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# Technology: A Quick Scan for a Sponge Left Behind in Surgery

By NICHOLAS BAKALAR  
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It is a classic story of medical error: a surgeon leaves a sponge inside a patient after an operation. Now researchers have tested an electronic device that can detect a cotton sponge with the wave of a wand, using the same technology that helps prevent shoplifting.

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Stuart Goldenberg

A tiny identification chip attached to the sponge acts as a transponder, listening for a radio signal sent by a transceiver in the wand.

In a test with eight patients undergoing abdominal or pelvic surgery, surgeons placed 28 tagged sponges in some of the patients, with one surgeon unaware of which patients had the sponges.

The 1½-pound wand was 100 percent effective in finding the tagged sponges, with no false positives or false negatives. The scan took an average of less than three seconds.

Two of the study's authors own patents related to the tagged sponges, and one is a consultant for a firm that manufactures the wands.

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"When we started, we were concerned about the technological part of the problem," said Dr. Alex Macario, a professor of anesthesiology at Stanford and the study's lead author.

"But our study found the device works 100 percent of the time," he said. "The real challenge is how you incorporate a new device into the work flow of the operating room."

Dr. Macario is concerned about the possibility of human error in using the equipment. "We need a system that is really fail-safe," he said, "where regardless of how people use this technology, the patient doesn't leave the operating room with a retained sponge."

The study was published yesterday in The Archives of Surgery.

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