

신경근육재활 및 전기진단

게시일시 및 장소 : 10 월 18 일(금) 13:15-18:00 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 15:45-16:30 Room G(3F)

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### **Consideration of Spiral CT as a diagnostic tool for Thoracic Outlet Syndrome: A Case Report**

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Thoracic outlet syndrome (TOS) is disorders attributed to the compromise of either or both blood vessels and/or nerves at any points between the base of the neck and axilla, including anatomical landmarks such as interscalene triangle, costoclavicular space and coracopectoral tunnel. The diagnosis of TOS requires history taking and physical exam along with findings by electromyography, X-ray, CT, MRI and ultrasonography. The literature includes a report of anatomical measurement points in TOS by MRI. However there is no report involving the evaluation of this condition using the results by CT image. We report a 21-year-old female patient who presented with dyesthesia along with decreased power in the left hand grip. Her symptoms and physical examination finding correlated with the suspicion of TOS, however electromyography findings were ambiguous. We treated the patient with the suspicion of TOS with notable improvement of symptoms. Two years thereafter, her symptoms recurred with worsening included bluish color of the left upper limb. We chose spiral CT scan as a cost-effective diagnostic tool for the assessment of vascular TOS. The results of this imaging study did not reveal any anatomical abnormalities such as cervical rib, fibrous bands and first rib anomalies. Referring to previous studies using MRI with three particular structures which differentiated TOS from non-TOS patients, we compared the findings from our patient with those of 30 non-TOS patients (16 males and 14 females; mean age  $54.8 \pm 16.27$ ). A spiral CT was taken with bilateral arms in hyper-abduction to  $130^\circ$  and in external rotation in accordance with the protocol in the aforementioned MRI study. The resultant data were measured by one experienced radiologist. The acquired data of the three structures are following parameters: (1) Minimum costoclavicular distance, (2) subclavius muscle thickness and (3) distance between posterior border of pectoralis minor muscle and posterior axillary lining at the passage of the axillary vessels. Comparing our patient with that of the non-TOS group, the first parameter is 3mm and  $9.17 \pm 2.34$ mm, the second parameter is 4mm and  $5.94 \pm 1.29$  mm and the third parameter is 22mm and  $20.77 \pm 3.54$ mm. In the female non-TOS group, the first is  $8.36 \pm 2.65$ , the second is  $5.38 \pm 1.28$  and the third is  $19.64 \pm 3.95$ . The comparative results showed a distinct decline in the value of the costoclavicular distance and it is highly considered as a plausible cause of TOS in our patient. Although there may not exist any abnormal structures in the thoracic outlet region, such particular finding serves as a meaningful criterion when prescribing an appropriate physical therapy plan.

We propose that CT scan should be a useful diagnostic tool for TOS with as a cost-effective method of evaluation useful for appropriate treatment plan. Further studies of TOS patients using CT imaging to compare with those of non-TOS patients is necessary for adequate management of these patient