Procedure-specific Pain Management

The Road to Improve Postsurgical Pain Management?

THE benefits of optimal pain management are well recognized. Nevertheless, treatment of postoperative pain continues to be a major challenge and inadequate postoperative pain relief remains disturbingly high.1,2 This is also demonstrated in a large, comprehensive, prospective cohort study from Germany by Gerbershagen et al.3 published in this issue of Anesthesiology. One of the reasons for suboptimal pain management may be related to inadequate or improper application of available analgesic therapies, probably due to the significant amount of new and conflicting information that is increasingly available, and continuing traditional use of opioids instead of multimodal opioid-sparing analgesia.2,3

Several studies have reported an increased incidence of opioid-related adverse events,4,5 since the Joint Commission declared pain as the “fifth vital sign” and emphasized that a specific pain score be achieved for all patients (e.g., pain score of less than 4/10),3 probably because lower pain scores are being achieved with opioids alone.6 Fortunately, in a recent sentinel event alert, the Joint Commission has now recognized that not all pain could be eliminated and a goal-related therapy may be appropriate.7

“One of the important steps toward developing optimal pain management treatments is to understand the degree of pain generated by various surgical procedures, particularly in relationship with the analgesic technique used. Gerbershagen et al.3 assessed the intensity of pain after a wide variety of surgical procedures. Surprisingly, the authors found that several “minor” surgical procedures, which are commonly performed in an outpatient or short-stay setting (e.g., laparoscopic appendectomy, laparoscopic cholecystectomy, tonsillectomy, and hemorrhoidectomy), were associated with high pain intensities, whereas patients undergoing some of the “major” surgical procedures had lower pain scores.

The authors provide us with a ranking of surgical procedures based on the severity of pain observed in the first 24h, postoperatively. However, it is imperative that this ranking is taken “literally” to suggest the degree of pain intensity generated by a certain surgical procedure. In fact, the pain intensities observed are a function of the analgesic technique used in various surgical procedures. Thus, the most likely reason for the observations of this study is that patients undergoing the surgical procedures that have the reputation of being less painful received inadequate pain relief. In contrast, patients undergoing highly painful surgical procedures received more aggressive analgesic therapy. As stated by the authors “After many laparoscopic surgeries patients often reported severe pain, but did not receive any opioids at all or only in low doses…” In addition, the data from this study support the belief that patient responses are variable and there is not a direct correlation between noxious stimuli and perceived pain. Therefore, healthcare professionals responsible for postoperative pain management should titrate appropriate pain therapy to the complaints of pain.
and pain scores assessed during well-defined movement relevant for recovery from the procedure in question. Importantly, the goal of any pain therapy should be its ability to improve perioperative outcome and ambulation rather than achieve a specific pain score.

Overall, it appears that opioids were the mainstay of pain therapy in the centers participating in this study. The use of regional analgesia techniques was limited and not explained in detail, although it has been emphasized by all the published guidelines that local anesthetic techniques should be used whenever possible. Furthermore, the routine use of non-opioid analgesics (e.g., acetaminophen and nonsteroidal anti-inflammatory drugs) was not applied, which should be used in preference to opioids. Finally, there was limited information on use of other non-opioid analgesics, which may be valuable.

Therefore, the important question to be asked is how do we improve? Although there are several evidence-based pain management guidelines,¹⁷⁻⁹ the prevalence of inadequate pain management has not reduced.¹² The failure of the currently available guidelines may be because they are generalized for all surgical procedures and may confuse a practitioner who intends to use them for a specific procedure. Another limitation is that they are derived from multiple surgical procedures with different pain characteristics (e.g., type [somatic vs. visceral], location, intensity, and duration) and different consequences on postoperative organ dysfunctions of inadequate pain relief.¹⁰ Furthermore, the efficacy of an analgesic may vary depending on the type of surgical procedure.¹¹ Similarly, the efficacy of combinations of analgesics (i.e., the multimodal analgesia approach) also varies significantly between surgical procedures. For example, the combination of acetaminophen and nonsteroidal anti-inflammatory drugs can provide significantly improved analgesic efficacy after mild-to-moderate surgical procedures, but its benefits may be smaller in patients undergoing more extensive surgical procedures receiving epidural analgesia.¹²⁻¹⁴

To improve postoperative analgesia, it may be beneficial if practitioners are provided with evidence-based, procedure-specific pain management guidelines. Such guidelines should allow for a balance between the invasiveness of the analgesic technique and the consequences of postoperative pain. For example, pain after thoracic surgery may cause pulmonary dysfunction and thereby influence postoperative morbidity. Thus, a neuraxial analgesic technique is preferable for pain management after thoracic surgery,¹⁵ but it may not be appropriate for routine use after laparoscopic colonic surgery because of less influence of pain on ileus and pulmonary function.¹⁶ Furthermore, adverse effects of certain analgesics may prevent their use after selective surgical procedures (e.g., use of nonsteroidal anti-inflammatory drugs for tonsillectomy). Similarly, the consequences of opioid-related adverse effects may vary between surgical procedures.

One of the initiatives that provide recommendations for optimal postoperative pain management that are specific for different surgical procedures is from the PROSPECT group (PROcedure-SPECific Postoperative Pain ManagementT), which is a collaboration of anesthesiologists, surgeons, and surgical scientists. The recommendations are based on procedure-specific evidence from systematic reviews performed using rigorously defined methodological process and supplemented with evidence from other similar surgical procedures (i.e., transferable evidence) and clinical practice information.¹⁷ Importantly, this approach takes into consideration the efficacy and the adverse effects of an analgesic technique for the specific type of surgery. This web-based initiative provides healthcare professionals with supporting arguments for and against the use of various interventions and facilitates clinical decision-making across all the stages of the perioperative period.¹⁸ The detailed information allows the readers to make their own decisions based on their practice and incorporate them in a clinical pathway.¹⁵,¹⁶,¹⁸⁻²⁰

In conclusion, the observations of the study by Gerbershagen et al.,¹ further strengthen the importance of and need for updated, evidence-based procedure-specific pain management guidelines. One example of a successful approach that has also come from Germany is the use of a “quality management system” based on procedure-specific multimodal analgesic protocols.¹¹ Finally, there is an urgent need for assessing the role of incorporating procedure-specific pain therapies in clinical pathways in improving compliance with protocols and thus improving perioperative outcome and reducing hospital stay and achieving early return to activities of daily living.²

References


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