

Bilateral Brachial Plexus Block Using Chloroprocaine For Surgery Of Bilateral Radial Fractures [Letter]

This article was published in the following Dove Press journal:
Local and Regional Anesthesia

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Dear editor

With great interest we have read the article by Mangla et al¹ recently published in *Local and Regional Anaesthesia*. In this article, they present the anaesthetic considerations of a trauma patient with bilateral radial fractures. Because of post-traumatic orofacial swelling combined with a sore throat after a previous anaesthesia, they anticipated a possible difficult airway. The patient was motivated for a bilateral brachial plexus anaesthesia combined with midazolam and propofol infusion. A infraclavicular block on the right and a supraclavicular block on the left were performed under ultrasound guidance.

We would like to share our thoughts regarding this anaesthetic plan with respect to patient safety. Firstly, combining different local anaesthetics is common but their toxicity is additive. Calculating maximal doses becomes blurred. Blocks become unpredictable due to changes in pKa values and alterations in free fractions of these local anaesthetics.² Secondly, when pulmonary complications are a real concern we suggest to perform a bilateral axillary block since there are no concerns regarding pulmonary failure (diaphragm palsy, pneumothorax). In combination with a skin ring block to address the intercostobrachial nerve, patients will have sufficient anaesthesia to tolerate a tourniquet (if needed).³ Third, Mangla et al performed a bilateral brachial block using bupivacaine 0.5%. Regarding LA toxicity, ropivacaine has largely replaced bupivacaine as the most commonly used long-acting local anaesthetic in peripheral nerve blockade. In equivalent doses, it produces less motor blockade compared to bupivacaine but an equally effective sensory block.⁴ Most important ropivacaine is less cardiotoxic compared to bupivacaine.⁵ The volume of LA that was given to perform the brachial blocks was 30–40mL. An increased volume will increase the spread of local anaesthetics, increasing the chance of blocking the phrenic nerve. Especially as 20 mL of ropivacaine 0.75% or low dose ropivacaine 0.375% is sufficient in a ultrasound guided supraclavicular block.

Determining the anaesthetic plan is always a delicate balance between patient wishes, surgical options, surgical and/or anaesthesia risks. Anaesthesiologists should implement the plan that minimizes the risk to the patient.

Disclosure

The authors report no conflicts of interest in this communication.

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References

1. Mangla C, Kamath HS, Yarmush J. Bilateral brachial plexus block using chloroprocaine for surgery of bilateral radial fractures. *Local Reg Anesth.* 2019;12:99–102. doi:10.2147/LRA.S225471
2. Gitman M, Fettiplace MR, Weinberg GL, Neal JM, Barrington MJ. Local anaesthetic systemic toxicity: a narrative literature review and clinical update on prevention, diagnosis, and management. *Plast Reconstr Surg.* 2019;144:783–795. doi:10.1097/PRS.0000000000005989
3. Magazzeni P, Jochum D, Iohom G, Mekler G, Albuisson E, Bouaziz H. Ultrasound-guided selective versus conventional block of the medial brachial cutaneous and the intercostobrachial nerves: a randomized clinical trial. *Reg Anesth Pain Med.* 2018;43:832–837. doi:10.1097/AAP.0000000000000823
4. Nader A, Kendall MC, De Oliveira GS Jr, et al. A dose-ranging study of 0.5% bupivacaine or ropivacaine on the success and duration of the ultrasound-guided, nerve-stimulator-assisted sciatic nerve block: a double-blind, randomized clinical trial. *Reg Anesth Pain Med.* 2013;38:492–502. doi:10.1097/AAP.0b013e3182a4bddd
5. Knudsen K, Beckman Suurkula M, Blomberg S, et al. Central nervous and cardiovascular effects of i.v. infusions of ropivacaine, bupivacaine and placebo in volunteers. *Br J Anaesth.* 1997;78:507–514. doi:10.1093/bja/78.5.507

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