Challenges in Magnetic Resonance Imaging Anesthesia Findings and Recommendations

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To the Editor,

Nowadays, the number of magnetic resonance imaging (MRI) centers is growing daily as a result of technological advancements, the growing number of MRI centers, and the growing importance of MRI in diagnosis and treatment due to its improved quality and accessibility. The number of patients requiring anesthesia rises along with the demand for MR imaging. This letter aims to highlight the difficulties associated with anesthesia during magnetic resonance imaging.

Challenges regarding the physical location of the MRI device:

The MRI unit provides particular challenges because it is usually located outside of the operating room, requires specialist equipment of its own, and takes longer to prepare than a standard surgery.[1,2]

Communication challenges:

The existence of teams that do not collaborate frequently, the darkness of the room, the distance between the patient and the doctor, the loud noise level drowning out other devices' sounds and making them difficult to hear, and other factors are the causes of communication issues.[3,4]

Environmental risks and challenges:

Even heavy items, such as oxygen or nitrous oxide tanks, could unintentionally shoot projectiles into the scanner's bore due to the powerful static magnetic field.[4,5] In addition to heating tissue or devices, radiofrequency energy can create current in conductors including fluid-filled tubing, equipment cables, and electrocardiogram (ECG) leads.[4] Strong magnetic fields and radiofrequency radiation can produce artifacts that make it more difficult to interpret pressure waveforms or ECGs clinically.[6]

An evaluation of all of them reveals that anesthesia during MRI is now a method with its own inherent dynamics, requiring skill and cautious execution.

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