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Chest

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Current Trends in Chest MRI

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Since thoracic MR imaging was first used in a clinical setting, it has been suggested that MR imaging has limited clinical utility for thoracic diseases, especially lung diseases, in comparison with CT, V/Q scan and positron emission tomography (PET) or PET fused with CT (PET/CT). However, in some European countries and United States as well as East Asian countries, MR imaging, especially oncologic diseases, becomes practicable and applied in routine clinical practice as complementary roles for PET or PET/CT. In addition, recently developed pulmonary MR imaging with ultra-short TE (UTE) has enhanced the utility of MR imaging for thoracic diseases in routine clinical practice. Furthermore, MR imaging has been introduced as complementary role for assessing regional pulmonary function and patient's management. In 2020, the Fleischner Society as well as other societies published new position papers or review articles, which provides consensus expert opinions regarding appropriate clinical indications of lung MR imaging for not only oncologic but also pulmonary diseases.

In this lecture, I present MR imaging for thoracic diseases regarding its technical aspects and major clinical indications 1) in terms of what is currently available, 2) promising but requiring further validation or evaluation, and 3) developments warranting research investigations in preclinical or patient studies. I hope this lecture will encourage the audiences to apply or study lung MRI with appropriate indications and open new research fields in thoracic radiology.

Keywords: Lung, MRI, Malignancy, Nodule, Vascular Disease, Functional Imaging