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### Radio Tags May Help Avoid Surgical Errors

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18 July, (foodconsumer.org) - Instances of surgical equipment or even sponges left behind in the patient's body may sound humorous, but is in fact a surgeon's biggest worry. A small study suggests that radiofrequency ID (RFID) chips implanted in surgical equipment as well as sponges may help prevent equipment from being left in a patient during surgery.

It is estimated that doctors accidentally leave something behind in about 1 in 15,000 surgical procedures. More often than not, the white gauze sponges used to mop up blood are the ones left behind. Once the surgery is complete, it can be very difficult to detect these sponges.

Many of them are not discovered until years later. Infections around the sponge cause them to be detected earlier. This required an additional operation, causing unnecessary worry to both doctors as well as patients.

Alex Macario of Stanford University School of Medicine, California says that more than 100 sponges are used during a surgical procedure, so some error is inevitable. Dr Macario, who is an anesthesiologist, led the current study, which examined the feasibility of placing radio tags in surgical equipment.

"A majority of retained sponges occur with normal counts, perhaps falling outside human safeguards designed to prevent these types of errors," Macario told Reuters Health. "In fact, a...review of malpractice claims related to retained foreign bodies found that sponge counts had been falsely correct in 76 percent of non-gynecologic surgeries."

In the study, the researchers tagged 10-cm-wide medical sponges with coin-sized radiofrequency identification tags; similar to the ones employed to detect security breaches. A radiowave-emitting wand can trigger and detect a radio signal from these tags, each of which carries a unique ID, according to the report published in the Archives of Surgery.

The study involved eight patients and a surgeon secretly placed the tagged sponges in an open incision. A second surgeon then waved a 25-cm<sup>2</sup> detector over the patient. "Our study found the device works 100 percent of the time," Macario said. But initially he was concerned whether the body would block the radio signal.

Macario said some modifications were needed if the method was to work perfectly. "The real challenge is how you incorporate a new device into the workflow of the operating room," Macario said. "We need a system that is really fail-safe -- where, regardless, of how people use a counting system technology, the patient doesn't leave the operating room with a retained foreign body."

The researchers estimate that such a procedure of tagging sponges would cost \$144 per patient. But other experts like

Katherine Albrecht, co-author of *Spychips: How Major Corporations and Government Plan to Track Your Every Move With RFID*, said that the costs would simply be passed on to patients or HMO.

"I don't need to know it's sponge 248347," Albrecht said. "I just need to know there's a sponge in there."

The RFID system is being developed for use in surgery by ClearCount Medical Solutions, a company based in Pittsburgh, Pennsylvania.

Atul Gawande of Brigham and Women's Hospital in Boston, Massachusetts said that around 3,000 errors occur each year through left behind objects during the surgery. "If we want to reduce the errors we have to think of technological solutions," he said.

Gawande is trying to think of bar-coding sponges, like goods in a supermarket, so that each of them is accounted for after the surgery. Such technologies could be cost-effective, Gawande stressed, adding that each year US hospitals spend \$300 million settling lawsuits resulting from surgical errors.

He reckons that spending the money to prevent the errors is a more viable option.

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