CASE REPORT

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Ultrasound-guided bilateral infraclavicular block in a pediatric patient: Case report

Abdullah Kahraman

Department of Anestesiology, Van State Education and Research Hospital, Health Science University, Ministry of Health, Van, Turkey

ABSTRACT

Bilateral brachial plexus block is not frequently applied due to the risk of local anesthesia toxicity development. Therefore, general anesthesia is often the first choice in patients undergoing bilateral upper extremity surgery. A 14 years old female patient, weighing 42 kg was scheduled for surgery due to post-traumatic bilateral forearm fractures. Anesthesia methods were explained in detail to patient relatives and to the patient. Due to its high quality post-operative analgesia and long duration of effect, bilateral infraclavicular block was agreed to be used. A 15 ml mixture of 0.5% levobupivacaine and 1% lidocaine, under the guidance of ultrasound was injected to each side with lateral sagittal infraclavicular approach using a 22G injection needle. No operational or intra-operative complication was observed and no additional analgesic consumption was required during the 60 minutes operation and until the post-operative 10th hour. As a result, we believe that, ultrasound-guided upper extremity block, even bilateral block can be applied safely in appropriate pediatric cases.

Key Words: Bilateral peripheric block, infraclavicular block, pediatric patient, ultrasound guided

Introduction

Because of the risk of local anesthetics toxicity development, bilateral brachial plexus block is not frequently applied. Therefore, general anesthesia is often the first choice in patients undergoing bilateral upper extremity surgery.

In this article, bilateral ultrasound guided infraclavicular block application to 14 years old patient with forearm double fractures has been presented.

Case report

A 14 year old female patient weighing 42 kg was scheduled for surgery due to post-traumatic bilateral forearm double fractures. Due to its high quality post-operative analgesia and long duration of affect, and because regional anesthesia methods were preferred by the anesthesiologist, bilateral infraclavicular block was agreed to be used. Approvals of the patient and the relatives were obtained.

The patient was monitored by being laid down in supine position and was sedated intravenously with 1mg midazolam, 50mcg fentanyl. A mixture of 20 ml 0.5% levobupivacaine and a mixture of 10 ml 1% lidocaine were prepared. 22G 100mm in length (Stimuplex Ultra ®, Braun, Melsungen, Germany) needle was used. Ultrasonography (Esaote® MyLab 5, Florence, Italy) probe (12 MHz, linear probe; LA4 35) was positioned 1 cm below the clavicle right next to the injection area. With the help of the probe, subclavian artery and brachial plexus cords were seen and needles were referred to the subclavian artery posteriorly with in-plane technique. Complying with the asepsis-antisepsis conditions, the drug was applied with USG guided lateral sagittal infraclavicular approach, by applying first right then left brachial plexus block with intermittent aspiration at each extremity and as no bleeding was observed and the drug distribution was seen. Plexus posterior cord 8ml and each of anterior and superior cords were injected with 3.5ml of local anesthetics. Motor block for each extremity occurred in about 15 minutes. As there is 5 minutes of difference between the blocks applied to first and the second extremities once the block of the second extremity was completed, bilateral motor block was obtained in a total of 20 minutes. No pre- operative complication was observed, and during the 60 minutes operation, (bilateral forearm double fractures open reduction) and post-operative 17th hour no analgesic consumption was required.

*Corresponding Author: Abdullah Kahraman MD.
Department of Anestesiology, Van State Education and Research Hospital, Health Science University, Ministry of Health, Van, Turkey
Phone: +90 (537) 722 01 44, Fax: 09 0 (432) 212 26 51, E-mail: abdullahhero100@gmail.com
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Discussion

Brachial plexus block; is highly preferred in upper extremity surgery as it provides adequate anesthesia and postoperative analgesia. Bilateral brachial plexus block is rarely preferred because of local anesthetic toxicity, failure of block implementation and the risk of double-sided pneumothorax (1,2). The introduction of ultrasound to clinical application and its usage in peripheral nerve blocks, allow for easy display of vein and nerve structures and help to build up enough block with a lower dose of local anesthetic (2,3). With the use of ultrasound, failure, toxic reactions rate, and used local anesthetic doses are gradually reduced. Sedation for patient compliance is recommended but it is absolutely necessary, especially in children's cases (4). With all of these benefits USG provides, along with appropriate sedation, peripheral blocks can be applied safely in children as well (4,5). We have applied successful bilateral infraclavicular block with sedation under the guidance of USG in a pediatric patient. As a result, we believe infraclavicular block accompanied by adequate sedation and with USG even if bilateral can be applied safely and carefully in selected pediatric cases.

References

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