

Preventing Unintentionally Retained Objects

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“John Jones” had a tough time last year; he underwent major surgery that lasted several hours. The surgery was complicated, and the operating room was full of people, including a non-medical visitor. At some point during the surgery there was a shift change and some staff left the OR as others entered. All during the surgery, pagers and cell phones beeped and whirred in the background. Near the end of surgery a few staff wondered if the count of items before and after surgery was correct, but no discussion followed and the possibility was quickly dismissed.

“John” went home and was recovering nicely until a few weeks later he noticed a small lump near the site of his surgery. Somehow, a “sponge” (a piece of absorbent gauze) had been left inside the patient and required a second surgery to remove it.

Fortunately, “John Jones” is not a real patient. His story is a composite of the experiences of a number of Oregon patients, and not all the activities in the operating room occurred during any single surgery. However, *each* of these activities did occur during some surgeries that resulted in an unintentionally retained object. From May 2006 through November 2007, the Patient Safety Commission received 21 reports of adverse events involving unintentionally retained objects.

In response to the large proportion of reports, and because retained objects represent a class of events defined by the National Quality Forum as “Never” events (they should never happen), the Commission established a working group to review the problem and to offer recommendations. That work has now been completed and the recommendations for preventing the occurrence of unintentionally retained objects have been approved by the Commission’s board of directors.

Background:

Epidemiologic studies have shown a relationship between unintentionally retained objects and emergency surgery, unplanned or multiple procedures,¹⁴ and high body-mass index.^{5,10,16} Other related risk factors noted in quality improvement reports and closed claim studies include poor team communication,¹⁸ multiple personnel changes during surgery¹¹, and faulty care processes¹² such as incomplete wound explorations and inadequate counts. While most unintentionally retained objects are discovered quickly, there are cases in which the retained objects are discovered decades later, some masquerading as a tumor, and some occurring in areas of the body distant from the original surgery.

For the Oregon cases, no single factor stands out in the 21 reports submitted to the Commission, though many of the risk factors reported in the literature and illustrated in the case of “John Jones” were present in the adverse events. One common factor was the inconsistent application of known safety measures: time outs completed without the surgeon present; wounds closed without a reconciled count; non-essential personnel in the room creating distractions.

Working Group Process: The working group established by the Commission represented a range of expertise in quality surgical care. The group included a surgeon, a surgical nurse, a surgery manager, and a quality improvement manager. The group's charge was to examine what is known regarding prevention of retained objects, and to make recommendations that would decrease the possibility of a retained object after surgery for Oregon patients.

Members of the working group included Brian M. Baker RN, MSN, Director of Perioperative Services, Adventist Medical Center; Karen Deveney, MD, Professor of Surgery, OHSU School of Medicine; Commissioner Sandy Douma, RN, Perioperative Nurse, Providence Seaside Medical Center; and Mary Shepard, RN, BS, Risk Management/Quality Management Coordinator, Providence Portland Medical Center. Leslie Ray, PhD, RN provided staff support for the group.

The working group developed their recommendations in three steps. First, the group considered what, from their perspectives and experience, were the risks of having a retained object after surgery. They also considered comments from a focus group of surgical staff on what conditions in the operating room (OR) might help assure that *no* sponge or instrument would be left unintentionally. Second, the group compared their list to current literature and policy in other institutions. From these deliberations, an initial set of recommendations was developed and reported to the Commission. The third step involved presenting the initial recommendations across the state for comment and critique. Comments were elicited from operating room nurses across the state, including the Metro Managers Group (a group of OR Directors) and the two Commission members who are surgeons. Copies were sent to nursing, quality, and risk contacts in all 57 Oregon acute care hospitals, to Ruth Medak, MD, Associate Medical Director at Aumentra, and to OAHHS. In addition, staff met with the Santiam Chapter of AORN, and followed up with individual OR directors and others.

Responses

After the draft recommendations were publicly shared, the discussion shifted to how best to implement them. The most frequent comments concerned the *financial* and *cultural* impacts of the recommendations. In particular, developing work practices to assure undisturbed counts and the move to Radio Frequency Identification (RFID) raised budgetary issues. The assumption that seemed to underlie these concerns was that there would be no additional resources with which to implement the recommendations. While costs of a retained object vary depending on a variety of hospital-specific factors and can include costs of lawsuits, the resultant savings of an investment in prevention must also be considered.

Concerns about cultural impact of the recommendations focused on the difficulties of improving communication and teamwork. For some, pre-surgical briefings, consensus on back table setup, or accurate surgeon preference information did not seem achievable. Putting into practice aviation's concept of a "sterile cockpit" (only essential communication

allowed during critical times) seemed even more remote. Despite the difficulties presented by changing ingrained practices, the recommended practices were seen as important. For some the concept of fostering good communication and teamwork represents a return to the concept of “surgical conscience,” in which speaking up if one has a concern is a professional obligation. Of all of the recommendations, the shift required to instill a culture of teamwork is a significant challenge to staff. Comments given to the Commission indicate that it will require a strong, concerted effort to bring a change in current surgical culture.

In considering the concerns raised in comments, the working group has avoided recommendations that propose specific strategies. Instead, hospitals are encouraged to develop approaches and strategies based on their individual situations to address the intent of the recommendation. For example, policies responding to the recommendation for decreasing distractions and interruptions in the operating room may be different in different hospitals, yet both may address the issue well.

Conclusions

The recommendations presented here rely heavily on current literature and are divided by the working group into three classifications, based on the strength of the literature and comments from those working in hospitals: practices *essential* to the prevention of retained objects, *preferred* practices, and practices that deserve further discussion and consideration. While the recommendations are focused upon decreasing the possibility of an unintentionally retained object, many are appropriate to promoting safe surgery in general.

A key aspect of the recommendations is the central role of the Association of periOperative Registered Nurses (AORN) Recommended Practices for Surgical Counts. The working group believes these practices, if followed, significantly decrease the risk of an unintentionally retained object. However, the working group believes that while the AORN recommended practices for surgical counts are necessary, they alone are not sufficient. The operating room environment and process have a significant impact; recommendations which require development of better communication and teamwork in the provision of care will significantly reduce the risk of retained objects.

Recommendations

Essential

1. Adopt AORN recommended practices for counting surgical items and actions when there is an incorrect count.^{4,9}
2. Perform methodical wound exploration prior to closing the surgical wound.^{2,9,11,13}
3. Identify non-radio opaque items (e.g. telfa, rubber dams, plasma tubing) on the sterile field and identify those to count.
4. Develop work practices that allow for distraction/interruption-free opening and closing counts.^{3,9,17,19}
5. Reconcile counts before an additional procedure is begun or permanent change in personnel.^{3,12.}
6. Perform a Pause/TimeOut before additional procedure or new surgical team.^{6,14}
7. Strengthen communication among the surgical team⁷ by a pre-procedure briefing from the surgeon.^{1,15} This briefing should:
 - occur during the Pause before start of case or second procedure or different surgical team
 - include presence of risks for retained object: emergency surgery; patient with high body-mass index; multiple procedures; and note if any possibility for unplanned changes, or portions of the surgery that are particularly critical.¹⁴
8. Establish policies to limit distractions and interruptions related to use of cell phones, pagers, non case-related discussion, music, and non-essential personnel in the operating room.^{8,12,17,19}

Preferred

1. Agree upon a consistent set-up of the back table so that relief staff have a clear sense of the sponges and instrument locations.
2. Simplify instrument trays: type and number for each type of surgery with peel packs for special requests to decrease the number of unused items that need to be counted.
3. Develop reliable process to assure accurate surgeon-specific preference cards so that simplified instrument trays are sufficient.
4. Develop policy to restrict staff changes during critical times during a surgery.
5. Use clear bags in kick buckets to facilitate identification of sponges.
6. Trouble-shoot any equipment prior to start of surgery and have back ups available to avoid surgical delays and time pressures that impact counts.

Work Toward:

1. Implementing technological advances that allow bar coding and radiofrequency identification of sponges and instruments.
2. Improving teamwork by development of surgical teams — physicians, nurses, and technicians that routinely work together.

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