Evaluating for Retained Foreign Bodies During Trauma Laparotomy and Thoracotomy

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Purpose

To establish protocols for evaluating and preventing retained foreign objects (RFOs) when surgical counts are incomplete, especially during trauma procedures with immediate or delayed closure.

Documentation of Incomplete Count

In cases where emergent trauma surgery prevents a complete instrument or sponge count

- The incomplete count must be documented, including the reason for its omission (e.g., patient instability).

- All known items used during the procedure should be recorded as thoroughly as possible. Studies show that incorrect counts are responsible for RFOs in approximately 62-88% of cases, with manual counts often skipped due to the urgency of trauma surgeries (Wood et al., 2023; Pennsylvania Patient Safety Advisory, 2015).

Intraoperative Measures

When an incomplete count occurs

Manual Search

- Before closing the cavity (even temporarily), the surgical team should conduct a manual search of the abdomen or chest. This is crucial, as 20-50% of RFO cases occur even when there is awareness of count discrepancies, but no immediate action is taken (Wood et al., 2023).

Intraoperative Imaging

- Intraoperative X-rays should be performed to detect any retained foreign objects. While X-rays are typically the most common method, they can have a false negative rate of up to 30%, particularly for small items like needles smaller than 17 mm (AORN, 2016; Wood et al., 2023).

- Studies indicate that using advanced imaging such as mobile image intensifiers or CT can enhance detection accuracy. This will need to be done on final closure. If the abdomen or chest is left open for scheduled return for second look. Otherwise, an imaging modality plus RFID scanner must be used to confirm there are no retained objects in abdomen or chest.

Temporary Closure Protocol
If the abdominal or thoracic cavity is left open

- Document the use of temporary closure techniques (e.g., wound vac or packing). Be mindful that retained sponges and soft goods account for up to 45.3% of all RFO events, with the abdomen and pelvis being the most common sites (Pennsylvania Patient Safety Authority, 2015).

- ***A "Do Not Close"*** warning should be placed in the chart to prevent accidental closure before thorough evaluation.

Pre-Closure Evaluation
When the patient returns for definitive closure

- Repeat Imaging: Before the final closure, repeat radiological imaging (X-ray or CT) should be performed to evaluate for RFOs. According to The Joint Commission, routine use of intraoperative radiography when counts are incomplete has been shown to reduce the risk of RFOs by up to 50% (The Joint Commission, 2020).

- Final Instrument Count: Perform a final instrument and disposable count before the definitive closure. Barcoded or radiofrequency identification (RFID) tracking has been shown to further reduce RFO incidents by up to 80%, particularly when combined with manual counting systems (Wood et al., 2023; Pennsylvania Patient Safety Advisory, 2015).

Documentation and Reporting
In cases where a foreign object is retained

- Thoroughly document the event and any corrective actions taken.

- If the item is intentionally left in place due to excessive risk for removal, this decision must be clearly communicated to the patient and their family (Pennsylvania Patient Safety Authority, 2015).

Postoperative Protocol

- Follow-Up Imaging: High-risk patients, especially those undergoing complex or repeat procedures, should undergo follow-up imaging within 24-48 hours to ensure no RFOs were missed.

- Root Cause Analysis: If an RFO is detected postoperatively, a full root cause analysis should be performed to identify process failures and prevent recurrence (The Joint Commission, 2020).

Version Control Record			
Version	**Date**	**Author/Reviewer**	**Description of Changes**
1	1/21/26	Paul Wisniewski, D.O.	Initial review and update to reflect latest evidence/practice

Works Cited

- Pennsylvania Patient Safety Authority. (2015). Retained Surgical Items: Events and Guidelines Revisited. Pennsylvania Patient Safety Advisory. Retrieved from patientsafety.pa.gov
- Wood, A., & AORN. (2023). Risk Factors and Preventive Strategies for Retained Surgical Items. Patient Safety in Surgery, Biomed Central. Retrieved from pssjournal.biomedcentral.com.
- The Joint Commission. (2020). Sentinel Event Alert: Preventing Retained Foreign Objects.

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