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| Nota di contenuto | Part 1: Role of MRI in imaging the skeletal musculature: Value of Magnetic Resonance Imaging of the Skeletal Musculature from a clinical point of view -- Correlation of skeletal muscle anatomical to MRI and US findings -- Imaging the skeletal muscle – when to use MRI and when to use ultrasound -- Part 2: Modern MRI techniques for assessment of the skeletal musculature: Whole-body MRI for evaluation of the entire skeletal system -- Diffusion-weighted and diffusion-tensor imaging: Applications in skeletal muscles -- Assessment of skeletal muscle perfusion using MRI (DCE, ASL, BOLD) -- Skeletal muscle MR imaging beyond protons -- MR spectroscopy and spectroscopic imaging for evaluation of skeletal muscle metabolism: Basics and applications in metabolic myopathies -- Part 3: MRI in the diagnostic work-up of the skeletal musculature: MRI of muscle injuries, such as muscle strains -- MRI in neurogenic myopathies and muscle denervation -- MRI in muscle dystrophies and other myogenic myopathies -- MRI in inflammatory myopathies and autoimmune-mediated myositis -- MRI in muscular channelopathies and myotonias -- MRI in muscle tumours and tumours of the muscle sheaths. |
| Sommario/riassunto | Although muscular diseases are a huge and heterogeneous group, in most cases of progressive disease the result is focal or general muscular weakness that presents as an unspecific symptom. Imaging techniques that offer differential diagnostic clues are therefore urgently needed. Despite this, MRI has to date often been assigned a subsidiary |

role in the diagnostic work-up of these diseases owing to the frequent inability of routine MRI protocols to detect pathognomonic findings. This situation is changing with the advent of modern MRI techniques that offer deeper insights into surrogate pathophysiologic parameters, such as muscular microcirculation, sodium homeostasis, energy and lipid metabolism, and muscle fiber architecture. Much higher levels of acceptance and demand by clinicians can be anticipated for these new techniques in the near future, and radiologists will have to face up to the increasing value of MRI of the skeletal musculature. In this book, recognized experts from around the world provide a comprehensive overview of the value of cutting-edge MRI for the assessment of normal and diseased skeletal muscle. A range of aspects are covered, from the general role of MRI in imaging the skeletal musculature, including in comparison with ultrasonography, through to the current value of MRI in the diagnostic work-up of different diseases. In addition, several chapters present research findings in respect of modern morphological and functional MRI techniques for assessment of the skeletal musculature and provide examples of the added value provided by these techniques when evaluating muscular diseases.