

## Ultrasound-Guided Selective Ulnar Nerve Block at the Level of Mid-Forearm for Outpatient Procedure

### Günübirlik Cerrahide Orta Önkol Seviyesinden Yapılan Ultrasound Eşliğinde Selektif Ulnar Sinir Bloğu

Ultrasound Guided Ulnar Nerve Block

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#### To the editor:

Post-operative pain and delayed discharge are common problems for patients undergoing outpatient procedures [1]. Insufficient pain management, prolonged motor block, and opioid-related nausea and vomiting are the main causes of delayed discharge, resulting in not being able to accept new patients [2]. Ultrasound-guided regional anesthesia may be an ideal technique for providing optimal analgesia and reducing opioid use [3]. The use of ultrasound enables visualization of nerves and the observation of the needle tip and spread of the injected local anesthetic.

In this report, discuss ultrasound-guided selective ulnar nerve block at mid-arm level in a patient who did not agree to receive general anesthesia and was not satisfied with the previous regional anesthesia experience due to development of complete motor block.

A 21-year-old female patient was admitted to the orthopedics outpatient clinic due to swelling and pain in the 5th finger of the left hand. It was decided that she would undergo surgical excision with the pre-diagnosis of exocytosis (Figure 1a-b). On her pre-anesthetic visit one day before the operation, she did not have a known disease. Explanations regarding general anesthesia and regional anesthesia options were provided. It was planned that she would undergo the operation with USG-guided ulnar block because she wished to receive regional anesthesia and did not agree to a motor block in her arm.

The left arm was marked for ulnar nerve block under ultrasound guidance and covered; 2 mg of midazolam was administered intravenously. The ulnar nerve was visualized neighboring the ulnar artery with the Esaote My Lab 30 USG device (Figure 2). Nerve tracing was followed and the mid-level of the forearm was reached. 1% lidocaine was applied subcutaneously for skin infiltration. 4 ml of 0.5% bupivacaine and 4 ml of 2% lidocaine mixture were administered to the inferior and posterior parts of the nerve under USG guidance using 50 mm of USG-visible needle with in-plane technique. Nerve stimulator was not used because the ulnar nerve was visualized easily. The sensory block was checked with the pinprick test 20

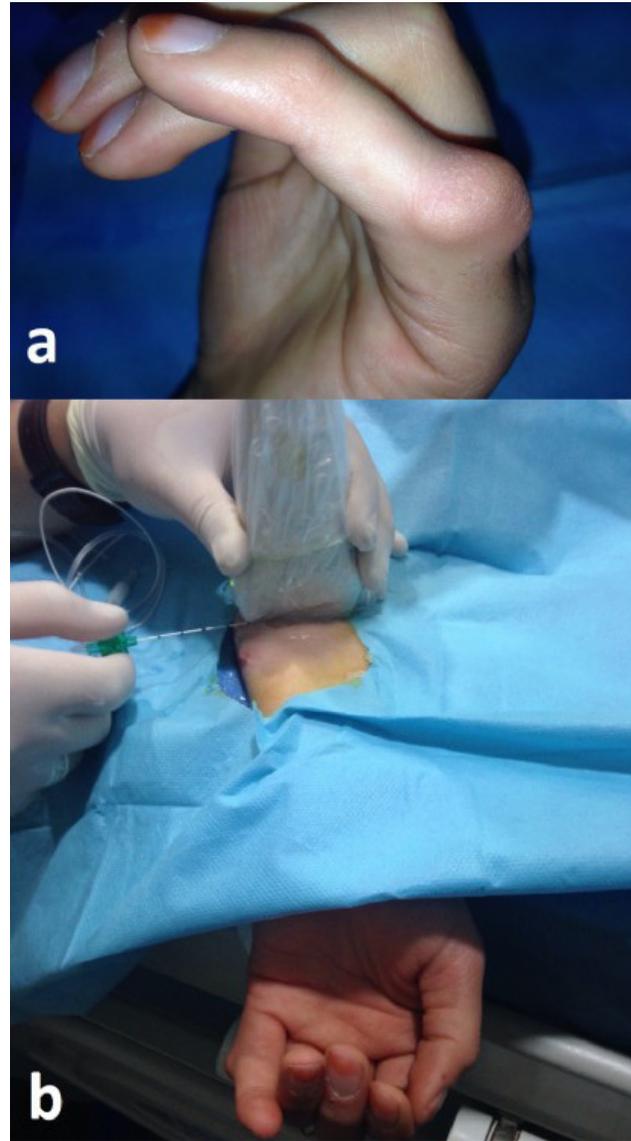


Figure 1. Left hand 5th finger exocytosis (a) Ultrasound probe and needle position(b)

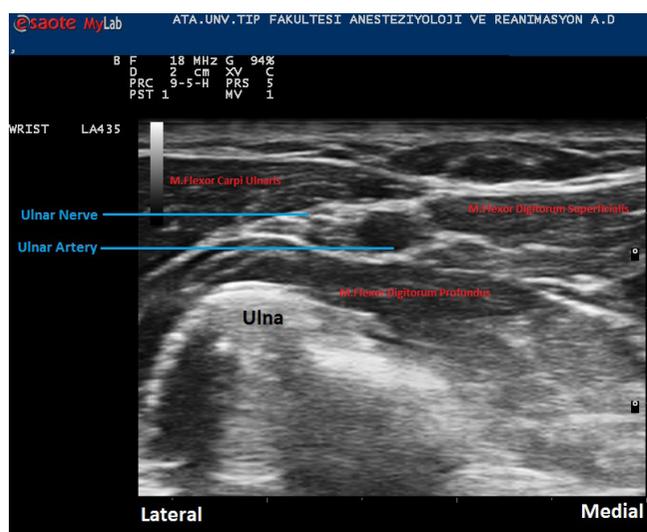


Figure 2. Ultrasound image of ulnar nerve

minutes later and the operation commenced. The patient did not need sedation or additional analgesia during the procedure. The patient comfortably tolerated the operation, which took 45 minutes, under isolated ulnar nerve block. She was discharged on the same day without loss of post-operative motor function. The post-operative analgesia time was 185 minutes.

Brachial plexus blocks may be an appropriate option for patients for whom the use of a tourniquet for forearm surgery is planned, because these blocks include whole nerves. Use of short-acting local anesthetic drugs cannot sufficiently relieve post-operative pain, particularly following bone surgery [4]. In the study of McCartney et al., the time of the first analgesic need was determined as 97 minutes following 1.5% lidocaine administration to the brachial plexus [5]. Alternatively, use of long-acting local anesthetic leads to prolonged motor block and an unpleasant feeling such as a dead arm after discharge [6]. Anesthetists may be reluctant to discharge after prolonged peripheral nerve blocks. We preferred ulnar nerve block at mid-arm level as the most appropriate option as it does not cause motor block and provides sufficient anesthesia. Isolated nerve block becomes an appropriate option for hand surgery in patients for whom a tourniquet would not be used.

These blocks should be applied from distal as possible for preventing motor block and providing anesthesia only in the surgical field [7]. We followed the ulnar nerve under USG guidance at the wrist level and performed the nerve block procedure at mid-arm level. While the patient had a long post-operative analgesia period through long-acting local anesthetic, no loss of motor function occurred.

In conclusion, USG-guided selective nerve blocks may be an appropriate alternative option in outpatient hand surgery procedures in which a tourniquet would not be used, as it provides anesthesia only in the operative field, does not cause motor block, enables early discharge, provides sufficient post-operative analgesia, and enables avoidance of general anesthesia.

### Competing interests

The authors declare that they have no competing interests

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