

# Comparing Postoperative Pain After Laparoscopic Cholecystectomy

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To the Editor: In a recent article published by Guo *et al.*<sup>[1]</sup> who compared postoperative pain after traditional and single-incision laparoscopic cholecystectomy (SILC), it was showed that SILC resulted in a slightly less immediate postoperative pain, but pain scores at 24 hours, 7 days, and 1–6 months after surgery were not different between the two operations. Many things of this study were well done. The authors used a double-blinded, randomized, and controlled design. They chose a well-validated endpoint of postoperative pain assessment: Visual analog scale (VAS). They had a large number of patients with a consistent operation and attempted to control most of the known factors affecting postoperative pain following cholecystectomy, such as age, gender, body mass index, type of surgery, and surgical complications. Furthermore, they openly discussed the limitations of their work. All of these are strengths in the study design. We can learn from their example. In our view, however, there were several important issues in this study that were not well addressed.

First, the study subjects were patients with symptomatic gallstones or polyps documented by imaging. Actually, chronic abdominal pain is highly prevalent among these patients and can often cause psychological disorders, such as neuroticism, depression, and anxiety. It was unclear whether preoperative pain intensity, duration of pain, and pain-related psychological morbidities were comparable between groups. It has been shown that a high preoperative gastrointestinal quality of life index score, episodic pain, and duration of pain of 1 year or less are associated with the postoperative absence of pain in patients undergoing cholecystectomy for uncomplicated symptomatic cholelithiasis.<sup>[2]</sup> Furthermore, preoperative neuroticism, depression, and anxiety can significantly affect the postoperative pain severity determined by VAS.<sup>[2,3]</sup>

Second, the readers were not provided with detail of anesthesia and perioperative managements. The available literature indicates that preoperative single-dose dexamethasone, wound infiltration of local anesthetic, subhepatic infiltration of local anesthetic, and combined wound and intraperitoneal use of local anesthetic can significantly reduce pain scores after laparoscopic cholecystectomy.<sup>[4,5]</sup> For laparoscopic cholecystectomy, spinal anesthesia is associated with less early postoperative pain and lower incidence of postoperative complications than general anesthesia.<sup>[6]</sup> Moreover, we were very interested in knowing whether dose of opioid and analgesic drugs used during anesthesia were comparable between groups.

When early postoperative pain between groups is compared, standardization of intraoperative use of opioid and analgesic drugs should be a crucial component of study design. For example, in patients scheduled for cholecystectomy under general anesthesia, intraoperative low-dose ketamine infusion provides good postoperative analgesia and reduces the need of opioid analgesics.<sup>[7]</sup> Therefore, in the absence of comparisons of opioid and analgesic drug dosages during anesthesia, the primary findings about early postoperative pain and their subsequent conclusions must be interpreted with caution, as they may have been obtained using incomplete methodology.

Third, the authors did not specify what VAS was used in this study. In clinical practice, VASs at rest and during movement were often used for pain assessment after chest and abdominal operations, and they can provide different information for postoperative pain management. To ensure a good quality of postoperative recovery, a fast recovery of normal activity and a high patient satisfaction, it is recommended that postoperative VAS during movement should be maintained at 3 or less.

Finally, a number of patients requiring nonnarcotic analgesic loxoprofen sodium for postoperative analgesia was not significantly different between groups, but the readers were not provided with the aim of postoperative analgesia. Thus, it was unclear how investigators determined postoperative analgesic requirements of a patient. Moreover, the authors calculated the sample size only based on mean VASs obtained in their initial study but did not take other variables of interest into account. Thus, we cannot exclude the possibility that this study is not powered to show a difference in postoperative analgesic requirement between groups.

We argue that addressing the above factors would further clarify the transparency of this study and improve interpretation of their findings.

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## Conflicts of interest

There are no conflicts of interest.

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