Danger: "Sandbag" in the MRI Room

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A PATIENT UNDERWENT magnetic resonance imaging (MRI) while she had a sandbag on her groin to help facilitate hemostasis after a procedure that involved femoral artery puncture. The staff assumed that the bag contained only sand. As the study began, the sandbag was pulled into the MRI coil, damaging the system. Fortunately, the patient wasn’t injured, according to the report.

What went wrong?

The unlabeled sandbag was found to contain ferromagnetic iron shavings and pellets. This sandbag, originally purchased for use in the hospital’s physical therapy department, shouldn’t have been brought into the MRI room.

What precautions can you take?

To keep patients, staff, and equipment safe, follow these suggestions:

- Purchase sandbags labeled with either the MR Safe or MR Conditional icon to indicate they’re safe for use in the MRI room.¹ See Coming to terms for MRI safety for more information.
- If your facility also uses ferromagnetic sandbags, be certain they’re labeled as MR Unsafe so they won’t be used in the MRI environment.
- Don’t take unlabeled sandbags into the MRI environment; assume that sandbags are MR Unsafe until proven otherwise.
- Educate all MRI staff to screen patients for ferromagnetic objects. They may need to remove patients’ blankets or sheets to search for objects. Sandbags may be hidden inside pillowcases or under towels.
- Place signs in highly visible areas just outside the MRI environment reminding staff to check each patient for ferromagnetic objects.
- Before a patient comes into the MRI environment, assign the appropriate MRI staff member to check the medical record for recent procedures, such as a cardiac catheterization, that may have required the use of a sandbag.

Carefully screening all products for ferromagnetic properties can help maintain patient and staff safety in the MRI environment. See References for additional information about screening and testing objects for safety in the MR environment.²³

Coming to terms for MRI safety
Become familiar with these MRI safety term definitions from ASTM International, originally known as the American Society for Testing and Materials:

- **MR Safe**: an item that poses no known hazards in all MR environments. MR Safe items include nonconducting, nonmagnetic items such as a plastic petri dish. An item may be determined to be MR Safe by providing a scientifically based rationale rather than test data.
- **MR Conditional**: an item that has been demonstrated to pose no known hazards in a specified MR environment with specified conditions of use. Any parameter that affects the safety of an item should be listed and any condition that’s known to produce an unsafe condition must be described.
- **MR Unsafe**: an item that’s known to pose hazards in all MR environments. MR Unsafe items include magnetic items such as a pair of ferromagnetic scissors.

REFERENCES

