MRI Safety: “Sandbags” May Not Be What You Think…

Pennsylvania Patient Safety Reporting System (PA-PSRS)

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Background

More than 460 Pennsylvania hospitals, ambulatory surgery centers, birthing centers, and selected abortion facilities report to PA-PSRS patient-related adverse events and near misses. PA-PSRS collects such reports, analyzes the data, and provides feedback to reporting facilities about lessons learned, including evidence-based safety strategies. Since its inception in June 2004, more than 500,000 reports have been submitted to PA-PSRS.

Problem

The following PA-PSRS report was submitted:

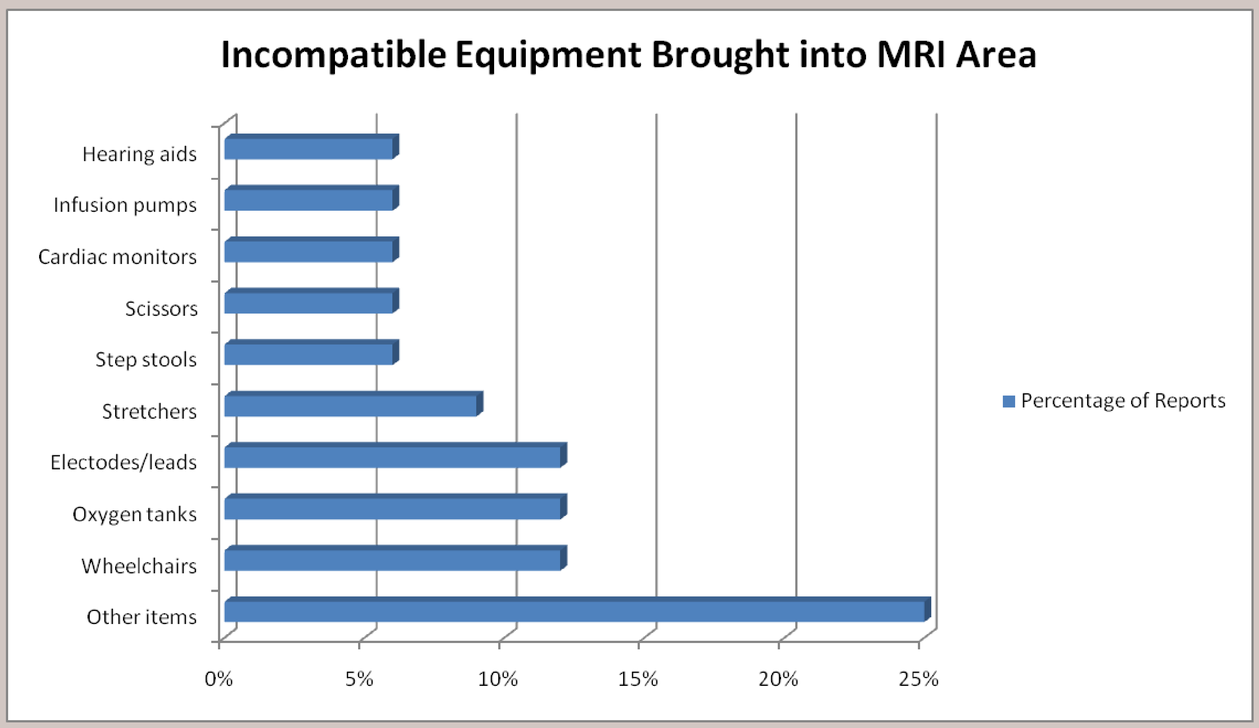
A post cardiac catheterization patient with a sandbag placed on the left groin went to MRI. When the technician moved the patient into the MRI, the magnet pulled the sandbag from the patient’s groin to the outer housing of the MRI unit.

Application to Patient Safety

Healthcare workers may be unaware of the risk of ferromagnetic “sandbags” — manufacturer labels may not indicate that a sandbag contains metal pellets, or whether it is MRI compatible. The sandbag may be concealed with a sheet or blanket. Order forms/catalogs, invoices, or vendor packing slips may fail to indicate that the product contains metal rather than sand. Disseminating such information reduces the potential of patient injury in the MRI setting.

Other MRI Incompatible Items Reported to PA-PSRS

- Ferromagnetic sandbags
- Dentures
- Rings/wristwatches/hairpins
- Knives
- Cell phones
- Metal implants/aneurysm clips
- Permanent makeup/tattoos
- Crutches/walkers
- Laryngoscopes
- Capsule endoscopies
- Medication patches
- Neurostimulators
- Guidewires/probes/stents
- Implants
- Tracheostomy tubes: metal/metal fibers



Patient Safety Strategies

- If feasible, do not allow MRI-incompatible sandbags in your facility.
- Assume that items are MRI incompatible until proven otherwise.
- Use a powerful hand magnet (>1000G) — **NOT the MRI magnet —** to evaluate sandbags and confirm they do not contain metal.
- Have only sandbags in the MRI environment labeled as MRI compatible.
- Do not allow sandbags from other departments into the MRI area unless confirmed that they are non-ferromagnetic.
- Add ferromagnetic sandbags to lists of MRI-incompatible equipment posted in the MRI area.
- Revise MRI screening checklists to include evaluating patients for ferromagnetic sandbags.
- If the facility must use ferromagnetic sandbags, clearly label them as containing iron and that they are not for use in the MRI area.
- Ensure that potential magnetic objects are not covered/concealed/stored on transport equipment or the patient. Look under patient gown, blankets, sheets, and towels.
- Transfer patients to MRI-compatible equipment before they enter the MRI area.
- Prior to MRI, check patients’ medical records to determine whether a recent procedure/complication may have required the use of a sandbag (such as cardiac catheterization).
- Assign trained healthcare personnel the responsibility for physically evaluating the patient and securing the MRI area.
- Heighten awareness of healthcare providers of this potential patient safety problem.

Outcomes

- An article was published in the *PA-PSRS Patient Safety Advisory* (quarterly publication) regarding this hazard that included several patient safety strategies to reduce the potential for serious patient injury from sandbags in the MRI environment.
- In a survey of 186 Pennsylvania Patient Safety Officers conducted in December 2006, 27% indicated that this article helped drive changes in their facilities.

For more information visit:
www.psa.state.pa.us

This poster was adapted from
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