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学位論文題名 (注: 学位論文題名が英語の場合は和訳をつけること)

Analysis of cervical and upper thoracic spinal segmental rotation angles during neck rotation: Comparison with and without neck pain

頸部回旋に伴う頸椎・胸椎の分節的回旋角度の解析: 頸部痛の有無での比較

学位の種類: 修士 (理学療法学)

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注: 1 ページあたり 1,000 字程度 (英語の場合 300 ワード程度) で、本様式 1~2 ページ (A4 版) 程度とする。

Neck pain is one of the most common manifestations of musculoskeletal disorders. Manual interventions to the thoracic spine have been recommended as one of the physical therapies for treating neck pain. However, only a few studies have investigated the thoracic spine mobility associated with neck movement. In this study, we used magnetic resonance imaging (MRI) to examine the segmental rotation angle of the cervical and thoracic spine with neck rotation. We also examined the association between cervical pain and the segmental rotation angle. The subjects included nine individuals who experienced neck pain (pain, Group P) and 11 who did not experience any pain (non-pain, Group N). The rotation angle was measured using MRI. The imaging limb position was at 90% of the maximum neck rotation. The MR images were analyzed using the image analysis software to calculate the rotation angle of C1 to Th3. The rotation angle of the segment was then calculated by subtracting the rotation angle corresponding to the lower vertebra from that corresponding to the upper vertebra. The rotation angle of each segment was summed up from the right and left rotation angles.

Then, the segmental rotation angles were compared between groups. The results showed that the rotation angles of C3-C4, C7-Th1, and Th1-Th2 were significantly smaller in Group P than in Group N, and C5-C6 and C6-C7 were significantly larger in Group P than in Group N. The results of this study showed the hypermobility of the lower cervical spine in subjects who experienced neck pain. Further, we attributed this hypermobility to the compensation through hypomobility of the cervico-thoracic transition to the upper thoracic spine. We believe that the findings of this study will be useful for preventing and relieving neck pain.