying manual medicine are to restore maximal, pain-free movement of the musculoskeletal system; enhance neuromuscular function; and improve biomechanical balance.¹ The evidence indicates that manual therapy is equally or more effective at treating pain and improving function compared with oral analgesics.² Cervical manipulation and mobilization may be considered to provide short-term improvement in pain relief and function in patients with neck pain.³

In our office, we teach and use OMT in addition to the treatments outlined in the article by Drs. Childress and Stuek. Our patients appreciate the hands-on approach that OMT allows while we are able to minimize the adverse effects of pharmacologic therapies.

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1. Gunnar Brolinson P, McGinley SMG, Kerger S. Osteopathic manipulative medicine and the athlete. *Curr Sports Med Rep*. 2008;7(1):49-56.
2. Bodine WA. Osteopathic manipulative treatment: a primary care approach. *Am Fam Physician*. 2019;99(4):214. Accessed September 2, 2020. <https://www.aafp.org/afp/2019/0215/p214.html>
3. Gross A, Langevin P, Burnie SJ, et al. Manipulation and mobilisation for neck pain contrasted against an inactive control or another active treatment. *Cochrane Database Syst Rev*. 2015;(9):CD004249.

Editor's Note: This letter was sent to the authors of "Neck Pain: Initial Evaluation and Management," who declined to reply.

Corrections

Incorrect statistics. In the article, "Breast Cancer Screening: Common Questions and Answers," (January 1, 2021, p. 33), the figure listed for breast cancer deaths per number of women screened with mammography should have been per 10,000 women rather than per 100,000 women in the "What's New On This Topic" table (page 33) and in the last sentence of the first paragraph in the "Does Screening Mammography Reduce Breast Cancer-Related Mortality" section (page 37). The sentence in the table should have read: "A 2016 meta-analysis calculated that per 10,000 women screened with mammography, three breast cancer deaths are avoided over 10 years in women 40 to 49 years of age, eight deaths are avoided in women 50 to 59 years, 21 deaths are avoided in women 60 to 69 years, and 13 deaths are avoided in women 70 to 74 years." The sentence on page 37 should have read: "A meta-analysis performed for the U.S. Preventive Services Task Force (USPSTF) calculated that per 10,000 women screened with mammography, only three breast cancer deaths are avoided over 10 years in women 40 to 49 years of age, eight deaths are avoided in women 50 to 59 years, 21 deaths are avoided in women 60 to 69 years, and 13 deaths are avoided in women 70 to 74 years."¹⁹

Also, the Breast Density section of Table 1 (page 34) should have included a fifth category. The last line of that section should have included < 5%, with a Risk of breast cancer (relative risk unless otherwise noted) of 1.0.

Finally, the first sentence of the last paragraph of the "What Are the Potential Harms of Breast Cancer Screening?" section (page 37) should have listed that screening mammography leads to an overdiagnosis of 10% to 30% rather than "as much as 10%" and should have listed reference 26. The sentence should have read: "Systematic reviews have found that screening mammography leads to an overdiagnosis rate of 10% to 30%."^{24,26} The online version of this article has been corrected.

Incorrect Figure Legends. In the article, "Hip Pain in Adults: Evaluation and Differential Diagnosis," (January 15, 2021, p. 81), the legend for Figure 3B incorrectly listed abducts instead of adducts. It should have read: "Flexion adduction internal rotation test. The examiner (A) passively flexes then (B) adducts and internally rotates the hip." Also, the legend for Figure 5B incorrectly listed internally rotated instead of externally rotated. It should have read: (B) Resisted external derotation test. While the patient lies on a table, the hip is passively flexed to 90 degrees, then externally rotated." The online version of this article has been corrected.

Incorrect Unit of Measure. In the article, "Eating Disorders in Primary Care: Diagnosis and Management," (January 1, 2021, p. 22), the second sentence of the Nutrition section (page 25) incorrectly added "per kg" to the number of daily required kcal for adolescent females and males. The sentence should have read: "Moderately active adolescent females require approximately 2,200 kcal per day (adolescent males need 2,800 kcal per day); athletes and persons who are hypermetabolic post-recovery at any age require more."^{5,20} The online version of this article has been corrected. ■