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Retained Foreign Objects It's Not the Robot's Fault

Robotically assisted surgery has surged in popularity over the last decade and demonstrates significant patient benefits: reduced blood loss, smaller incision, and reduced duration of hospital stay.¹⁻³ However, basic safety steps must still be taken. Although retained foreign objects might be considered less likely during a robotically assisted procedure, the literature demonstrates how discrepancies during robotically assisted surgical procedures can be affiliated with the unintentional retention of a foreign object.⁴ ECRI Institute PSO has seen cases in which the use of a robot was related to unanticipated variation in perioperative procedures, which may have led to the retention of a foreign object.

Simply put, robots change the dynamic of an otherwise standardized environment in the operating room (OR). Facility and surgical leadership should examine the OR in which the robot is to be used to determine if there is an adequate amount of space for the robot, staff, patient, and all equipment, instruments, and supplies. Unlike laparoscopic or other device-assisted surgeries, robots' large physical presence can affect staff members' ability to move around the OR, so this should be examined and addressed. Also, during robotic surgery, it may be necessary to convert to a "traditional" surgical procedure (e.g., open surgery). These procedures require different instruments, and it is important to have the space to make this equipment readily available.¹

Perioperative instrument-count safety procedures—namely, instrument counts before, during, and after the procedure and open communication among the surgical team

Key Contributing Factors

- Management/organization: inconsistent enforcement of perioperative safety practices⁵
- Team coordination: unclear or nonexistent communication⁴
- Operating environment: logistical considerations when using a robot¹
- Workflow: disempowerment of surgical team members⁶

Key Recommendations

1. Before beginning a robotically assisted surgery program, include a simulated procedure with the robot in the environment where it will be used as part of staff training to attain a better understanding of how its presence will affect the layout and workflow of the OR. Third-party observation and postprocedure team debriefing should also be considered. Alternatively, perform a detailed assessment of how the robot will change the workflow.
2. Consider that supportive techniques, such as imaging or radiofrequency tagging, can help maintain an accurate perioperative inventory. In most cases of retained foreign objects in the literature, counts seemed correct even though an object was found in the patient.⁶⁻⁸
3. Review the organization's culture, and empower all staff members to stop a procedure if a discrepancy in instrument counts or a missing component of a surgical device is noted.⁶ Ensure that communication

throughout the entire process—must be implemented during robotically assisted surgeries. If uncounted objects are used, they should still be noted and included in review upon the final time-out. Typically, the unintentional retention of foreign objects is more likely to occur under the following circumstances: when the surgery is emergent, when there are multiple procedures, when an unexpected change must occur during the procedure, or when the patient has a high body mass index.⁵ Perioperative communication breakdown and inconsistent adherence to evidence-based practices compound the issue. Regardless of the type of procedure being performed, surgical staff leadership should review and consistently enforce perioperative strategies to prevent retention of foreign objects.

among staff during procedures is open and clear.

Take Home Point

When preparing for or performing robotically assisted surgery, the organization needs to assess how a robot's physical presence will alter staff movement, workflow, and communication during a surgical procedure. An environmental assessment can help determine optimal human interactions with robots.

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Director's Note

The surgery team's dynamic and individual surgical techniques may change with the use of robots and introduction of other technologies, but steps to assess the environment and maintain perioperative safety practices are key to ensuring patient safety. A culture of safety—a concept ECRI Institute has always supported—is critical in the side-by-side evolution of practice and safety. If your institution has experienced a case in which a foreign object was unintentionally retained in a patient, we can provide confidential assistance to determine why this occurred. Patient Safety E-Alerts provide participating organizations with additional periodic educational awareness to help prevent healthcare

events from happening in their facilities. To discuss your OR safety concerns, please contact us at (610) 825-6000 or patientsafety@ecri.org, and we will forward your questions to our experts.

Karen P. Zimmer, M.D., M.P.H., FAAP, Clinical Director

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