



Scapulothoracic Stabilization to Reduce Cervical Pain and Headaches: A Case Report

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BACKGROUND & PURPOSE

Neck pain is common in those with headache disorders causing associated forward head posture that alters the mechanics and effectiveness of the scapular stabilizer muscles.^{1,2,3} Limited research has been conducted on the relationship between scapular stabilizer strength and neck pain with headaches.

Ratio enhancement of the scapular stabilizers may help improve posture, scapulothoracic biomechanics, neck pain, headaches.^{4,5}

The purpose of this case report was to describe the outcomes of a scapular stabilization program in an adult female with cervical neck pain and headaches.

CASE DESCRIPTION

- 25-year-old female with chronic neck pain, intermittent migraines, and headaches
- Headaches progressed to migraines 3 times per week and headaches up to 3 times per week that lasted 24 hours to 5 days
- Primary impairments included: decreased strength, range of motion, and muscle length
- Secondary impairments of abnormal posture, decreased neuromuscular control, and decreased muscular endurance

Activity Limitations
Reaching overhead
Sleeping
Standing tolerance

Participation Restrictions
Attending social gatherings
Occupational duties
Recreational exercise

METHODS

The patient received physical therapy for 7 weeks over 10 visits. Rehabilitation emphasized scapulothoracic strength and neuromuscular re-education for correction of abnormal posture, such as prone Y's. As she gained adequate strength of the lower trapezius and middle trapezius, she was slowly introduced to whole-body exercises, including plank taps and sled pushes.



OUTCOMES

	Initial Examination (3/12/18)	Discharge (4/24/18)
Numerical Pain Rating Scale (NPRS)	10/10	0/10
Neck Disability Index (NDI)	30/50 (60%)	8/50 (16%)
Tampa Scale for Kinesiophobia-11 (TSK-11) * Higher Score = Higher Fear	11/44 (25%)	11/44 (25%)
Strength Assessment (Manual Muscle Testing)	<ul style="list-style-type: none"> • Deep Cervical Flexor Endurance Test: 8 seconds • Upper Trapezius: 5/5 • Middle Trapezius: 3+/5 • Lower Trapezius: 3+/5 • Serratus Anterior: 4/5 	<ul style="list-style-type: none"> • Deep Cervical Flexor Endurance Test: 30 seconds (Standard) • Upper Trapezius: 5/5 • Middle Trapezius: 4+/5 • Lower Trapezius: 4+/5 • Serratus Anterior: 5/5

The patient had improved body mechanics and postural awareness throughout her daily activities and decreased headaches or migraines from up to 3 times a week initially to no headaches for 1 month.

DISCUSSION

Strength, myofascial restrictions, posture, body mechanics, and confidence improved over the course of 7 weeks of physical therapy. She exceeded the minimal detectable change improvements with the Neck Disability Index (44% improvement). The minimal clinically important difference was met for the Numerical Pain Rating Scale (10 point improvement).

CLINICAL RELEVANCE

The results of this case report suggest that implementation of a scapular stabilizer strength program may be a possible intervention for those with neck pain and headaches as it targets key muscles with progression to whole-body for function and improvement in quality of life. This intervention may be viable as it corrects faulty mechanics of the scapular stabilizer ratio resulting in better posture and function.

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