Novel Method of Repetitive Nerve Stimulation in Trapezius Muscle: Middle Trapezius method
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Introduction

Nerve conduction study of upper trapezius muscle is difficult because of motion artifact of upper trapezius muscle. Repetitive nerve stimulation (RNS) of upper trapezius muscle is more difficult due to the proper fixation of the recording electrode over the muscle. The middle trapezius muscle recording has less motion artifact, we propose the middle trapezius recording methods for repetitive nerve stimulation.

Methods

Subject: 12 normal adults (age: 37 ± 17 (Mean ± SD), Male: Female = 5:7)
Testing equipment: Viking select Nicolet
Stimulation site: accessory nerve on the side neck 1)
Stimulation method: 3Hz repetitive stimulation
Fixation: grab a chair bottom in a sitting position by the subject

![Figure 1: Location of recording electrode](image)

The compound muscle action potential (CMAP) amplitude decrements (%) were measured in the both group, then we calculated the mean consecutive difference 2) (MCD) of individual decrement. Small MCD means little fluctuation.

![Figure 2: MCD value of upper trapezius recording with/without fixation and of middle trapezius recording with/without fixation](image)

Proper fixation of target muscle is difficult in trapezius muscle. The ability to fix the muscle by the subject or the examiner may vary.

The muscle contraction of middle trapezius is smaller than that of upper trapezius. Smaller contraction of muscle means less artifact.

⇒ Middle trapezius recording without fixation is suitable for RNS and nerve conduction study.

![Figure 3: RNS recordings in one of the subjects](image)

Middle Trapezius recording without muscle fixation for RNS is novel and suitable recording.

Conclusion

References