Redefining MRI:
From Image to Insight

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MRI Safety Management: Current Practice and Future Directions

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With advances in MRI technology and the expanding scope of clinical applications, the importance of MRI safety management has become increasingly recognized. In particular, the growing use of MR Conditional implants and various medical devices has created a more complex MRI environment, highlighting the need for a standardized safety management system encompassing patient screening, implant verification, examination protocol review, risk assessment, and post-examination management.

Despite these developments, MRI safety management in Korea still varies among institutions in terms of personnel, education, and operational systems. Furthermore, challenges remain in translating international guidelines into everyday clinical practice. MRI safety should not rely solely on individual experience but should be supported by standardized education, clearly defined roles and responsibilities, and systematic operational processes.

This lecture will first review recent changes in the MRI environment associated with the increasing use of implants and discuss the current status and challenges of MRI safety management in Korea. It will then introduce the activities of the Korean Society of Magnetic Resonance Technologists (KSMRT), including MRI safety education, the development of Level 1 and Level 2 educational programs, and the organization and dissemination of MRI safety guidelines. The lecture will also examine how these efforts contribute to the establishment of a stronger MRI safety culture.

In addition, practical clinical experiences will be shared through examples of implant verification, protocol review and implementation, safety management workflows, and near-miss cases encountered in daily practice. Practical approaches to establishing a safer MRI environment will also be presented.

Finally, the lecture will discuss the need for standardized educational systems, clinically oriented MRI safety guidelines, and collaborative frameworks that facilitate the sharing of experiences and cases among healthcare institutions to support the continued advancement of MRI safety management.

Keywords: *MRI safety MRI safety management, MR conditional implant, KSMRT, Clinical practice*