Redefining MRI:
From Image to Insight

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KSMRM Educational Course 1

교육세션 1-1

Essentials of MRI in Abdomen: Liver

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Magnetic resonance imaging (MRI) plays a pivotal role in the noninvasive assessment of liver diseases, providing superior soft-tissue contrast and functional information without ionizing radiation. However, liver MRI remains technically demanding due to motion artifacts, complex contrast dynamics, and variations in acquisition parameters across scanners and institutions. This review summarizes essential principles and practical strategies for optimizing liver MRI protocols in clinical practice. We discuss commonly used sequences—including T1- and T2-weighted imaging, diffusion-weighted imaging, and dynamic contrast-enhanced MRI—and highlight technical pearls for improving image quality and diagnostic performance. Frequent pitfalls such as respiratory motion, suboptimal contrast timing, and non-respiratory motion artifacts are examined, along with strategies for mitigation. Emerging techniques such as deep-learning–based reconstruction, free-breathing diffusion imaging, and quantitative biomarkers are also briefly introduced. By understanding both the technical and clinical nuances of liver MRI, radiologists can enhance diagnostic confidence, streamline workflow, and ensure consistent image quality across diverse clinical settings.

Keywords: *MRI, Abdomen, Deep-Learning*