Japan Council for Quality Health Care

Project to Collect Medical Near-Miss/ Adverse Event Information

Medical Safety Information

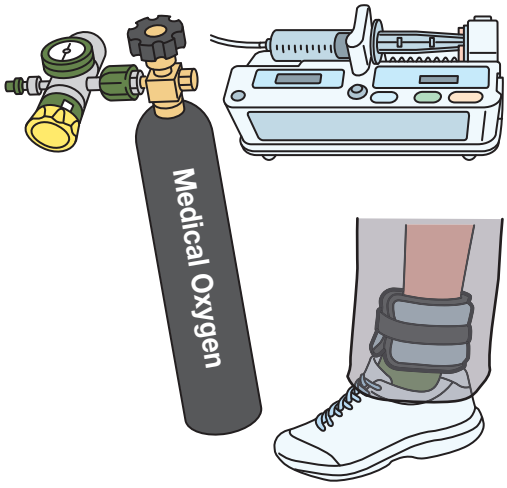
No.94, September 2014

Magnetic Material (e.g. Metal Products) Taken in the MRI Room (1st Follow-up Report)

Information about the magnetic materials (e.g. metal products) taken in the MRI room was provided in Medical Safety Information No.10 (September 2007), which stated that two cases had been reported over a period of two and a half years. As 20 similar cases have been reported over the subsequent seven years, information about this issue is provided here again (information collection period: from April 1, 2007 to July 31, 2014). The information is compiled based on “Recurrence of Events and the Occurrence of Similar Events” (p.157) in the 33rd Quarterly Report.

Cases of magnetic materials (e.g. metal products) taken into the MRI room have been reported again. Most of these involve magnetic materials taken in by medical personnel.

Person Taking Item in	Number of Cases
Medical personnel	16
Patient	4



<Magnetic Materials Taken in by Medical Personnel>

Oxygen tank	5
Infusion pump or syringe pump	2
Ankle weights	2
Stretcher and oxygen tank stand	1
Neonate bed	1
IV stand	1
Monitor	1
Drainage bag	1
Hair clip	1
Cleaning equipment	1

All items became stuck to the gantry.

◆ The four cases in which patients took magnetic materials into the MRI room involved dentures with a magnetic attachment, a button cell that the patient had mistakenly placed in his/her earhole, a cellphone, and a hearing aid.

Project to Collect Medical Near-Miss/ Adverse Event Information

Project to Collect Medical Near-Miss/ Adverse Event Information
Medical Safety Information

No.94, September 2014

Magnetic Material (e.g. Metal Products) Taken in the MRI Room (1st Follow-up Report)

Case 1

The physician routinely wore ankle weights (containing 1.3kg of iron powder) for exercise purposes while going about his/her duties. When the physician accompanied a patient into the MRI room for an MRI examination, s/he did not take the ankle weights off. When the examination ended, the physician approached the gantry of the MRI apparatus to deal with the patient, whereupon the ankle weight on the physician's right leg stuck to the gantry.

Case 2

The patient was being administered Heparin using a syringe pump and the physician ordered continued administration during the MRI examination. The nurse knew that medical equipment must not be taken into the MRI examination room, but thought that it would be fine as long as it was not near the gantry. The nurse used an extension line to lengthen the infusion route, then removed the syringe pump from the infusion stand and transferred the patient to the MRI room in a wheelchair. When the nurse and patient entered the MRI room, the syringe pump immediately stuck to the gantry and broke.

Preventive measures taken at the medical institutions in which the events occurred.

- **Staff will ensure that patients and medical personnel only enter the MRI room after the radiological technologist has checked that they do not have any magnetic materials about their person.**
- **The medical institution devise ways to ensure that magnetic materials are not taken into the MRI room.**
  - **The medical institution provide an anteroom (area) where checks for magnetic materials can take place and patients can be transferred onto another wheelchair/stretcher, etc.**
  - **The medical institution introduce metal detectors (fixed or portable)**
  - **The medical institution use MRI-compatible equipment (oxygen tanks, stretchers, etc.)**

Complementary comment by the Comprehensive Evaluation Panel

- **Devise a mechanism for carrying out a check immediately before entering the MRI room, to ensure that no magnetic materials will be taken inside.**

* As part of the Project to Collect Medical Near-Miss/Adverse Event Information (a Ministry of Health, Labour and Welfare grant project), this medical safety information was prepared based on the cases collected in the Project as well as on opinions of the "Comprehensive Evaluation Panel" to prevent the occurrence and recurrence of medical adverse events. See quarterly reports and annual reports posted on the Japan Council for Quality Health Care website for details of the Project.
http://www.med-safe.jp/

* Accuracy of information was ensured at the time of preparation but cannot be guaranteed in the future.

* This information is intended neither to limit the discretion of healthcare providers nor to impose certain obligations or responsibilities on them.

Department of Adverse Event Prevention
Japan Council for Quality Health Care
1-4-17 Misakicho, Chiyoda-ku, Tokyo 101-0061 JAPAN
Direct Tel: +81-3-5217-0252 Direct Fax: +81-3-5217-0253
http://www.jcqhc.or.jp/