

## Study: Radio Frequency Detection Reduces Retained Sponge Risk

### University of North Carolina researchers say RF tags can improve "safety and efficiency" in the OR.

Radio frequency sponge-detection technology may be an effective compliment to manual counts and X-rays in preventing retained objects in surgery, researchers from the University of North Carolina reported this week at the annual American College of Surgeons meeting.

A research team led by UNC gastrointestinal surgeon Christopher C. Rupp, MD, studied more than 1,600 procedures that used surgical sponges embedded with radio frequency (RF) tags similar to those used in retail store tracking systems. Nurses passed an RF detection wand over patients to see if any sponges were missed. The study was funded by RF Surgical Systems, which makes the RF detection system, and the UNC School of Medicine's Department of Surgery.

An interim analysis of the results shows that 1.4% of manual counts were incorrect, but retained foreign objects occurred regardless of whether the counts were correct. The researchers identified the following risk factors for incorrect counts: large-volume blood loss, emergency surgery, prolonged surgery and surgical team changes.

The RF detection system found 21 missed sponges after correct counts (10 of which were in the surgical wound) and 7 sponges following incorrect counts (including 2 left inside patients). X-rays were used in 13 cases, but in no instance did the X-ray detect a sponge that hadn't been detected by the RF system. The RF system produced no false negatives and no false positives.

The RF detection system improved nurses' confidence in the final sponge count 94% of the time, was easy to use in 97.5% of cases and decreased the stress of closing in 89% of cases, according to the results of a questionnaire given to nurses in the study.

"While the incidence of retained sponges is low," conclude Dr. Rupp and colleagues, "RF detection can expedite identification and avoid the use of radiation to locate missing sponges, thus improving safety and efficiency in the operating room."

***Irene Tsikitas***