Unintended retention of surgical items: between protocols and systemic vulnerabilities

Retenção inadvertida de itens cirúrgicos: entre protocolos e vulnerabilidades sistêmicas

Retención inadvertida de elementos quirúrgicos: entre protocolos y vulnerabilidades sistémicas

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Retained surgical items (RSI) are a serious sentinel event due to their potential impact on patient safety, healthcare costs, and institutional reputation[1]. In 2024, the Joint Commission International (JCI)[2] in the United States reported a 12% increase in sentinel events, and among the ten most frequently reported events, RSI ranked fourth[2].

Although considered preventable, the incidence of RSI remains significant. A study evaluating Brazilian surgeons' experience with RSI revealed that 43% of the professionals interviewed had inadvertently left an item inside a patient, while 73% reported having removed items left by other professionals[3]. These findings reinforce that this type of event is not limited to exceptional situations but is part of the routine of healthcare services[1-3].

Seventeen years after the publication of the multicenter study that demonstrated a reduction in surgical mortality through the use of the surgical safety checklist, barriers to adherence to this strategy persist[4]. RSI results from a combination of human, environmental, and organizational factors, such as communication failures, hierarchical barriers in the surgical setting[1,5,6], errors and distractions during the counting of materials, and staff fatigue[3,6]. Limiting the discussion of RSI to the individual behavior of healthcare professionals represents a simplified and insufficient interpretation of a deeply systemic phenomenon. The persistence of these events, even in institutions with high adherence to protocol-based practices and care routines, reveals a significant contradiction in contemporary safety: the gap between the work prescribed by protocols and the work actually performed in the day-to-day dynamics of an operating room.

In many healthcare institutions, checklists are formally implemented, surgical item counts are documented, and protocols are institutionalized. Yet adverse and sentinel events continue to occur. This scenario suggests that the existence of procedural barriers is not sufficient to ensure safe processes when there is cognitive overload, productivity pressure, frequent interruptions, work fragmentation, and hierarchical cultures capable of silencing professionals when faced with risky situations, such as discrepancies in counts, incomplete completion of the surgical safety checklist, or failure to perform it in a timely manner. From this perspective, RSI can be understood as a manifestation of vulnerabilities present in complex systems, characterized by the dynamic interaction among people, processes, the environment, and work organization[7].

In this context, it becomes particularly relevant to discuss the so-called "normalization of deviance" in surgical settings — a condition in which unsafe processes come to be progressively tolerated and incorporated into routine care, especially in scenarios of high operational pressure and a lack of psychological safety to address sensitive issues and concerns among surgical team members. Interruptions during counts, staff changes at critical moments, and informal deviations from protocols may cease to be perceived as threats and instead become part of the routine workflow[5,8].

The adoption of structured communication protocols helps mitigate hierarchy-related failures, reduces communication

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breakdowns in the operating room, and minimizes interruptions during surgical item counts[6]. However, there is a risk that safety strategies will be implemented merely as bureaucratic requirements rather than as effective cognitive tools for preventing harm. The automated and mechanical completion of checklists, without genuine team engagement, can create a false sense of safety and mask significant weaknesses in the care process.

Furthermore, it is necessary to recognize that not every expansion of operational steps necessarily results in increased safety. In some scenarios, redundant processes and an accumulation of tasks can increase the cognitive load of healthcare teams and compete with care activities of greater value to safe care. Surgical safety depends less on the indiscriminate proliferation of barriers and more on the development of relational practices based on trust and on safe, clear, and sustainable processes in everyday multidisciplinary practice.

Given this scenario, various mitigation strategies have been proposed, including strengthening assertive communication, encouraging the systematic reporting of adverse events and *near misses* as a tool for institutional learning, and the continuous improvement of care processes[1,6].

In this context, perioperative nursing occupies a strategic position in promoting surgical safety, contributing in a systemic manner. By coordinating care processes and strengthening interprofessional communication, nurses act as an important safeguard against system vulnerabilities and contribute to the consolidation of safer and more collaborative care cultures—a necessary condition for teamwork and team learning.

Future paths for surgical safety focus on consolidating a systemic, technological, and multidisciplinary approach. Strengthening teamwork, assertive communication, and the development of technologies for monitoring materials and events represent fundamental pillars for reducing RSI.

Finally, RSI should not be understood merely as a professional's failure or an isolated breach of protocols, but as a visible manifestation of vulnerabilities present in work processes and healthcare systems. Sustainably reducing these events requires more than individual vigilance or increased bureaucratic controls: it requires psychologically safe environments, strengthened teams, care processes designed based on the reality of the workplace, and institutions committed to continuous learning. Transforming surgical safety involves recognizing that preventable harm rarely stems from a single error; rather, it arises from the complex interaction between people, processes, culture, and the organization of care.

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