

# **Dentofacial morphology and tongue function during swallowing**

蔡吉陽

Cheng CF;Peng CL;Chiou HY;Tsai CY

## **Abstract**

To understand the role of the tongue in the development of occlusion, we examined the relationship between tongue movements during swallowing and dentofacial morphology with ultrasonography, cephalometric radiography, and dental casts. Duration, magnitude, and speed of tongue movements were measured in 112 healthy adult volunteers and compared with their dentofacial morphology with a simple correlation analysis. The results showed that the movements of tongue during swallowing are related to dentofacial morphology, especially in the motion magnitude of the early final phase (phase IIIa), but that few correlations are found when analyzing the duration and the speed of swallowing. The results also showed that the intermaxillary vertical dimension is significantly and positively correlated with the motion magnitude of the tongue movements. Furthermore, we found that arch length increased with prolonged duration of swallowing. This study showed that the computer-aided B+M mode of ultrasonography combined with the cushion-scanning technique is a valuable tool for investigating the relationship between tongue movements during swallowing and dentofacial morphology.