Sphenopalatine ganglion block for the treatment of postdural puncture headache. Reply to *Br J Anaesth* 2020; 124: 739–47

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Editor—We thank Liu and Lim for their interest in our randomised study on the use of sphenopalatine ganglion block to treat postdural puncture headache,[1] in which we found sphenopalatine ganglion block given with local anaesthetic *vs* saline to have similar but large treatment effects in both groups, and a 50% and 55% avoidance of an epidural blood patch. It has been proposed that postdural puncture headache is caused by CSF leakage resulting in reduced ICP, but the actual mechanism is unclear.[2] We hypothesised that the postdural puncture headache is caused by uncontrolled compensatory intracranial vasodilation that remains even after the decrease in CSF volume has been countered, and that sphenopalatine ganglion block may attenuate this uncontrolled parasympathetic cerebral vasodilation and thus provide rapid symptom relief.

Liu and Lim[1] suggest that the significantly lower pain scores in the upright position at 30 and 60 min after the block could be attributed to restoration of cerebrospinal volume. This proposal is thought-provoking but considering that we only included patients with headache that persisted after they had received standard care—bed rest in a supine position and treatment with fluids, caffeine, and paracetamol—we consider this unlikely.

Why sphenopalatine ganglion block continues to have an effect even after the local anaesthetic resolves is an intriguing question. We chose a 1:1 mixture of lidocaine and ropivacaine because our previous clinical experience indicated that, in many patients, administering only lidocaine 4% resulted in rebound headache and hospital readmissions after sphenopalatine ganglion block, in some patients even after just a few hours. We therefore added a long-acting local anaesthetic to extend the effect. Interestingly, we found a prolonged effect beyond the pharmacodynamic properties of ropivacaine. Postdural puncture headaches are likely to have a natural course with remission for the majority of patients, although only about half of patients have remission within the first 4 days of headache onset.[2] We found limited rebound headache with our mixture of short- and long-acting local anaesthetics. We observed a swift onset of effect, and three of 19 patients needing an epidural blood patch did so within the first 24 h after the initial sphenopalatine ganglion block, with a median time to an epidural blood patch of 11 (range 2.5–70) h and 5.5 (range 2.2–67) h in the local anaesthetic and placebo groups, respectively. Patients needing an epidural blood patch had a reduction of headache in the upright position after 60 min, with a median reduction in VAS of 18 (inter-quartile range 0–43) mm compared with a median reduction of 38 (inter-quartile range 21–72) mm among those not needing an epidural blood patch. This suggests that if sphenopalatine ganglion block has an acceptable initial effect within 1 h, an epidural blood patch is unlikely to be needed.

We agree that in order to evaluate whether the sphenopalatine ganglion block reduces rates of epidural blood patch, further investigations including a control group (e.g. bed rest) are needed. All patients included in our study would have received an epidural blood patch with current standard of care, as they had severe and invalidating headaches unrelieved by bed rest, fluids, caffeine, and paracetamol. Notably, the need for an epidural blood patch was reduced by 52.5% overall. Whether this was a result of the sphenopalatine ganglion block (with or without local anaesthetic) or a powerful placebo effect should be further explored.

Declarations of interest

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References

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