

Assessing Perioperative Benefits of Regional Block in Patients Undergoing Total Hip Arthroplasty

To the Editor:

In a randomized controlled study with 40 patients undergoing total hip arthroplasty (THA), Wang and colleagues (1) assessed sensory blockade range of ultrasound-guided oblique sagittal anterior quadratus lumborum block (QLB), and its effects on perioperative analgesic effects and postoperative adverse events and outcomes. They showed that this regional block reduced intraoperative and postoperative opioid consumptions and improved postoperative pain control. Given the facts that the use of a multimodal strategy including nerve or fascial plane blocks can improved perioperative pain control with decreased opioid consumption and fewer complications, and is being emphasized in current clinical practice of ERAS protocols for THA (2), this study has potential implications. However, we noted several issues in this study that needed further clarifications and discussions.

First, the authors did not provide types of diseases for THA, and preoperative pain levels and medication use of patients. Available evidence indicates that hip disease types for THA, severity of preoperative pain, and preoperative use of opioids, anti-convulsants and anti-depressants are significantly associated with the risk of moderate to severe acute pain after THA (3). We are concerned that between-group unbalance in these unknown preoperative factors would have biased the findings of this study.

Second, this study used a single-mode postoperative analgesia strategy in all patients, i.e., patient-controlled interscalene analgesia with oxycodone. However, current ERAS protocols of THA recommend the multimodal strategies of postoperative analgesia, in which other than nerve or fascial plane blocks, a package of basic analgesics, such as paracetamol, NSAIDs or cyclooxygenase-2 specific inhibitors, and dexamethasone, is also included (2). We believe that different results about perioperative benefits of oblique sagittal anterior QLB would have been obtained, if a package of basic analgesics had been included in the design of this study. Recently, this issue of randomized clinical trials assessing postoperative analgesic efficacy of regional blocks in lower limb arthroplasty has been paid attention (4). Thus, we argue that this limitation of

Wang et al' study would have decreased generalization of their findings in current ERAS practice of THA.

Third, fluctuations of blood pressure, heart rate, bispectral index values and surgical pleth index during medullary reaming were less in patients receiving oblique sagittal anterior QLB compared with control patients. However, we noted that net between-group differences in change values of these variables were only 5 to 15. Furthermore, the authors did not state whether fluctuations of these variables in the two groups exceeded their clinically normal ranges. In this case, it is very difficult for the readers to determine whether reduced surgical stimulation by oblique sagittal anterior QLB should be considered as being clinically important. Most important, an inadequate inhibition of surgical stimulation in control patients would also have underestimated intraoperative analgesic sparing of oblique sagittal anterior QLB.

Fourth, a visual analog scale (VAS) score of 3 or less is commonly considered as satisfied postoperative pain control (5). Indeed, in this study, the VAS resting pain scores at 8 hours postoperatively, and VAS active pain scores at 8, 16 and 24 hours after surgery were significantly decreased in patients receiving oblique sagittal anterior QLB compared with control patients. According to the results provided in Table 4 of Wang et al' article, however, mean VAS scores of resting and active pains at all observed points in the two groups were less than 3, indicating that most of patients had a satisfied postoperative pain control. Furthermore, net between-group differences in mean VAS scores of resting and active pains at all observed points did not exceed the recommended minimum clinically important difference required in a randomized clinical trial assessing postoperative pain control after THA, i.e., 1.5 reduction of resting pain and 1.8 reduction of active pain on a 11-point VAS (6). Thus, clinical significance of improved postoperative pain control with oblique sagittal anterior QLB should be considered with caution.

Finally, when between-group difference of postoperative analgesic consumptions was compared, it is generally required that dosages of postoperative an-

algesics should be converted into morphine milligram equivalent, as performed in previous work assessing efficacy of different modalities in patients undergoing THA (7,8). As equianalgesic conversion factor of intravenous morphine and oxycodone for postoperative analgesia is 1:1.5 (9), net between-group difference in mean oxycodone consumptions within first 24 hours postoperatively in this study is equivalent to 4.9 mg intravenous morphine, which is less than the recommended minimal clinically important difference of morphine milligram equivalent for postoperative pain control, i.e, an absolute reduction of 10mg intravenous morphine in the 24 hours (6). That is, the between-group difference of postoperative analgesic consumptions in this study is statistically significant, but its clinical significance is debatable.

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