Boy, 6, Killed in Freak MRI Accident

July 31, 2001 -- A 6-year-old boy died after undergoing an MRI exam at a New York-area hospital when the machine's powerful magnetic field jerked a metal oxygen tank across the room, crushing the child's head.

The force of the device's 10-ton magnet is about 30,000 times as powerful as Earth's magnetic field, and 200 times stronger than a common refrigerator magnet.

The canister fractured the skull and injured the brain of the young patient, Michael Colombini, of Croton-On-Hudson, N.Y., during the procedure Friday. He died of the injuries on Sunday, the hospital said.

The routine imaging procedure was performed after Colombini underwent surgery for a benign brain tumor last week. Westchester Medical Center officials said he was under sedation at the time of the deadly accident.

Hospital Takes 'Full Responsibility'

"The medical center assumes full responsibility for the accident. Our sorrow is immeasurable and our prayers and our thoughts are with the child's family," the hospital's president and CEO, Edward Stolzenberg, said in a statement.

The medical center, which is located 15 miles north of New York City in Valhalla, reported the accident as required, and the state health department sent investigators to the scene Monday. The hospital said it was conducting its own inquiry as well.

A medical center spokeswoman would not say who brought the canister into the room.

"He was a delightful 6-year-old boy," remembered Lois Gimple Shaukat, a neighbor of the family. "He, you know, had ... big eyes and a bright smile."

Procedure Considered Safe and Effective

"These tend to be extremely safe machines if used properly," said Dr. Emanuel Kanal, the director of magnetic resonance services in the University of Pittsburgh Medical Center's Department of Radiology, and a widely recognized expert on MRI safety.

He estimates between 8 million and 10 million MRI procedures are performed in the United States each year, the vast majority without complications.
Nevertheless, in the years since the device first went into widespread use, there have been "hundreds or thousands" of incidents where objects became magnetized and attracted to MRI machines, he notes. The items have included cigarette lighters, paper clips, clipboards, and similar objects.

Last year, an MRI scan at a Rochester, N.Y., hospital pulled a gun out of a police officer's hand and discharged a shot.

"But [such incidents] are still the extreme minority," and serious injury from items magnetized by MRIs is even rarer, he said.

Kanal stressed that technicians are typically extremely well-trained and careful to screen for potentially dangerous items.

**Personnel Trained to Look Out for Problem Objects**

"It is unusual for any accident to happen around an MRI because MRI personnel are generally very trained ... well trained to look out for such metal objects," agrees Denise Leslie, a private radiologist.

MRI machines have markings around them indicating the dangerous magnetic field, she explained.

The devices are generally considered extremely safe, but some people, such as those with pacemakers, generally cannot be scanned. The intense magnetic field can interfere with the function of certain electronic devices, and will easily erase credit card strips.

Tooth fillings and orthopedic implants are generally not problematic, Kanal said, but there are rare exceptions, such as temporary magnetic root caps.

The National Institutes of Health has stressed the danger of leaving objects that can be magnetized near the machine.

"The most important known risk is the projectile effect, which involves the forceful attraction of ferromagnetic objects to the magnet," the NIH concluded after a conference studying the devices in 1987.

Magnetic resonance imaging uses electromagnetic waves to produce highly detailed 3-dimensional images of the body. The device was invented in the early 1970s and first used on humans in 1977.