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Adductor canal or femoral triangle block: not a conundrum but a continuum. Comment on Br J Anaesth 2020; 124: e194–5

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Keywords: adductor canal block; femoral triangle block; postoperative analgesia; regional anaesthesia; ultrasonography

Editor—We read with great interest the letter by Sondekoppam and colleagues[1] redefining adductor canal block and femoral triangle block. We congratulate the authors for underlining how a very thin borderline exists between these two techniques, and how they can overlap each other in relationship to anatomical continuity, which makes differentiation of adductor canal block and femoral triangle block difficult.

We strongly agree with the statement: not by chance, we already described the continuity between the two techniques.[2] When an injection is performed close to the superficial femoral artery (SFA) in the 'true adductor canal', it can result in local anaesthetic spread that extends cranially towards the femoral triangle,[2] but also distally towards the adductor hiatus and potentially to the popliteal fossa.[3] As the authors suggested, we also believe that the SFA represents the continuity between those compartments, better than fasciae or muscles.

Based on these anatomical considerations, we must be aware that local anaesthetic could spread cranially when injected in proximity of the SFA, and thus lead to an undesired femoral nerve block. In the same way, as described by Wong and colleagues,[3] a distal adductor canal block could result in local anaesthetic spread towards the popliteal fossa, where the popliteal plexus and the sciatic nerve lie.[4] This relationship of continuity can be evaluated with ultrasound: the soap bubble[2] and the inverse double bubble signs[5] are previously described sonographic endpoints which in our and others' experience correlate with successful block. These signs can be used to follow local anaesthetic spread proximally along the entire thigh length.

Regardless of the anatomical level of the block, we suggest searching for these signs in real time during block execution and interrupting injection before local anaesthetic reaches the inguinal crease to avoid inadvertent femoral nerve block. We

provide two ultrasound videos, performed in two different patients, in both short and long axis view showing the proximal spread of local anaesthetic after the injection of 10 ml at the apex of the femoral triangle (Supplementary Data S1 and S2).

In conclusion, we think that the continuity of the bubble signs along the thigh well demonstrates the anatomical continuity between the femoral triangle and the adductor canal. In addition, we consider dynamic evaluation of the craniocaudal spread of the injectate by ultrasonography as the most reliable method to obtain a safe and effective block. The block categorisation suggested by the authors best suits this new conception that the adductor canal is no more a conundrum, but rather a continuum.

Declarations of interest

The authors declare that they have no conflicts of interest.

Supplementary material

Supplementary video related to this article can be found at https://doi.org/10.1016/j.bja.2020.04.018

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Effect of intraoperative PEEP and recruitment manoeuvres on postoperative lung aeration. Comment on *Br J Anaesth* 2020; 124: 101–109

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Keywords: atelectasis; inspired oxygen; positive end-expiratory pressure; recruitment manoeuvre; zero end-expiratory pressure

Editor—I read with interest the publication by Généreux and colleagues.[1] It reports that the degree of aeration loss after tracheal extubation was similar between groups receiving either PEEP and recruitment manoeuvres (RM) or zero end-expiratory pressure intraoperatively, although intraoperative aeration loss was less in the PEEP/RM than in the zero end-expiratory pressure group. Some factors might have modified the findings.

First, all patients had initially received the intermediate-acting neuromuscular blocking agent rocuronium. Supplemental intraoperative dosing of rocuronium does not seem to have been guided by neuromuscular monitoring. In the absence of such monitoring, residual neuromuscular block after the administration of fixed doses of neostigmine and glycopyrrolate before emergence from anaesthesia cannot be ruled out. As residual neuromuscular block is associated with impaired postoperative lung function and postoperative pulmonary morbidity,[2,3] a modifying effect on the findings cannot be ruled out.

Second, before tracheal extubation, patients in the PEEP/RM group were spontaneously breathing for a median time of ~2.5 min, individual patients for up to 5 min. There is no indication that the intraoperatively applied PEEP of 7 cm H_2O was maintained during this period of time up to the moment of tracheal extubation. Acute withdrawal of PEEP at a time of resumption of spontaneous respiration in the presence of increased airway resistance caused by the tracheal tube might have facilitated formation of atelectasis.

Finally, there is no information regarding the inspired oxygen fraction (F_IO_2) during spontaneous respiration before