

Original Paper

The comparison of Longus colli muscle size and shape ratio between healthy subjects and chronic neck pain patients using ultrasonography

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Abstract

Background and Objective: Muscle size is considered to be a good indicator of muscle function. Previous studies demonstrated a major role for longus colli muscle in cervical spine stabilization. This study was designed to compare muscle size and shape of cervical longus colli muscle between patients with bilateral chronic neck pain and healthy subjects.

Materials and Methods: In this case – control study, bilateral ultrasound images of longus colli muscle, 2 centimeters below the thyroid cartilage were taken in 20 subjects (10 males and 10 females) with bilateral chronic neck pain and in 20 healthy subjects during 2008. Cross sectional area (cm²) and muscle shape ratio (ratio between lateral and anterior posterior dimensions) were measured. T- test was used for comparison of cross sectional area and shape ratio of right and left sides between the two groups.

Results: In healthy subjects the cross sectional area of longus colli muscle in right and left sides were 0.85±0.11 and 0.86±0.12 respectively which was greater than that of neck pain patients: 0.76±0.11 and 0.68±0.07 respectively (P<0.05). In addition, longus colli muscle shape ratio of healthy subjects in right and left sides was 1.18±0.17 and 1.16±0.19 respectively which was smaller than that of neck pain patients: 1.50±0.25 and 1.50±0.27 respectively (P<0.05).

Conclusion: This study showed that patients with bilateral chronic neck pain had generally smaller cross sectional area and larger shape ratio of longus colli compared to controls.

Keywords: Cervical spine, Rehabilitative Ultrasound Imaging, Longus colli muscle, Neck pain

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