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Enhanced Recovery After Surgery (ERAS) Protocol for Bariatric Surgery

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Executive Summary

Title

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Introduction

Bariatric surgery has been utilized in treating severe obesity and offers several benefits, such as sustainable weight loss, treatment of various metabolic comorbidities, and improved life expectancy (Sundbom et al., 2017). With these benefits and procedural improvements, there has been a marked increase in the demand for bariatric surgery and increased interest in shifting some of these procedures to an ambulatory care setting (Stenberg et al., 2022). However, postoperative complications such as pain, nausea, and inability to tolerate oral intake can cause patients to experience an increased length of stay in the hospital and suboptimal outcomes (King et al., 2018). Enhanced recovery after surgery (ERAS) protocols aim to address these complications. A suburban hospital in east central Missouri does not have a standardized ERAS protocol for bariatric surgical patients. As a result, anesthetic management varies from case to case and per provider preferences, which are not always based on best practices.

Literature Review

The literature comprised components for best practices identified in each stage of the perioperative process. The preoperative phase focused on fasting guidelines, carbohydrate loading, and postoperative nausea and vomiting (PONV) prophylaxis. Research recommended following fasting guidelines of at least six hours for solids (light meal) and two hours for liquids before induction of anesthesia (Stenberg et al., 2022). Insufficient evidence supports the routine

use of preoperative carbohydrate loading (Stenberg et al., 2022). Evidence suggested a multimodal approach for postoperative nausea and vomiting prophylaxis, including total intravenous anesthetic (TIVA), avoidance of volatile anesthetics, avoidance of fluid overload, and minimization of intraoperative and postoperative opioid administration (Stenberg et al., 2022).

Regarding the intraoperative phase, the evidence did not suggest using standardized routine anesthetic techniques but instead supports anesthetic-related considerations and the use of multimodal opioid-sparing analgesia. Anesthetic-related considerations included induction drug dosing based on lean body weight to avoid hypotension and maintenance infusion dosing based on total body weight (Stenberg et al., 2022). Multimodal analgesia includes adjuncts such as lidocaine, dexmedetomidine, ketamine, and magnesium, which show better anti-inflammatory effects than opioid-based analgesia (Mulier & Dillemans, 2018). Nonsteroidal anti-inflammatory drugs (NSAIDs) also help to reduce opioid requirements (Berlier et al., 2022). Various regional techniques such as epidural analgesia, transversus abdominis plane (TAP) block, pre-incision local anesthetic infiltration, intraperitoneal local anesthetic instillation, and erector spinae plane (ESP) block also demonstrated efficacy (Boerboom et al., 2018; Omar & Abualsel, 2019; Chin et al., 2017). Protective lung ventilation strategies, patient-specific airway management considerations, and goal-directed fluid therapy were also recommended. No evidence supports routine abdominal drain placement or nasogastric decompression following bariatric surgery (Stenberg et al., 2022).

In the postoperative phase, bariatric ERAS protocols emphasize early oral intake, early mobilization, and continued opioid-sparing analgesia. Evidence also recommends that all bariatric surgery patients be prophylactically supplemented with oxygen in recovery and placed

in a head-up or semi-sitting position (Bolden et al., 2020). An individualized treatment plan involving mechanical and pharmacological thromboprophylaxis is recommended (Stenberg et al., 2022). Proton pump inhibitor (PPI) prophylaxis should be continued for at least 30 days after Roux-en-Y gastric bypass surgery to prevent marginal ulcer development (Stenberg et al., 2022). Lastly, ursodeoxycholic acid (UDCA) should be considered for six months following bariatric surgery to prevent gallstone formation postoperatively (Stenberg et al., 2022).

Methodology

This project aimed to introduce components of an evidence-based ERAS protocol for bariatric surgical patients to healthcare providers. The focus areas of this project included components for best practices in each of the four stages of the perioperative process. Components included patient education and optimization, multimodal opioid-sparing analgesia, short-acting anesthetics, multimodal nausea and vomiting prophylaxis, goal-directed fluid therapy, early oral intake, and early mobilization. The design of this project was a non-experimental quality improvement project. The primary stakeholders for this project included bariatric surgeons, certified registered nurse anesthetists (CRNAs), and registered nurses (RNs) at the host facility. Bariatric surgical patients and their families were also stakeholders, as their outcomes can be improved by implementing such a protocol.

Evaluation

The implementation of this project involved an educational voiceover PowerPoint presentation reviewing evidence surrounding recommended components of an ERAS protocol for bariatric surgery. The presentation was distributed via email and allowed participants approximately six weeks to complete the evaluation portion of this project. Evaluation of this

project consisted of a post-presentation survey available to participants following their presentation review.

Six anesthesia providers completed the post-presentation survey. Although the presentation was distributed to bariatric registered nurses and surgeons, there were no responses from these other staff members. All participants believed that ERAS protocols could positively impact patient outcomes. The presentation was unanimously deemed informative and helpful by all participants. Furthermore, every participant expressed the opinion that an ERAS protocol based on the evidence presented in the project could be successfully implemented at their respective facilities. Using a four-point Likert scale to respond to how likely other providers at their facility would be willing to adopt such a protocol, 33% of participants answered “very likely,” and 67% answered “somewhat likely.”

Limitations for this project were sampling size and sampling bias. Due to time constraints, staff availability, and the limitation of email correspondence, a convenience sample was utilized. A total of six participants completed the post-presentation survey. These results may not be generalizable to a larger population. An improvement to the project in the future would be to implement it during an in-person anesthesia meeting or to implement the project at more than one facility to sample from a larger group.

Impact on Practice

As the number of bariatric patients undergoing weight loss surgery continues to increase yearly, the need to develop a sustainable healthcare protocol that can decrease complications, decrease costs, decrease the length of hospital stay, and improve patient satisfaction is indispensable. Sustainability is primarily based on the staff’s willingness to learn and implement new evidence-based practices. The successful implementation and sustainability of an ERAS

protocol for bariatric surgery will help hospitals meet the growing demand for increased surgical volume while decreasing complications and costs, improving patient satisfaction, and decreasing hospital length of stays.

Conclusion

Despite low levels of project participation, the overall recognition of the positive effect of the ERAS protocol was indisputable. This project introduced key components of ERAS protocol to be utilized for bariatric surgery with the long-term potential of improving patient outcomes and satisfaction. The results of this project indicate an optimistic likelihood of successful adoption and sustainability of ERAS protocols for bariatric surgery. Adopting the proposed ERAS protocol for bariatric surgery would likely improve patient outcomes and decrease hospital length of stay for the host facility.

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