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Lateral Sagittal Infraclavicular Block Under Sedation in a Four-Year-Old Child

Dört Yaşındaki Çocukta Sedasyon Altında Lateral Sagittal İnfraklavikular Blok Uygulamamız

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To the Editor,

The advantages of a lateral sagittal infraclavicular block (LSIB) include easily identifiable landmarks, the ability to determine the needle entry site and a minimal risk of pneumothorax, as described by Klaastad et al. (1) using magnetic resonance imaging (MRI) in adults. However, there are few studies and cases concerning the use of LSIB under sedation or general anaesthesia (2-4). In a letter including four paediatric cases, 15-20 mL of bupivacaine 0.25% with epinephrine (1:200,000) was used, and in a study with 80 children, 0.5 mL kg^{-1} of bupivacaine 0.25% with adrenaline (5 μg mL^{-1}) was used for LSIB under general anaesthesia (2, 3). In another study, 0.5 mL kg^{-1} of ropivacaine 0.5% was used for the lateral vertical infraclavicular block, under sedation, in children (4).

Here, we report the case of a 4-year-old male child (height 110 cm, weight 20 kg, ASA I) who received LSIB under sedation for left trigger thumb surgery.

EMLA® cream (Astra Zeneca, Wedel, Germany) was applied to the right hand for venous cannulation, in which a 22 G venous cannula was inserted, and 0.05 mg kg^{-1} of midazolam and 0.5 mg kg^{-1} of ketamine were administered intravenously for sedation. In the operating room, standard monitoring (electrocardiogram, non-invasive blood pressure, pulse oximetry) was applied.

The level of sedation was assessed using the Ramsey Sedation Scale, and while the sedation score (SS) was 2, the block was performed with the patient in the supine position and head turned to his right side. With the anaesthesiologist standing behind the child's left shoulder, the arm was adducted, and the left hand was placed on the abdomen. Although the point of the needle insertion is stated as the intersection between the clavicle and the coracoid process (CP) in the literature (1-3), we inserted the needle 1 cm inferiorly to the intersection between the clavicle and the CP (Figure 1).

After antiseptic preparation of the area, 1 mL of lidocaine 1% was infiltrated. A 22 G, 50-mm, insulated needle (Stimuplex A; B. Braun Medical Ltd., Melsungen, Germany) was connected to the active lead of the nerve stimulator (Stimuplex HNS 11; B. Braun Medical Ltd., Melsungen, Germany), and 1.5-mA current impulses of 0.1 ms in duration at a frequency of 1 Hz were delivered. The needle was inserted caudally in a sagittal plane and 60° from the skin on a horizontal plane. At a depth of 10 mm, flexion of the thumb, second and third fingers was accepted as a median nerve response, elicited with a current of 0.3 mA but not with 0.2 mA. Slowly, 5 mL of a bupivacaine 0.25% and lidocaine 1% mixture was injected. During needle insertion and redirection, continuous aspiration was performed to detect any possible intravascular placement.

Twenty minutes after the block was completed, the patient was tested by the surgeon before incision, and pain-free surgery was begun. During the surgery, the patient was cooperative (SS=1) and required no additional sedation. The surgical procedure lasted 30 minutes. The duration of motor block and sensory block were approximately 2.5 and 6 hours, respectively.

Throughout the anaesthesia, there was no change in haemodynamic parameters. Additionally, there were no intra- or postoperative complications.

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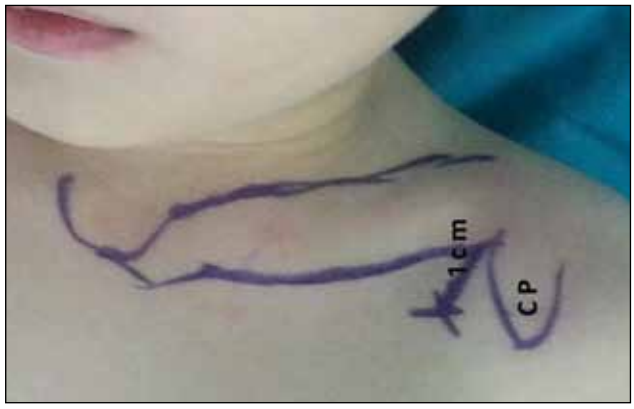

Figure 1. Left infraclavicular region illustrating the lateral sagittal infraclavicular block using the inferior approach. The needle is placed at the 1 cm inferiorly to the intersection between the clavicle and the CP

We conclude that LSIB using the inferior approach with low-dose local anaesthetics (0.25 mL kg^{-1}) under sedation may be an option for regional and general anaesthesia in minor hand, forearm and elbow surgery in children. However, the limitation of block performance under sedation in children is the risk of sudden, unexpected movements, which may be higher in children than in adults.

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