Effect of Stretching Exercise on Cervical ROM in Elderly

Ho-young Jeon, PT, MS, Sang-yeol Lee, PT, MS*, Sung-soo Bae, PT, PhD
Geon-jeong Lee, PT, PhD, Chel Jang, PT, MS

Major in Physical Therapy, Department, of Rehabilitation Science, Graduate School, Daegu University,
1Department of Physical Therapy College of Rehabilitation Science, Daegu University,
2Kyungnam College of Information and Technology

노인환자의 스트레칭 운동이 목 가동범위에 미치는 영향
전호영 · 이상열 · 배성수1 · 정철2 · 이건철2

대구대학교 대학원 재활과학과 물리치료전공, 1대구대학교 재활과학대학 물리치료학과, 2경남정보대학

Abstract

Purpose: The purpose of this study was to determine the effects of stretching exercise on cervical ROM in elderly people.

Methods: The subjects were divided into two groups, an exercise group and a control group. The exercise group performed stretching exercises for 4 weeks, while the control group received no treatment for the same period. The cervical ROM was measured using a goniometer before and after the intervention.

Results: There was a significant increase in the cervical ROM in the exercise group compared to the control group.

Conclusions: The results of this study suggest that stretching exercises can improve cervical ROM in elderly people.

Keywords: stretching, cervical ROM, elderly

1. INTRODUCTION

As of year 2000, Korea has become the aging society since the number of people aged over 65 in Korea is now approximately 3.37 million which is over 7.1% of the whole population. In 2019, the rate of the elderly is estimated to double up to 14.4% and Korea will enter the aged society. (National Statistical Office, 2001).

Aging in general refers to the physical imbalance and gradual resistance of the body structure and function that makes it difficult to adopt to the
internal and external environment (Bae, et al., 1996). As aging process advances, not only all the functions but also the range of motion decreases as well (Kim & Shim, 1996; Engsberg, et al., 1993). Among those aging people, the number of people with neck pain is now increasing and neck pain is becoming a problem as serious as the back pain (Park, 2000).

If neck pain is not properly treated when it is limited only in the neck area, it spreads to the lower parts such as back, arms and even fingers. Or, it causes pain in upper part of the neck such as pain in the back of the head, migraine, dizziness and tinnitus (Lee, 1999). Therefore, many scholars recommend low-intensity stretching that is interesting and easy to do in order for the elderly to prevent their joints from declining and maintain their flexibility and strength of their joints to a certain level (Kim et al., 1995; Chappelear, et al., 1985).

Stretching activities are effective for musculoskeletal system disorders since it increases the coordination between the nerve muscles and reduces the pain in the muscles that are overused (Sun & Park, 1997).

The fundamental principle of stretching is to expand the muscles more than the normal status by extending the length and it should be extended more than 10% compared to the natural length in order to improve the flexibility. When moving the fingers, actual resistance of the tissues can be felt while superficial tissues are adhered to the deep tissues and this is how mobility of the tissues in the area is increased (Park & Park, 2005; Bae, et al., 2002; Kim & Kim, 2002).

Static stretching which is the most-generally used method among all the stretching methods is to gradually and slowly extend the muscles and joints to the maximum and stay at that point for about five to ten seconds. It is also called ‘Slow stretch’ and it has been used for a long period of time. It is known to be effective in increasing the flexibility (Lee & Jo, 2005).

For elderlies, stretching not only increases the flexibility but also relieves the tension in the muscles and prevents muscles from adhering too much. In addition, it expedites blood circulation and respiratory functions and improves environment adaptability (Park & Park, 2004).

Therefore, the purpose of this study is to properly and safely adopt cervical motion using the stretching exercises to the elderly patients with neck pain and identify the changes in cervical angle and pain before and after the treatment.

II. METHODS

1. Subject

The subjects of this study are twenty patients with myofascial pain syndrom who are in their 70s and 80s and went through the physical therapy sessions from March 2008 to May 2008 in ‘H’ hospital located in Namhaegun, Kyeongsangnam-do. Average age of 20 volunteers (10 male, 10 female) is 73.30±6.38.

The subjects were neck pain patients in the subacute stage without other ailments such as herniated intervertebral disc, spondyloarthropathies and past surgical operations. The subjects were able to fully understand the directions from the researcher and provide full cooperation.

2. Method of experiment

They were classified randomly and treated three times a week with 15 minutes of hot pack, 10 minutes of ultrasonic waves and ten minutes of transcutaneous electrical nerve stimulation and stretching activities. The ultrasonic wave treatment was provided as 1MHz, 1.5W/cm² 12 times in 4 weeks. The part treated was the trapezius muscle.