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The effect of removable artificial dentures on swallowing

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Abstract

Objective: To investigate the relationship between removable dentures and swallowing and find the affecting factors.

Method: 24 patients with removable denture who were referred for videofluoroscopic swallowing study (VFSS), were enrolled. We evaluated the change of swallowing function using VFSS before and after the removal of the removable denture. The masticatory performance by Kazunori's method, sensation of oral cavity by Christian's method, underlying disease, and National Institutes of Health Stroke Scale (NIHSS) for level of consciousness were collected. Functional dysphagia scales, including the oral transit time (OTT), pharyngeal transit time (PTT), percentage of oral residue (ORES), percentage of pharyngeal residue (PRES), oropharyngeal swallow efficiency (OPSE), and presence of aspiration were measured.

Results: Four patients dropped out, and 20 patients were analyzed (stroke: 13 patients, pneumonia: 3 patients, and others: 4 patients). The mean age was 73.3±11.4 years. There were significant differences between before and after the removal of the denture for the OTT. OTT reduced significantly after the removal of the denture (8.87 vs. 4.38s, p=0.01). OPSE increased remarkably after the removal of the denture, but did not show significant difference (18.24 vs. 25.26%/s, p=0.05). The OTT and OPSE, while donning a removable denture, were correlated with the masticatory performance (OTT: p=0.04, OPSE: p=0.003) and sensation of oral cavity (OTT: p=0.006, OPSE: 0.007).

Conclusion: A removable denture may give negative effects on the swallowing function, especially OTT and OPSE. These affections may be caused by impaired sensation of the oral cavity or masticatory performance, induced by the removable denture.

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