

DT-MRI study on masticatory muscles in normal and pathological subjects

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In our recent research we tested the use of DTI in the study of muscles, considering anatomical and clinical application. We have demonstrated the possibility to detect even minor muscle injuries of athletes undetectable with traditional ultrasound techniques. In this report we intend to apply this method to the study of the anatomical and volumetric masticatory muscles and particularly of masseter muscle. We selected a sample of 5 healthy subjects and 5 patients with cross-bite. Our results demonstrate the possibility to distinguish, on the basis of the different orientation of the muscle fibers, masseter muscles from pterygoid muscles. In addition, with post-elaboration of DTI anisotropy map, we evaluated different masticatory muscles density revealing their reduction along cross-bite side and a light increment in contralateral muscle. These evidences confirm our previous results obtained with elettromiography and histochemistry techniques.

Key words

DT-MRI, masseter, cross-bite.