Convulsions after the administration of high dose ropivacaine following an interscalenic block

To the Editor:

We report the unintentional administration of 400 mg ropivacaine during an interscalenic block in a patient suffering from hemolytic-uremic syndrome and epilepsy. The patient was scheduled for the creation of an arterio-venous fistula of the left forearm.

The interscalenic block was performed with a neurostimulator and 400 mg ropivacaine ($6.15 \text{ mg}\cdot\text{kg}^{-1}$), instead of the intended 200 mg, were injected incrementally over ten minutes. Twenty minutes after the end of injection, the patient presented generalised convulsions, which were treated with intravenous thiopental. The total venous ropivacaine concentration measured one hour after the block was $2.09 \text{ mg}\cdot\text{l}^{-1}$.

Although a partial intravascular injection of ropivacaine cannot be excluded, the casual relationship between the block and the seizure remains uncertain. The large dose mistakenly injected is a good explanation; however the ropivacaine concentration measured here is in the same range as in other studies where no such toxicity was demonstrated.^{1,2} One explanation is that seizure thresholds for local anesthetics in epileptic patients are modified. Moreover, the higher levels of plasmatic alpha-1-acid glycoprotein, inherent to chronic renal failure, may have prevented more serious complications in this case.

This unintentional injection of a large dose of ropivacaine illustrates its high cardiovascular safety.³

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References

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