

The Cushion Scanning Technique: A Method of Dynamic Tongue Sonography and Its Comparison with the Transducer-Skin Coupling Scanning Technique During Swallowing.

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Abstract

RATIONALE AND OBJECTIVES: We describe the cushion scanning technique (CST), which solves common difficulties encountered during ultrasound investigations of swallowing. These problems arise when the transducer is held in direct contact with the submental area. Some of these problems include movements of the ultrasound transducer during swallowing and compression of the submental region, which causes abnormal swallowing patterns. **METHODS:** To compare ultrasound images produced with the conventional hand-held transducer-skin coupling scanning technique with the CST, we studied five participants with no clinical signs of tongue dysfunction. All tongue movements were recorded by real-time B+M-mode sonography. **RESULTS:** Images produced with the hand-held transducer were found to be unstable because the transducer moved during swallowing, thereby changing the scanning section. By contrast, the transducer and the participant's head remained in a constant position throughout the CST trial. There was no obvious compression of the submental muscles. **CONCLUSION:** The CST allows for a better intraindividual reproducibility of the swallowing pattern and for a more standardized and objective ultrasound examination than the hand-held transducer-skin coupling scanning technique.