신경근육재활 및 전기진단
발표일시 및 장소 : **10 월 27 일(토) 14:50-15:00 Room D(5F)**

OP3-3-6

Ultrasound Evaluation of Facial Nerve Diameter for Predicting Prognosis in Bell's Palsy Patients

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Objective
Prognosis for Bell's palsy is good, but the proportion of patients with poor outcomes may reach 30%. Its exact etiology and pathogenesis are not well understood but one of the postulated theories is that the nerve gets entrapped and compressed in its bony canal as a result of epineural edema. Ultrasound (US) may provide a tool to assess the anatomical aspects of the nerve, complementary to the functional aspects assessed by electrodiagnostic studies. The aim of this study was to evaluate the prognostic role of neuromuscular ultrasound in Bell's palsy.

Method
A total of 45 patients (53.76±16.68 years) with acute onset of Bell's palsy were included in the study. We measured the bilateral diameter of the distal facial (VII) nerve using US, inside the parotid gland after its exit from the stylomastoid foramen, along with calculation of side to side differences in each patient. Direct facial nerve conduction studies (VII NCS) recording supramaximal compound muscle action potentials of 4 facial muscles (frontalis, orbicularis oculi, nasalis and orbicularis oris) were determined bilaterally and the percent amplitude reduction was calculated by comparing the affected side with the healthy side. If the percent amplitude reduction of any facial muscle satisfy the condition of more than 90% was assigned to the experimental group (i.e. unfavorable prognosis group), and the remainder to the control group (i.e. favorable prognosis group). Data from the experimental group consisting of bilateral facial nerve diameters and side to side differences were compared with the control group.

Results
There was no significant difference in mean facial nerve diameter at the healthy side between controls and experimental group (0.73±0.10 mm, 0.71±0.14 mm). Mean facial nerve diameter at the affected side was 0.80±0.11 mm in controls and 0.92±0.23 mm in the experimental group. Mean side-to-side differences in diameter was 0.08±0.11 mm in controls and 0.21±0.24 mm in the experimental group. In affected side, the facial nerve diameter was significantly larger in the experimental group than controls (p=0.036, 95%

CI=0.008~0.236), with a significant side-to-side difference in the experimental group as well (p=0.017, 95% CI=0.026~0.248).

Conclusion
The significant difference in facial nerve diameter and the side-to-side difference in diameter between the two groups denotes the ability of ultrasound to detect facial nerve enlargement which may be useful to predict prognosis in patients with Bell's palsy.