Effect of natural mediotrusive contact on electromyographic activity of jaw and cervical muscles during chewing

Por: Fuentes, AD (Daniel Fuentes, Aler)[1,2]; Miralles, R (Miralles, Rodolfo)[2]; Santander, H (Santander, Hugo)[2]; Gutierrez, MF(Felipe Gutierrez, Mario)[1,2]; Bull, R (Bull, Ricardo)[3]; Martin, C (Martin, Conchita)[4]

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Resumen

Objective. This study evaluated the effect of a natural mediotrusive contact on the electromyographic (EMG) activity of the anterior temporalis and sternocleidomastoid muscles during chewing in healthy subjects. Materials and methods. The study sample included two groups of 15 subjects each (Group 1: with natural mediotrusive contact; Group 2: without natural mediotrusive contact). Bilateral surface EMG activity was recorded on anterior temporalis and sternocleidomastoid muscles during unilateral chewing of a half cookie and unilateral chewing of a piece of apple. Anterior temporalis and sternocleidomastoid muscle activity was normalized against activity recorded during maximal voluntary clenching in intercuspal position and maximal intentional isometric head-neck rotation to each side, respectively. The partial and total asymmetry indexes were also calculated. Data were analyzed using Mann-Whitney, Wilcoxon and unpaired t-test. Results. EMG activity of anterior temporalis and sternocleidomastoid muscles showed no significant difference between the groups. EMG activity of anterior temporalis was similar between working and non-working sides during chewing in both groups. EMG activity of sternocleidomastoid muscle was higher in the working side than in the non-working side in Group 2 subjects. Asymmetry indexes were not significantly different between groups. Conclusions. The similar EMG pattern and asymmetry indexes observed suggest the predominance of central nervous control over peripheral inputs on anterior temporalis and sternocleidomastoid motor neuron pools.

Palabras clave

Palabras clave de autor: Electromyography; mastication; masticatory muscles; neck muscles
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Información del autor

Dirección para petición de copias: Fuentes, AD (autor para petición de copias)

Univ Chile, Fac Dent, Inst Res Dent Sci, Sergio Livingstone Pohlhammer 943,Independencia, Santiago, Chile.

Direcciones:

[1] Univ Chile, Fac Dent, Inst Res Dent Sci, Santiago, Chile

[2] Univ Chile, Fac Med, Inst Biomed Sci, Oral Physiol Lab, Santiago, Chile

[3] Univ Chile, Fac Med, Inst Biomed Sci, Dept Physiol & Biophys, Santiago, Chile

[4] Univ Complutense Madrid, Sch Dent, Dept Stomatol 4, Madrid, Spain

Direcciones de correo electrónico:aler.fuentes@odontologia.uchile.cl

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