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Static MR Images for Diagnosis of Swallowing

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Abstract: Evaluation of swallowing has been made possible by cine-Magnetic resonance (MR) imaging with high time resolution. However, the spatial resolution in cine-MR imaging remains inadequate for the detection of anatomical structures. Therefore, it is necessary to refer to static MR images in conjunction with cine-MR imaging. The aim of this study was to determine which MR parameters were appropriate for static imaging of the anatomical structures involved in swallowing. MR imaging was carried out, and T1-weighted, T2-weighted and proton-density-weighted MR images were obtained in the sagittal plane in 5 healthy volunteers. Each image was evaluated for anatomic landmark clarity by 3 oral radiologists. The anatomic landmarks selected were the lip, tip of tongue, center of tongue, tongue base, soft palate and epiglottis. Differences in clarity among 3 imaging modalities were evaluated. A 3-point score rating system was used. The results showed that lower TE sequences, *i.e.*, either T1-weighted or proton-density-weighted images, were the most suitable for use in conjunction with cine-MR imaging in diagnosing swallowing disorders.

Key words: Swallowing, Magnetic resonance imaging, Static imaging, Anatomic

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