

Decreased cognitive function is associated with dysphagia risk in nursing home older residents

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<https://hdl.handle.net/2324/2236148>

出版情報 : Kyushu University, 2018, 博士 (歯学) , 課程博士

バージョン :

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論 文 名	Decreased cognitive function is associated with dysphagia risk in nursing home older residents (施設入所高齢者における認知機能低下と嚥下障害リスクの関連)			
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論 文 審 査 の 結 果 の 要 旨

Reduction in cognitive function can influence the intake of food during swallowing, and may be an aggravating factor in dysphagia. The aim of this study was to examine the association between cognitive function and dysphagia risk among Japanese nursing home residents. This cross-sectional study included 236 residents aged ≥ 60 years from eight nursing homes. Screening of dysphagia, especially aspiration risk, was conducted using the Modified Water Swallow Test, whose scores from one to three were classified as at risk of dysphagia. Cognitive function was evaluated using Mini-Mental State Examination (MMSE). The participants were divided into dentulous and edentulous groups, because the number of teeth could influence swallowing function. The odds ratio (OR) and 95% confidence interval (CI) for dysphagia risk based on the scores of MMSE were calculated using logistic regression. Among the 236 participants (111 dentulous and 125 edentulous participants) included in this study, 40 participants (16.9%) belonged to risk of dysphagia. Dentulous participants with higher scores of MMSE tended to have significantly lower odds of dysphagia risk after adjusting for covariates (OR = 0.87, 95% CI = 0.80-0.96). Despite the lack of significant differences, edentulous participants with higher score of MMSE had lower odds of dysphagia risk (OR = 0.92, 95% CI = 0.83-1.00). In conclusion, decreased cognitive function was suggested to be an independent predictor of dysphagia among dentulous and edentulous adults.

以上の内容をもって、本論文は施設入所高齢者における認知機能低下と嚥下障害リスクの関連に関する有意な知見を呈している。従って、博士（歯学）の学位授与に値する。

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論 文 名	上下顎無歯顎者の咀嚼側および咀嚼機能の検討			
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論 文 審 査 の 結 果 の 要 旨

Aims

This purpose of this study was to evaluate the degree of the mastication predominance of edentulous individuals with complete dentures by comparing edentulous patients with complete dentures to healthy dentate subjects and bilateral and unilateral posterior missing teeth subjects with electromyographic (EMG) analysis and visual analogue scale (VAS).

Methods

Twenty-five edentulous individuals with complete dentures were instructed to chew on the right side and then on the left side, and EMG activity of the bilateral masseter muscles was recorded simultaneously. The concordance rates between instructed and judged chewing sides were calculated. Then, 30 healthy dentate subjects, 19 bilateral posterior missing teeth subjects, 30 unilateral posterior missing teeth subjects, and 25 edentulous subjects were instructed to freely chew three kinds of test foods (chewing gum, peanuts, and gummy jellies). In each trial, EMG activities were recorded from bilateral masseter muscles and the mastication predominant index (MPI) was calculated. Self-awareness of mastication predominance (SAMP) was evaluated by using a modified visual analogue scale. The data were compared in all subject groups.

Results

Concordance rate - the percentage of events (chewing cycles) where the instructed chewing side coincided with the chewing side, as judged by EMG analysis - was >93% for all test foods among complete denture wearers. The MPIs of the edentulous group for each test food were as follows: peanuts 68.4%, gummy jellies 50.0%, and chewing gum 47.4%. Statistical analyses showed no significant difference in MPI between edentulous and the other three groups. In edentulous group, there was significant correlations between SAMP and mastication predominance score (MPS) in chewing gum.

Conclusion

Our analysis suggests that chewing side evaluation of edentulous subjects with EMG was effective to reveal mastication predominance.

以上の内容をもって、本論文は上下顎無歯顎者の咀嚼側および咀嚼機能に関する有意な知見を呈している。従って、博士（歯学）の学位授与に値する。