

## Letters to the editor

### Central neuraxial blockade in ambulatory surgery

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*To the editor:* I read with interest the article "Clinical assessment of spinal and epidural anesthesia in inguinal hernia repair" by Günel and colleagues [1]. The authors demonstrated that the perioperative outcome showed some differences in patients who underwent inguinal hernia repair by spinal and epidural anesthesia. Although they compared the effect of spinal and epidural anesthesia on surgical outcome, they did not state a clear conclusion. However, their results are full of suggestions about when we should perform central neuraxial blockade in ambulatory surgery.

They showed that epidural 0.5% bupivacaine was not able to provide adequate abdominal muscle relaxation but had a longer duration than spinal bupivacaine. It has been reported that temporal summation cannot be blocked by 0.5% bupivacaine epidural anesthesia [2], whereas spinal 0.5% bupivacaine anesthesia inhibits temporal summation [3]. Temporal summation occurs when the repetition of a peripheral stimulus causes increased and prolonged firing of dorsal horn neurons (central sensitization). Therefore, inhibition of temporal summation is important for pain prevention, and there is a possibility that epidural 0.5% bupivacaine does not provide adequate analgesia in inguinal hernia repair.

Why were the visual analogue scores in the epidural anesthesia group higher than those in the spinal anesthesia group at postoperative hours 12 and 24, although the first pain sensation time (FPT) was significantly later in the epidural anesthesia group? The answer is not clear. I suppose that 0.5% bupivacaine epidural anesthesia could not block the noxious stimuli completely, so that the visual analogue scores in the epidural anesthesia group were higher than those in the spinal anesthesia group at postoperative hours 12 and 24. Epidural 0.5% bupivacaine is not appropriate for ambulatory surgery, because it does not inhibit temporal summation and does not provide adequate abdominal muscle relaxation.

Spinal anesthesia provides adequate muscle relaxation and inhibits temporal summation. However, post-dural-puncture

headache (7.7%) and post-lumbar-puncture back pain (28%) occurred in the spinal anesthesia group with the use of a 22-gauge needle (the type of needle was not clear). This result suggests that a small needle is preferable in ambulatory surgery if spinal anesthesia is to be performed. The use of the small needle may reduce these adverse effects, at least for post-dural-puncture headache. On the other hand, I have a question. I agree with the onset time of epidural anesthesia, but I believe the onset time of spinal anesthesia is slow. Bupivacaine produces onset of anesthesia in 5–8 min in spinal anesthesia [4]. Why was the onset time of spinal anesthesia ( $11.3 \pm 1$  min) so slow?

Finally, Arakawa and colleagues have reported that epidural anesthesia with the addition of bicarbonate (20 ml of 2% lidocaine plus 2 ml of sodium bicarbonate 8.4% added immediately before injection) and epinephrine (1:200 000) to lidocaine might be able to inhibit temporal summation and is able to enhance the sensory and motor blockade [5]. It is thought that epidural anesthesia with alkalized lidocaine instead of bupivacaine could provide an acceptable alternative in ambulatory surgery.

### References

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