論 文 要 旨

Comparison of mouth rinsing performance between adults and children using a contactless vital sensing camera

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Abstract

Background

Evaluating mouth rinsing skills is useful for assessing oral function, however current evaluation methods are subjective.

Objectives

This study compared mouth rinsing between adults and children using a contactless camera to capture lip motion.

Methods

The subjects comprised 16 adults and 13 children with no oral dysfunction. A compact vital sensing camera adapted from a Microsoft Xbox One Kinect Sensor® (Kinect) was placed 100 cm from the floor and 120 cm from the subject; 5, 10, and 15 mL of water were used as samples. Participants were instructed to hold the sample in the oral cavity, close the lips, and move the sample alternatively left and right for 15 s. Maximum/minimum displacement from the reference plane and rinsing cycle for each sample were analyzed by one-way analysis of variance.

Results

In adults, there was no significant difference in the maximum/minimum displacement between the left and right sides of the angulus oris due to differences in sample amount. In children, the right maximum significantly differed between the 5- and 15-mL and 10- and 15-mL samples, while the left maximum significantly differed between the 5- and 10-mL and 5- and 15-mL samples. The right minimum significantly differed between the 5- and 10-mL samples, as did the duration of mouth rinsing between the 5- and 15-mL samples.

Conclusions

In children, lip movement and mouth rinsing duration tended to decrease with increasing sample volume. Evaluating lip movement using a contactless vital sensing camera is useful for assessing children's development of oral function.