

Response to: Børglum, Gögenur and Bendtsen

Reply:

We would like to thank Børglum et al for their interest in our recently published randomized controlled trial (RCT), hereby opening a very promising debate.¹ Although our study was performed in a very meticulous way, Børglum et al identified several weaknesses and questioned our conclusions.

We fully agree with Børglum et al that the Quadratus Lumborum (QL)1 technique used by us is a block performed at the lateral edge of the QL muscle, merely covering the lower abdominal wall region. As the authors point out, the QL1 approach is hardly more than a posterolateral transversus abdominis plane (TAP) block. We must admit that it might be confusing that we used the term “QL block” in our introduction while referring to 2 TAP RCTs. Notably, in these RCTs, the TAP block reduced postoperative cumulative opioid consumption after colorectal surgery.^{2,3} Furthermore, Carney et al⁴ called the QL in his trial simply a “posterior TAP” and demonstrated with magnetic resonance imaging some degree of spread to at least T10-T11 and even to T4-T5 in a few cases. Another reason why we chose for the QL1 was the publication of Børglum in 2012 in which the QL block was described as “new kid on the block.”⁵ Altogether this inspired us to perform an adequately powered RCT.

At the time when we wrote our study protocol in 2013, the QL3 block was described for the first time by Børglum.⁶ We do believe that using a transmuscular approach for the QL block (ie, QL3) looks very promising, but in 2013 there was simply not enough evidence to incorporate this relative new technique in our protocol.

We are still awaiting prospective, double-blind RCTs testing the QL3 block. Børglum et al claim that the evidence is already very convincing with regard to the efficacy of the QL3 block. To the best of our knowledge, these claims are merely based on 2 recently published abstracts.^{7,8}

We do not believe that these reports provide robust evidence. While the results look very spectacular, the studies suffer from a very low number of patients. Furthermore, one of these studies demonstrated good pain control after caesarean

section, in which the umbilical (T9–T11) and epigastric areas (T6–T9) are hardly involved.⁷ In this particular setting, a simple TAP block could have probably yielded the same results concerning somatic wall pain. In addition, the patients in this study had received spinal anesthesia with addition of sufentanil which could have confounded postoperative pain scores and morphine consumption. Moreover, the QL3 was compared with placebo and not to a TAP block, so that the superiority for the control of visceral pain could not be tested.

The other abstract showed a nice result of the QL3 block in a patient population undergoing percutaneous nephrolithotomy. These interventions are indeed very painful, but pain is caused by the irritation of somatic pain fibers in the lateral abdominal wall akin to a lithotomy incision and does not involve visceral pain.⁸

We also agree with Børglum et al that the QL1 block covers the regions supplied by the ilioinguinal and iliohypogastric nerves, since in our study, we systematically observed a sensory block of the upper leg dermatomes. However, we could never find any adequate sensory loss of the lower abdominal wall (T12-L1) which is in line with the rather patchy and nondermatomal sensory losses reported in several papers.⁹ On the basis of our experience, we are convinced, in contrast to the Børglum et al, that even for lower abdominal surgery the QL1 block should not be used.

Børglum et al point out that adding clonidine as an adjuvant to our mixture might have confounded our results. However, since even the addition of clonidine did not result in any significant difference in outcome between the groups, it is most likely that the QL1 block is ineffective in the studied setting. Notably, Bollag et al¹⁰ have already demonstrated that adding clonidine to a TAP block does not affect analgesia in a significant way.

Our work is also very important with regard to possible systemic toxicity of local anesthetics when performing these fascial plane blocks. Plasma concentrations of local anesthetics observed in our study were very high and should be a cause of concern for any anesthesiologist using abdominal wall blocks. In this regard, caution is also warranted when using a bilateral combination of lateral TAP and subcostal TAP blocks in an attempt to achieve a larger sensory block in colorectal surgery.

In conclusion, we agree with Børglum et al that the QL1 block does not offer any benefit for pain scores or morphine consumption in colorectal surgery. Adequately

powered and meticulously performed RCTs are required to identify potential subgroups of patients within abdominal surgery that will most likely benefit from QL blocks. Furthermore, RCTs are warranted that test the comparative efficacy of the different QL-block approaches in well-defined patient populations.

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The authors report no conflicts of interest.

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ISSN: 0003-4932/16/XXXX-0001

DOI: 10.1097/SLA.0000000000003160

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