Dysphagia and Dysphagia Rehabilitation in the Elderly

In Japan, the third leading cause of death is aspiration pneumonia. Maintenance of oral hygiene and feeding functions are important elements, especially in patients whose dysphagia is caused by stroke, neurological diseases, or the sequelae to head and neck cancer, as well as in the elderly to prevent aspiration pneumonia. It should also be noted that not only oral health care and physical therapy related to feeding functions but also dental treatment is included in the clinical management during interventions whenever needed. On the other hand, for the patients and/or elderly in need of assistance in maintaining a safe diet, it is recommended that a specialized team comprising physicians, dentists, and speech therapists in functional rehabilitation observes meal conditions of the subjects and evaluates such factors as meal contents, posture during meals, usage of dishes and cutlery, meal times, status of consciousness, perception, and motivation. First, I will present the clinical interventions to those patients, which include oral health care, dental treatment, physical therapy and meal assistance, as well as team approaches in those circumstances. In addition, clinical and basic research results will be introduced, which are expected to foster the understanding of physiology in chewing and swallowing. These results are also expected to develop the clinical technology to maintain or recover the feeding functions.

Key Words dysphagia, pneumonia, elderly

Possible Neuroplasticity of Swallow-Related Neural Network

We recently developed one of possible therapeutic
technologies for dysphagic patients; pharyngeal electrical stimulation. In a series of studies, the effects of repeated pharyngeal electrical stimulation on swallowing performance were examined. Ten minutes of pharyngeal electrical stimulation (5 Hz, 1 ms pulse duration) was applied once a day for 5 d. The effects of stimulation were evaluated both on voluntary and involuntary swallowing behavior. For the effects on voluntary swallowing, the repetitive saliva swallowing test (RSST) was used, in which subjects were instructed to swallow their own saliva as quickly as possible for 30 s and the number of swallows was counted. Changes in involuntary swallowing performance was measured with the swallowing response time (SRT), where water was injected into the pharynx at 0.1 mL/sec and the initiation latency of first swallow was measured. RSST and SRT were recorded before stimulation (baseline) and every 10 min up to an hour after the 10-min stimulation. As a result, while SRT was not affected by pharyngeal stimulation, the number of swallows in RSST significantly increased at 60 min. In addition, 5-d stimulation resulted in a gradual increase in a number of swallows in RSST. The results suggest that repeated pharyngeal stimulation can lead to neuroplasticity in the cortical excitability responsible for swallowing initiation and may be a potential method of dysphagia rehabilitation.

REFERENCES