



## Device Detects Surgical Sponges Left Behind in Patients

**July 17, 2006** — - Technology that helps airlines keep track of baggage and sounds an alarm when a shoplifter tries to leave the store may be able to stop surgeons from losing a sponge inside a patient, a study said Monday.

Doctors at Stanford University School of Medicine who tested sponges embedded with radio frequency identification tags said the system accurately alerted surgeons when they deliberately left a sponge inside a temporarily closed surgical site and waved a detector wand over it.

But they said the size of the chips used -- 20 millimeters or about 0.8 of an inch -- was too large and would need to be reduced to be practical on sponges and surgical instruments.

Alex Macario, a physician and professor of anesthesia who led the study, said the future probably will see a combination of tags and other techniques such as counting instruments and sponges before and after an operation.

"We need a system that is really fail-safe; where, regardless, of how people use this technology, the patient doesn't leave the operating room with a retained foreign body," he said.

The Stanford study, published in this week's Archives of Surgery, involved eight patients. It was funded by the National Institutes of Health and by a grant from the Small Business Innovation Research Program, using sponges developed by ClearCount Medical Solutions Inc. in Pittsburgh.

Macario has no financial interests in that company but two of the study's co-authors own several patents related to tagged sponges and work for the Pittsburgh company.

The tags use a circuit that emits an identifying a signal when prompted by a radio signal. Such tags are widespread commercially for uses ranging from luggage tracking and preventing currency from being counterfeited to shoplift loss protection and automated highway toll collection.

One earlier study found that medical personnel left foreign objects, most often sponges, inside a patient's body in one out of every 10,000 surgeries causing complications and even death.

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