

# Delayed Neurological Recovery After Ultrasound-Guided Brachial Plexus Block: A Case Report [Response to Letter]

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## Dear editor

We would like to thank Dr. Mangla and Dr. Yarmush for their interest in our case report. We appreciate their effort and knowledge with which they have raised their concerns regarding the case report.

Firstly, the patient had an American Society of Anesthesiologists, Physical Status (ASA PS) class I status as mentioned in the case description. Thus, it goes without mentioning that the patient was a non-smoking healthy individual with no known co-morbidities, no alcohol use and a body mass index within normal ranges.<sup>1</sup> To add, he had undergone a pre-anaesthetic assessment before surgery with investigations as per the institutional practice which included a complete blood count (including a platelet count, prothrombin time and international normalized ratio for cases planned under regional anaesthesia), serum sodium, potassium, urea and creatinine levels. All of these parameters were within normal ranges. For the surgery, the patient was put in right lateral position with a padded support below the left elbow with the shoulder abducted at 90 degrees for the entire duration of the surgery which as mentioned in the report was 130 minutes. There were no episodes of hypotension or hypoxemia in the pre-, intra- or the post-operative periods. Hence, no pre- or intra- operative risk factors for neuropathy was present in the patient.<sup>2</sup> As they have mentioned in their letter, the tourniquet can cause a reversible block distal to it. Also, a more appropriate method of determining the adequate pressure would have been by measuring the limb occlusion pressure rather than using 250 mm of Mercury pressure.<sup>3</sup> However, we think that it is unlikely for the tourniquet to have caused the delayed recovery in this case since the block had persisted even above the site of its application (C5 to T1 dermatomes) till week three.<sup>4</sup>

Secondly, as pointed out and as we have mentioned in the discussion of the case report, an early nerve conduction study (before three to four weeks) may be normal.<sup>5</sup> By week three after the administration of the block, the patient had started to develop paresthesia. He was advised for a repeat nerve conduction test by the neurologist but he declined to it. He had made a valid point that the clinical management would not change with the results of the test and had opted to wait for a few more weeks. By the sixth week, the patient had recovered sensation of the entire upper limb with partial recovery of the motor functions.

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Thirdly, brachial plexus injuries can be easily found in the literature following peripheral nerve blocks.<sup>2,6-8</sup> They are one of the common adverse events in anesthesia but are often limited to either individual nerves or some part of the brachial plexus trunk.<sup>9</sup> We could not agree more with the statement that the conclusion we came to was not based on strong evidence. This conclusion however was made after ruling out all other causes. The current understanding of the in-vivo effects of local anesthetic agents and adjuvants is very limited since most research regarding the inherent toxicity of these drugs are based on in vitro models.<sup>10</sup>

Thank you for showing interest in the case report and for the opportunity to respond to the letter.

## Disclosure

The authors report no conflicts of interest in this communication.

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