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Review Article

Clinical Applications of Cardiovascular Magnetic Resonance Methods

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Abstract:

The application of magnetic resonance to diagnostic medical imaging stands as one of the great scientific achievements in the past 50 years. Magnetic resonance techniques are easily applied to organs which remain stationary during the imaging procedure, such as the brain and musculoskeletal system. Imaging of moving heart structures and circulating blood is considerably more difficult. Clinical application of magnetic resonance to the cardiovascular system remains challenging but continuing technological innovations have enabled cardiovascular specialists to more effectively utilize magnetic resonance in clinical practice as well as for innovative research. Cardiovascular magnetic resonance imaging (MRI) and magnetic resonance angiography (MRA) are now being used with increasing frequency for the assessment of patients with cardiovascular disease. This paper will introduce clinicians to the current applications of these flexible and robust tools. A brief introduction will be given to the physics of MRI, the instrumentation and the imaging strategies. The main focus of the article, however, is to review how these techniques are being applied by clinicians in routine daily care.

Keywords:

Cardiovascular magnetic resonance methods . Diagnostic medical imaging . Magnetic resonance angiography

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