Abstract #767.doc

Morphological Feature of Cervical Nerve Root with Motor Function in 219 Normal Volunteers by Ultrasound

Introduction. Each of the cervical nerve roots affected a different motor or sensory area. Although there were several studies that performed a detailed assessment of cervical nerve root anatomy in cadavers, only a few studies on the thickness of cervical nerve roots in living specimens have been performed. We examined whether the thickness of the C5, C6, and C7 nerve roots, as well as the area supplied by each of the roots, varied.

Aim. To examine the cross-sectional area (CA, mm^2) of the C5, 6, and C7 nerve roots using ultrasound.

Methods. All 219 subjects (99 men and 120 women, mean age 47 ± 15 years) were healthy volunteers. The diameter and transverse diameter were measured via ultrasound and the CA was calculated for each of the C5-7 nerve roots.

Results. The CA of the C5 nerve root was also significantly thinner than the other 2 nerve roots, and C7 was smaller than the C6 nerve root. There was no significant difference in the laterality at each nerve root. Comparing the males with the females, there was no significant difference at each nerve root. The relationships between the height and CA at C5, 6, and C7 in males and females revealed that the CA in C5, C6 and C7 were not significantly correlated with subject's height.

Conclusions. The C5 nerve root was significantly thinner than the C6 and C7 cervical nerve roots, which could be one reason why C5 nerve root is only damaged in comparison to C6 or C7 after cervical surgery.