THE ROLE OF PREVENTION IN NECK PAIN BY POSTURAL STRESS IN VOLEYBALL

Nora Deda[1], Artan Kalaja[2]

[1,2] Department of Physical Education and Sports, Faculty of Education Sciences, University of Shkodra "Luigj Gurakuqi", Shkodra, Albania,[1]E mail: ndeda@unishk.edu.al

Abstract

In sports such as volleyball, neck problems are very common. The aim of this study was to identify postural features to prevent problems with pain in volleyball sport.60 competitive volleyball players (mean age 22 years) were included in the study; 30 had no history of cervical pain and didn't get a prevention treatment. The results were compared with those of a control group of 30 recreational volleyball players who were controlled and informed for the prevention exercises and rules. The study was done in a period of 6 months. After 6 months of study, 80% of volleyball players with no prevention advices suffered of cervical pain from incorrect posture. 20% had neck pain from injuries of falls. The results of the compared control group were 10% of neck pain from postural disorders. Other 90% had no muscle pain. Adding specific neck stabilization exercises to a general neck advice and exercise program provided better clinical outcome overall in the physical therapy treatment of volleyball neck pain. Both stretching exercise and manual therapy considerably decreased neck pain. Stretching exercises can be recommended in the first instance as an appropriate therapy intervention to relieve pain, at least in the short-term.

Keywords: *Volleyball, neck pain, prevention, exercises*

Introduction

Volleyball enjoys one of the highest participation rates of any sport in the world. By most estimates, volleyball ranks second only to football (soccer) in terms of global popularity. One of the most appealing aspects of the sport is that it can be played indoors and outdoors, by the young and the old, by males and females, and by both the able bodied and those with physical impairments. In sports such as volleyball, neck problem server common. Although volleyball accounts for just a small percentage of all organized sports injuries, participation in the sport is on the rise, and with that comes more opportunity for injury.

The International Association for the Study of Pain (IASP) in its classification of chronic pain defines cervical spinal pain as pain perceived anywhere in the posterior region of the cervical spine, from the superior uncial line to the first thoracic spinous process. Neck pain (or cervicalgia) is a common problem, with two-thirds of the population having neck pain at some point in their lives. Neck pain, although felt in the neck, can be caused by numerous other spinal problems. Neck pain may arise due to muscular tightness in both the neck and upper back, and pinching of the nerves emanating from the cervical vertebrae.

Aim of Research

This is clearly a topographic definition, and it states that neck pain is usually perceived posterior. This is consistent with patients' notions of neck pain. Pain to the front of the cervical spine is usually described as pain in the throat and not as neck pain. Bogduk and Mc Guirkalso suggest that neck pain may be subdivided into upper cervical spinal pain and lower cervical spinal pain, above or below an imaginary transverse line through C4.

From upper cervical segments, pain can usually be referred to the head, whereas from lower cervical segments, pain can be referred to the scapular region, anterior chest wall, shoulder, or upper limb. They also define sub occipital pain as the pain located between the superior uncial line and C2, an area that appears to be the source of cervicogenic headache. In that aspect, the division of neck pain into sub occipital and upper and lower cervical pain may be important for clinicians and researchers in recognizing the area of the source of pain and trying to determine the possible causes.

The Aim of this study was to identify postural features to prevent problems with pain in volleyball sport. Only the neck pain of grades I and II were involved in the study.

Methods

30 competitive volleyball players (manage 20 years) were included in the study; 15 had no history of cervical pain and didn't get a prevention treatment.

The results were compared with those of a control group of 15 recreational volleyball players who were controlled and informed for the prevention exercises and rules. The study was done in a period of 6 months. Neck exercises are a common part of almost any treatment program for neck pain.

A typical neck exercise program will consist of a combination of stretching and strengthening exercises, aerobic conditioning, and possibly trigger point exercises. This article focuses on neck exercise to relieve neck pain caused by posture problems, and includes instructions for specific neck stretches, neck strengthening exercises, aerobic exercise and trigger point exercises.

Pain scales

According to the Interactive Guide to Physical Therapist Practice, careful evaluation of the patients' perception of the intensity, quality, and distribution of their pain is important in the assessment of treatment outcomes. There are several methods of pain evaluation used in the clinical setting including verbal, visual, numeric, and semantic differential scales

Simple descriptive scale

The simple descriptive scale (SDS), also called the verbal pain report, uses a 4- or 5-point scale based on the patient's selection of a word that best describes current pain intensity. The value of this scale appears to be limited by its lack of sensitivity in detecting small changes in pain intensity.

Visual analog scale

The visual analog scale (VAS) is a 10-cm line, oriented vertically or horizontally, with one end representing "no pain" and the other end representing "pain as bad as it can be." The patient is asked to mark a place on the line corresponding to the current pain intensity. The VAS is the most frequently used pain measure because it is simple to use and has good psychometric properties.

Numeric rating scale. The numeric rating scale (NRS) is a verbal or written determination of a pain level on a scale from 0 to 10, in which 0 represents no pain and 10 represents excruciating pain. An appropriate neck exercise program treated most of these symptoms as follows: Flexibility and stretching exercises can expand or preserve the range of motion and elasticity in affected cervical (neck) joints, and thus relieve the stiffness that leads to pain. As a general rule, neck stretching is best done every day, and some stretches should be done several times a day. Specific strengthening exercises will help maintain improved posture, which in turn will lessen or eliminate recurrent flare-ups of pain. As a general rule, neck strengthening exercises should be

done every other day to allow muscles time to repair themselves. Aerobic exercises increase blood flow to the muscles and soft tissues of the neck and upper back, which can help loosen the muscles and increase range of motion. In addition, endorphins are also produced after about 30 to 40 minutes of aerobic exercise. Endorphins are the body's natural painkillers and they can help reduce neck pain.

Results

After 6 months of study, 80% of volleyball players with no prevention advices suffered of cervical pain from incorrect posture. 20% had neck pain from injuries of falls. The results of the compared control group were 10% of neck pain from postural disorders. Other 90% had no muscle pain.

Conclusions

Adding specific neck stabilization exercises to a general neck advice and exercise program provided better clinical outcome overall in the physical therapy treatment of volleyball neck pain. Both stretching exercise and manual therapy considerably decreased neck pain. Stretching exercises can be recommended in the first instance as an appropriate therapy intervention to relieve pain, at least in the short-term.

The following steps can prevent neck pain or help your neck pain improve:

- Use relaxation techniques and regular exercise to prevent stress and tension to the neck muscles.
- Learn stretching exercises for your neck and upper body. Stretch every day, especially before and after exercise. A physical therapist can teach you these exercises.
- Use good posture, especially if you sit at a desk all day. Keep your back supported.
- Evaluate your sleeping conditions and everyday working.

References:

Ljungquist T., Jensen I.B., Nygren A., Harms-Ringdahl K. Physical performance tests for people with long-term spinal pain: aspects of construct validity. J Rehabil Med. 2003;35:69–75.

Devereaux MW. Neck pain. Med Clin North Am. 2009;93:273-284.

Gross A, Miller J, D'Sylva J, et al. Manipulation or mobilisation for neck pain. Cochrane Database Syst Rev. 2010 Jan 20;(1):CD004249.

Jones FW. Variations of the First Rib, associated with Changes in the Constitution of the Brachial Plexus. J Anat Physiol. 1911 Apr;45(Pt 3):249–255.

Murphy JB. IV. A Case of Cervical Rib with Symptoms resembling Subclavian Aneurism. Ann Surg. 1905 Mar;41(3):399–406.

Hoving J., Pool J., Van Mameren H. Reproducibility of cervical range of motion in patients with neck pain. BMC Musculoskelet Disord. 2005;6:59.

Viikari-Juntura E. Interexaminer reliability of observations in physical examinations of the neck. PhysTher. 1987;67:1526–1532.

Larsson B., Bjork J., Elert J., Gerdle B. Mechanical performance and electromyography during repeated maximal is kinetic shoulder forward flexions in female cleaners with and without malign of the trapezoids muscle and in healthy controls. Eur J Appl Physiol. 2000;83:257–267.

Kumbhare D.A., Balsor B., Parkinson W.L., Harding Bsckin P., Bedard M., Papaioannou A. Measurement of cervical flexor endurance following whiplash. DisabilRehabil. 2005;27:801–807.

Andersen J.H., Gaardboe O. Musculoskeletal disorders of the neck and upper limb among sewing machine operators: a clinical investigation. Am J Ind Med. 1993;24:689–700.

Sandmark H., Niseli R. Validity of five common manual neck pain provocative tests. Scand J Rehabil Med. 1995;27:131–136.