



Comment on “Comparison of the pericapsular nerve group block with the intra-articular and quadratus lumborum blocks in primary total hip arthroplasty: a randomized controlled trial”

Dear Editor,

We read with great interest the research study comparing the pericapsular nerve group (PENG) block with the quadratus lumborum block (QLB) and intraarticular injection in primary total hip arthroplasty by Et et al. [1] in the recent issue of your esteemed journal. We would like to thank the authors for the quality of their work. However, in the best interest of the readers, we would like to discuss certain aspects in the index study that cannot be overlooked and need to be addressed.

First, the total dose of bupivacaine (30 ml of 0.5% bupivacaine) used in the study might exceed the recommended safe dose (2–2.5 mg/kg) in specific subsets, given that the study did not mention the minimum body weight (exclusion criteria of body mass index > 40 kg/m²) of the patients enrolled in the clinical trial [1]. In addition, the study population included geriatric patients (aged up to 85 years), in whom drug pharmacokinetics could have been significantly affected by age-related organ dysfunction, resulting in an increased predisposition to local anesthetic (LA) toxicity.

Furthermore, the volume and concentration of LA agents affect the duration of analgesia provided by any regional block. In the present study, the drug volumes differed among the groups (30 ml of 0.5% for the QLB group, 20 ml of 0.5% for the PENG block group, and 60 ml of 0.25% for the intraarticular group). Additionally, the concentration was reduced to 0.25% in the intraarticular group, unlike the 0.5% used in the other two groups. The authors also did not compare the mean age or age-wise distribution of patients in the respective groups, which can be a confounding factor, as sensitivity to (LA) agents varies with age.

Ropivacaine is a relatively safe drug, and its plasma concentration has been studied to confirm its safety, even at higher doses [2]. Therefore, ropivacaine would have been a better choice for this study, especially at such high doses. Additionally, the authors could have followed up with their patients for chondrotoxicity, which would have added more evidence regarding this LA associated side effect [3].

Pain scores were higher in the intraarticular group than in the other groups at 3 and 6 h postoperatively. With an intraarticular injection of LA, the joint capsule has a greater surface area for drug absorption, which may explain the poor analgesia provided by this block in the

initial hours after surgery [3]. In addition, comparing the effect of an intraarticular block on quadriceps muscle function is futile, as drug deposition is limited to the articular surface, and thus does not affect the nerve supply to any muscle.

The sham procedure followed by the authors for blinding is also unclear [1]. The authors state that the ultrasound probe was held in the same position for both the QLB and PENG block. A sufficient pause was allowed to simulate a blunt needle, then a 20-ml syringe with saline and no other medication was administered. If no injection was performed, the surgeon, attending anesthesiologist, and patient could easily determine the allocated group, and blinding would be inadequate. Intraarticular injections were only performed in the intraarticular group; thus, the surgeon, attending anesthesiologist, and even the patient, who was awake, would not have been blinded.

Finally, the main advantage of the PENG block is its motor-sparing effect, as it blocks only the articular branches of the femoral and accessory obturator nerve, which are sensory nerve fibers [4]. However, clinical reports of inadvertent quadriceps weakness exist in the literature, even after PENG blocks with 20 ml of LA [5]. Yu et al. [5] hypothesized that LA injection more superficially than intended or needle placement medial to rather than posterior to the psoas tendon may result in superficial spreading of a proportion of the LA, which could inadvertently block the femoral nerve or fascia iliaca. According to Giron-Arango et al., the mechanism of the femoral nerve block, especially with volumes greater than 20 ml, could be LA spread between the pectineus and psoas to target the femoral nerve [4]. Therefore, it should not be surprising that almost 50% of patients in the PENG group had paresis at 3 h. Hence, clinicians should be wary of motor weakness after performing a PENG block and verify correct needle positioning and drug volume.

To conclude, we would like to thank Et et al. [1] for their valuable research. We hope that clarifying the points mentioned above will increase the validity of the manuscript.

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Response to “Comment on Single-shot regional anesthesia for laparoscopic cholecystectomies: a systematic review and network meta-analysis”

Dear Editor,

We would like to extend our gratitude to Dr. Raghuraman for his keen interest and invaluable insights [1] pertaining to our research article [2].

We acknowledge that the sentence in the introduction highlighted by Dr. Raghuraman could be confusing. It would be more accurate to state that numerous meta-analyses have examined different facets of laparoscopic cholecystectomy [3], and a subset of them have placed a specific emphasis on pain management and analgesic needs.

Furthermore, we agree with Dr. Raghuraman's point regarding the disproportionate representation of groups in our study, which rendered the results inconclusive. Indeed, very few studies were included for certain techniques, such as the paravertebral block (2 studies in-

volving 63 patients) and rectus sheath block (3 studies involving 86 patients). In contrast, a larger population was included for other techniques, such as intraperitoneal instillation (1,490 patients across 37 studies). Additionally, not all studies examined all the outcomes, as noted by Dr. Raghuraman.

Therefore, our study should not be considered the final authority on the subject, but rather an initial analysis of the available literature. Of note, a recent publication [4] has proposed a consensus-based core outcome set for research on regional anesthesia. As this would lead to a greater standardization of outcomes and thus enhance the reliability of future meta-analyses, we hope this framework will be adopted in future studies. However, as stated in the above-cited document, only a core set of outcomes were included, and shoulder pain should be included as it is important in laparoscopic cholecystectomy.

In response to Dr. Raghuraman's last question, we would like to clarify that the mechanism of action of the transverse abdominis plane block is significantly different from that of the rectus sheath block. However, the most effective interventions in our meta-analysis were regional techniques that addressed visceral pain, such as the paravertebral, quadratus lumborum, and erector spinae plane blocks. This can be clearly observed in Table 2 of the original document, which shows the treatment rankings [2]. Although the paravertebral block did not rank high for most outcomes, this was primarily because of the limited number of studies and participants included in the analysis.

Further research is required to determine the optimal regional techniques for laparoscopic cholecystectomy. However, we advocate for anesthesiologists to adopt a multimodal strategy that addresses somatic, visceral, and shoulder pain, as highlighted by Dr. Raghuraman.

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