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Letter to the Editor

Comments on comparing analgesic efficacy of different local blocks after laparoscopic cholecystectomy

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TO THE EDITOR

In a single-center randomized controlled trial including 60 patients who underwent laparoscopic cholecystectomy, Cho et al. [1] compared the postoperative analgesic efficacy of the modified thoracoabdominal nerve block through the perichondral approach (M-TAPA) and subcostal transversus abdominis plane block (TAPB) and showed no significant difference in postoperative pain scores, cumulative analgesic consumption, patient satisfaction with pain control, or incidence of postoperative nausea and vomiting between two techniques. The authors should be congratulated on their excellent work. However, beyond the limitations described in the discussion section, we had several questions about the design and results of this study and wished to get the authors' responses.

First, as an important component of multimodal analgesic strategy, basic analgesics, such as acetaminophen and ketorolac, were intravenously administered during surgery. However, it was unclear why these drugs were not continuously used after surgery. The current protocols for enhanced recovery after surgery for laparoscopic surgery recommend that administration of basic analgesics should be started before or during an operation and regularly executed after surgery, while opioids should only be reserved for rescue analgesia [2]. Even without local blocks, a well-designed multimodal analgesic strategy can also adequately control postoperative pain, keep the patient comfortable, as well as decrease the opioid dose and adverse effects by the synergistic or additive effects of various types of analgesics in the patients undergoing laparoscopic cholecystectomy [3]. Jung et al. [4] demonstrated that even the addition of the bilateral subcostal and lateral TAPB to a standard multimodal analgesic strategy does not improve analgesic outcomes or quality of recovery following laparoscopic cholecystectomy.

Second, to keep the patient comfortable, a numeric rating scale (NRS) score of 3 or less is generally considered as satisfactory postoperative pain control [2]. According to figures 3–6 in the article by Cho et al. [1], we noted that the median NRS score of maximum pain intensity during movement within the first 12 hours postoperatively were 5 or more, with large interquartile ranges. Furthermore, a significant proportion of patients had median NRS scores of 4 or more at rest and during coughing and movement within the first 6 hours postoperatively. These results indicate that most patients experienced moderate

to severe postoperative pain, especially during coughing and movement within the first 6 hours postoperatively. In fact, significant pain during coughing and movement in the early postoperative period can reduce patient mobilization and spirometry utilization, which are crucial to the success of enhanced recovery after surgery protocols. In addition, total incidence of postoperative nausea and vomiting during the patients' hospital stay was more than 40% in this study. As with postoperative pain, postoperative nausea and vomiting also are mostly attributable to the discomfort experienced in the early postoperative period and remain the main challenge that confronts the prognosis of patients after laparoscopic cholecystectomy [5]. Thus, we argue that the two analgesic techniques used in this study, M-TAPA and subcostal TAPB, may not have been generalized to the current enhanced recovery after surgery practices for laparoscopic cholecystectomy.

Finally, for patients undergoing laparoscopic cholecystectomy, postoperative visceral pain is particularly prominent because of peritoneal inflammation, organ injury, regional acidosis, and visceral mucosal tissue ischemia induced by elevated intraperitoneal pressure from the pneumoperitoneum [6]. It must be emphasized that M-TAPA or subcostal TAPB can only block the sensory nerve supply of the abdominal wall rather than the visceral afferent fibers that accompany sympathetic neurons through the prevertebral and paravertebral ganglia. This may be one of reasons why a significant proportion of patients in this study had a median NRS score of more than 4 at rest and during coughing and movement within the first 6 hours postoperatively. It has been shown that both the thoracic erector spinae plane block and paravertebral block can provides visceral and somatic analgesia for patients undergoing laparoscopic cholecystectomy as the local anesthetic is injected between the paraspinal muscles and the transverse process and it may spread caudally and cranially into the paravertebral space, affecting the ventral and dorsal branches of the thoracic spinal nerves and the rami communicants that contain sympathetic nerve fibers [7,8].

DATA AVAILABILITY

Data sharing is not applicable to this article as no datasets were generated or analyzed for this study.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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AUTHOR CONTRIBUTIONS

Xue Gao: Writing the initial draft; Fu-Shan Xue: Critical review, commentary or revision; Xin-Tao Li: Critical review, commentary or revision.

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