

Examination of cervical and thoracic spine in cervicogenic headache considering forward head posture

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Introduction

Cervicogenic headache as a syndrome and not a single disease has a wide range of etiologies. Different structures of the cervical spine including spinal nerves, DRG, uncovertebral joints, intervertebral discs, facets, ligaments and even muscles may ultimately lead to the symptoms known as cervicogenic headache. The prevalence of cervicogenic headache in the general population is reported to be between 0.4% and 2.5%. In headache patients, the prevalence of cervicogenic headache has been reported even up to 20%. Of course, due to the great overlap between the symptoms of migraine, tension headache and cervicogenic headache, it is not possible to provide accurate prevalence in this regard. Detailed physical examination is one of the most important elements in the accurate diagnosis and treatment of this disease. Increasing pain with neck movements and unusual postures or pain with pressure on the upper neck and occipital areas are among the most important and accepted diagnostic criteria of cervicogenic headaches. Other musculoskeletal and neurological examinations, including palpation, range of motion, provocative maneuvers and tendon reflexes rule out important causes of headache and help confirm headaches of cervical origin. In this article, we review the important clinical points regarding musculoskeletal examinations in headache sufferers. In the meantime, we will give a detailed description of segmental examinations as well as posture, muscle shortness, flexibility and strength of muscles.

Examinations

Cervical vertebrae are divided into upper (atlantoaxial joint or C1-2) and lower (C3-C7) segments. C1 and C2 vertebrae are different from the lower segments in terms of function. The C1-2 joint is responsible for 58% of the total neck rotation. The atlantooccipital joint is responsible for 10 degrees of neck flexion and 25 degrees of neck extension. The C2-3 segment represents an important anatomical region in which flexion, extension and lateral bending are progressively increased and it is the most common region for facet pathology in cervicogenic headaches. Cervical facet syndrome can often mimic radicular pain to the head and upper limbs. The facet joints are usually located at a distance of 1.3 to 2.5 cm from the spinous processes. It is not possible to accurately diagnose facet pain, although paraspinal tenderness is more commonly associated with facet pain than any other physical examination. In addition to point tenderness, increased pain with neck extension and rotation and decreased neck movement are possible signs of the patient suffering from facet joint disease. Tenderness on the spinous processes and bilateral tenderness,

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although it does not rule out facet pain, can suggest pain caused by the disc or other structures. Provocative maneuvers of the second and third cervical nerve roots, such as axial pressure on the neck along with flexion or extension, may also lead to headache and diagnosis of pain origin. Among the nerve roots of the neck, the C2 root is more associated with neck headaches than other roots. Segmental examinations also play an important role in finding dysfunction in the cervical structures of the spine. There are four special maneuvers in segmental examination, which are: pressure on the spinous process, transverse pressure against the spinous process, longitudinal friction on the facet joints, pressure on the interspinous ligaments. Although these examinations do not have a high sensitivity to find the etiology of pain, in some patients it is a guide to find minor dysfunction in the upper segments of the spine, which may give a good response to manual treatments in patients with cervicogenic headaches. The forward posture of the neck increases the stress on the upper segments of the neck such as the facet, ligaments and disc. This posture can cause cervicogenic headaches to develop and worsen. In such a way that the correction of this condition has been associated with the reduction of headache. Increasing cervical lordosis and improper head posture is one of the causes of muscle dysfunction, especially cervical flexors in the upper parts of the neck and related to these types of headaches.