Preoperative practices overhauled after surgical checklist failure

Use of the World Health Organization’s surgical safety checklist has reduced surgical complications and mortality, but a narrow escape after a checklist failure at an Italian hospital suggests that more vigilant efforts are needed to avoid errors.

In August 2012, an 81-year-old patient with vascular dementia was brought to the OR at G. Fracastoro Hospital, San Bonifacio (Verona), Italy, for left carotid artery surgery, as indicated on the sign-in sheet when his surgery was scheduled.

In the preoperative area, the anesthetist obtained the patient’s consent, confirmed the surgical site, and asked a colleague to perform an ultrasound-guided cervical plexus block of the left carotid artery because he was not skilled in this technique. The surgeon was absent from the preoperative area while the anesthesia was being given.

During the time-out prior to surgery, however, the surgeon realized that surgery should be performed on the right carotid artery, not the left. The patient was given general anesthesia, and the procedure was performed on the right carotid artery. Afterward, the patient was admitted to the ICU for postoperative monitoring for 24 hours.

How errors creep in
The incident is an example of the “Swiss cheese” model of failure, in which slices of cheese represent barriers against organizational failure and the holes in the cheese slices indicate weaknesses in individual parts of the system. The system as a whole fails when the holes in each slice momentarily align, allowing an error to creep into the defenses designed to protect against failure.

In the carotid case, the holes were as follows:

• The side was listed incorrectly on the initial scheduling sheet.
• The nurse on the patient unit indicated the wrong side (perpetuating the error from the scheduled list instead of double-checking with the surgeon, as should be done in unclear or ambiguous cases).
• The front page of the medical record stated “right occlusion, left stenosis,” which was unclear.
• Two anesthetists were involved in the procedure.
• The patient’s dementia prevented him from recognizing the error.
• The surgeon was not present when the plexus anesthesia was induced.
• The right side was indicated in the electronic memo of the operation created by the surgeon during the patient’s first visit but was not printed in the medical record.
• There was a lack of communication among all surgical team members and the patient.

Role of checklists
Checklists are used in the surgical units and ORs of many hospitals in Italy, although the country in general has been slower to adopt their use than have US hospitals. In
2009, the Italian National Health Service published OR Safety Recommendations that included a surgical checklist, but that checklist was used largely on an experimental basis. In 2012, checklists were put into place in the surgical departments of all Italian hospitals. Nonetheless, the carotid case demonstrates that even with the use of checklists, there’s still a danger of wrong-site surgery.

The carotid case was the first time that the checklist had failed in that particular OR, but it clearly demonstrates poor communication and lack of nontechnical skills among the OR team. These skills are well developed in civil and military aviation environments but are less common in health care organizations. All surgeons, anesthetists, and nurses should have strong situational awareness, decision making, communication, leadership, and teamwork skills.

In conjunction with nontechnical skills, checklists are designed to promote interdisciplinary communication and to provide a framework for the many perioperative steps involved in patient care. To augment these skills at G. Fracastoro Hospital, interdisciplinary teams composed of surgeons, anesthetists, and nurses participated in a project at the hospital led by civil aviation pilots who had had crew resource management training.

As part of this project, an OR checklist prototype tailored to different specialties (general, pediatric, obstetric and gynecological, vascular, urologic, and orthopedic surgery) was developed to improve communication and to better manage potentially critical situations, decision making, and situational awareness.

Each specialty checklist was used in different simulated scenarios, followed by debriefings with the entire team. Communication has improved with the use of these checklists, and the OR manager continues to monitor their use to avoid communication breakdowns.

As a result of the carotid incident, a clinical audit was conducted with input from all members of the surgical team. A new procedure for filling out the surgical checklist was produced and approved.

As part of this, the patient’s mental status is assessed on the basis of medical history and, if necessary, consultation with a neurologist. The sign-in process was rewritten and now involves the entire surgical team whenever any aspect of a case is unclear, and the electronic memo is now included in the official documentation for every surgical patient.

— P Sette, MD, is OR manager at G. Fracastoro Hospital in San Bonifacio (Verona), Italy.

— R M Dorizzi, MD, is with Corelab, Laboratorio Unico di AvR, in Pievesestina di Cesena, Italy.

— A M Azzini, MD, is with the Department of Pathology, Infectious Diseases Unit, at Azienda Universitaria Ospedaliera Integrata, Verona, Italy.

References


