

Open Book

Learning from close calls and adverse events

Safety in MRI scanner

This Open Book illustrates the importance of providers standardising the way they apply well-recognised safety steps.

This report is relevant to staff in:

- hospital imaging departments
- MRI providers.

Incident

A patient was injured when a metallic object inadvertently left in his pocket was drawn into the magnetic field of an MRI scanner.

Chronology

- An inpatient was taken for an MRI scan. He elected to wear his own trousers. The patient stated he had no metal objects on his person. The scan commenced.
- The patient realised he had keys in his pocket and tried to remove them. The radiographer saw his movement, entered the room and took the keys. The scan recommenced.
- The patient then remembered he had a metallic object in another pocket. While trying to remove it, the object was pulled into the scanner tunnel, causing injury to the patient.

Review findings

- The patient was wearing his own trousers during the scan. While outpatients were required to change into a hospital gown, there were no specific instructions for inpatients.
- A magnet used to check for the presence of metal objects was not used on this occasion, as the medical radiation technologist was satisfied that the patient's pockets were empty, and the patient had no metallic implants.
- The information provided to patients about the need to remove metallic objects prior to having

an MRI scan was not prominent, being at the bottom of the consent form.

Actions subsequently taken

- Practice was standardised so all patients now change into gowns before having an MRI scan.
- Multilingual signs are now displayed in changing rooms, highlighting the risk of metallic objects in the MRI scanner.
- Laminated cards (in several languages) describing the risks of metallic objects are now given to patients waiting for a scan.
- The consent form was redesigned to make the risk of metallic objects clearer.
- A protocol was introduced stating that, if there is concern that a patient has a metallic item on their person after entering the scanning room, the procedure must be stopped and the full safety check repeated, including a physical check.

Health Quality & Safety Commission comment

- Patients suffer fatal injuries as a result of metallic items in MRI scanner rooms. This video illustrates the power of the magnet: www.youtube.com/watch?v=6BBx8BwLhgg.
- The provider estimated the cost of damage to an MRI scanner, if metal were to be pulled into it, was approximately \$100,000.