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Ultrasound-guided bilateral transversus abdominis plane block in a 2-month-old infant

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To the editor: We want to report the case of a 2.5-kg, 2-month-old preterm female infant with jejunal atresia in whom bilateral ultrasound-guided transversus abdominis plane (TAP) block was performed for postoperative analgesia.

After the induction of general anesthesia and intubation, anesthesia was maintained with sevoflurane and 60% nitrous oxide in oxygen, without opioid. A transverse incision just above the umbilicus was performed for resection and anastomosis of the jejunum. The operation lasted about 2.5 h. At the end of surgery the abdominal wall was cleaned with antiseptic solution. A linear ultrasound probe (10- to 18-MHz linear probe; Esaote, Florence, Italy) was covered with a sterile glove, and the probe was positioned on the abdominal wall cephalad to the iliac crest and caudal to the costal margin. The initial image was optimized by sliding anteriorly-posteriorly, tilting both in a cephalad-caudal direction until the different layers of the abdominal wall from above downwards [1]—skin, subcutaneous tissue and fat, external oblique muscle, internal oblique muscle, transversus abdominis muscle, and peritoneum—were clearly imaged. A 22-G, 50-mm insulated needle (Pajunk, Geisingen Germany) was advanced anterior to posterior using an in-plane technique (Fig. 1). After a test dose of 0.5 ml of local anesthetic solution (0.1% levobupivacaine) was administered to confirm correct needle tip placement in the plane between the internal oblique and the transversus abdominis muscles, 1 ml of 0.1% levobupivacaine solution was administered under ultrasound real-time guidance. We observed local anesthetic spread between the internal oblique and transverse abdominis muscles. The same procedure was repeated on the opposite side.

The patient woke up easily and was comfortable. In the neonatal intensive care unit (NICU), her pain was evaluated with the neonatal/infant pain scale (NIPS) [2]. She required no further analgesic medication for the ensuing 15 h. Because the pain score was above 3 at 15 h after the operation, analgesia was provided with a paracetamol suppository.

The TAP block, which was first described in 2001 by Rafi [3], involves the injection of local anesthetic through the triangle of Petit into the TAP between the transversus abdominis and the internal oblique muscles. The injection targets the nerves of the anterolateral abdominal wall. In this plane, the spread of local anesthetic solution is controversial.

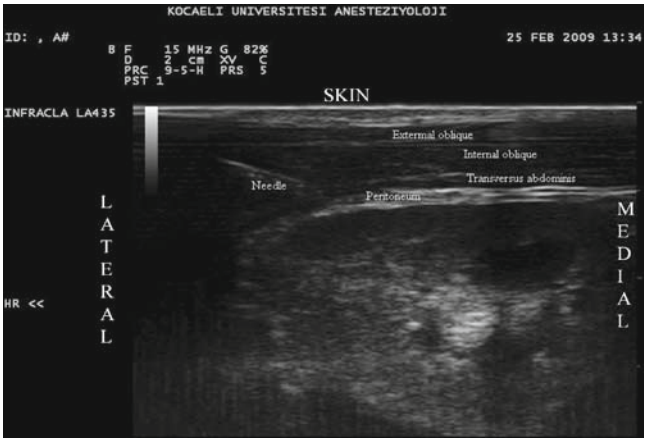

Fig. 1. Ultrasonographic view of the transversus abdominis plane block in a 2-month-old infant (left side)

Although Tran et al. [1] have stated that TAP injection cephalad to the iliac crest is likely to involve the T10-L1 nerve roots, another study in adults has shown that the TAP block can provide blockade of the lower six thoracic and first lumbar spinal nerves via a single injection [4]. Using an ultrasound-guided technique, the needle path can be seen in-plane with the ultrasound probe, which aids accuracy and safety.

The TAP block provides effective pain relief during both the intraoperative period and the postoperative period after abdominal surgery. The TAP block under ultrasound guidance is easy to perform, provides consistent analgesia, and has displayed a good safety profile [4,5].

In conclusion, the TAP block is a relatively new block, but it seems that it is a promising block in infants for postoperative analgesia. Although TAP block in an infant has been described earlier [6], we have reported—to the best of our knowledge—the first description of its successful bilateral use in an infant.

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