

Vertical Infraclavicular Brachial Plexus Block in a Child with Cystic Fibrosis

To the Editor:

Vertical infraclavicular brachial plexus block (VIP) as described by Kilka et al. in 1995 is becoming increasingly popular in Europe (1,2). It combines easily identifiable landmarks with a high rate of success, rapid onset of plexus blockade, no need for patient cooperation (a nerve stimulator is mandatory), and a good safety margin. Anesthesia of the hand, forearm, elbow, and upper arm, proximally extending almost to the shoulder is achieved. Care must be taken concerning correct needle insertion, as pneumothorax is a specific albeit rare complication (3,4). However, to our knowledge, no reports exist of this approach to the brachial plexus in the pediatric population.

We report a case of an 8-year-old, 23-kg girl with cystic fibrosis who was scheduled for open reduction and internal fixation of a supracondylar fracture of her right arm. Her medical history included resection of the right middle and lower pulmonary lobes due to severe bronchiectasis and recurrent pulmonary infections. Auscultation revealed coarse crackles over both lungs but no wheezing. A recent ventilatory function test showed moderately severe restrictive pulmonary disease.

After careful consideration and informed consent of the child and her parents, it was decided that because of her pulmonary situation the procedure should be performed under regional anesthesia. VIP was chosen because it was painful for the girl to abduct her arm, which would have been necessary for an axillary block. Moreover, neither the axillary nor the interscalene approach is ideally suited for surgery around the elbow (5).

Despite oral premedication with 10 mg of midazolam, the patient reached the holding area in a very anxious state and was crying. Intravenous access was achieved before separation from the parents, and the girl was sedated with propofol before she was taken into the operating room. When routine monitoring was installed, the level of sedation was deepened, and VIP was performed exactly at the midpoint between the sternal notch and the anterior edge of the acromion (length, 12 cm) using the same landmarks as in adults (1,2). Because VIP blockade has been published mainly in adult cases, additional sonography of the infraclavicular region was used (Fig. 1) to verify the relationship between the brachial plexus and the pleura.

The patient reacted purposefully to skin infiltration with 2 mL of mepivacaine 1% but did not move during insertion of the 24-gauge short bevel unipolar stimulator needle (Pajunk[®], Geisingen, Germany) or during actual nerve stimulation. At a depth of 1.5 cm from the skin, a motor response of the thumb and first digit were elicited with a current of 0.35 mA at a stimulus duration of 0.1 ms. Eighteen mL of mepivacaine 1.5% were injected, and complete anesthesia of the arm was achieved within 10 min. Surgery lasted for approximately 1 h and was conducted uneventfully while the girl was kept

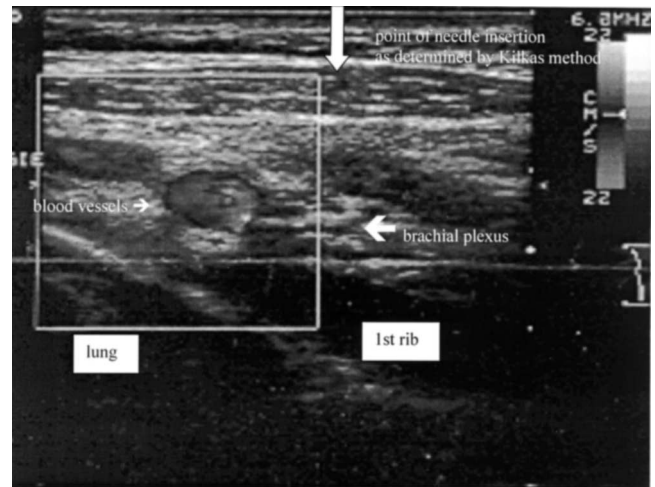


Figure 1. Sonography of the infraclavicular region.

lightly sedated with incremental IV boluses of propofol. No airway intervention or additional oxygen was required. At the end of the procedure, the patient was fully awake, pain free, and was transferred to the PACU. The postoperative course was uncomplicated, and the girl was discharged home 3 days later.

We conclude that brachial plexus blockade using the VIP may be an option for regional anesthesia not only in adults, but also in selected pediatric patients.

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