

## LETTERS TO THE EDITOR

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## The effectiveness of clavipectoral fascia plane block for analgesia after clavicle surgery: a report of five cases

Clavicle fracture is common in men and children after a direct fall on shoulder during sport activity such as cycling or an injury during a traffic accident.<sup>1</sup> The pain after clavicle fracture surgery may be managed with combined superficial cervical plexus-interscalene block and recently clavipectoral fascia plane block (CPB).<sup>1-3</sup> In the literature, data about CPB is so limited (just three case reports), however it seems a good alternative to brachial plexus block for pain management after clavicle fracture.<sup>3-5</sup> In this case series we wanted to report the effectiveness of CPB being performed in five patients underwent clavicle fracture surgery. This study was approved by the Istanbul Medipol University Ethics and Research Committee.

We performed an ultrasound guided superficial cervical plexus-clavipectoral fascia plane block at the end of surgery in five ASA physical status I male patients aged between 18-37 years scheduled for clavicle fracture surgery. Written informed consent was obtained from all the patients for postoperative block and publication. At the end of the surgery while the patients were in supine position, first the superficial cervical plexus was blocked under ultrasound guidance. Then the linear transducer probe (12 MHz) was placed on the anterior border of the medial third of the clavicle (Figure 1A). A 22-gauge block needle was inserted in a caudal to cephalic direction, the periosteum of the clavicle and the surrounding fascia was visualized (Figure 1B), 20 mL of 0.25% bupivacaine was injected between these two layers. The local anesthetic spread to medial and lateral third of the clavicle was seen (Figure 1C). All patients received IV ibuprofen 800 mg 30 min before the end of the surgery, and were ordered to receive ibuprofen 400 mg every 8 h postoperatively. Their pain was evaluated on a Visual Analogue Scale (VAS) at the post anesthesia care unit and service. Our first patient reported pain (VAS3) at 22 hours postoperatively. While the second patient experienced pain (VAS 4) at 16 hours postoperatively, the third one reported a pain score of VAS 4 at 18 hours. The fourth patient experienced a pain of VAS 2 at 12 hours. The last patient reported pain (VAS 3) at the 16 hours postoperatively. The average length of analgesia provided by CPB was between 12 and 22 hours with VAS Score between two and four.

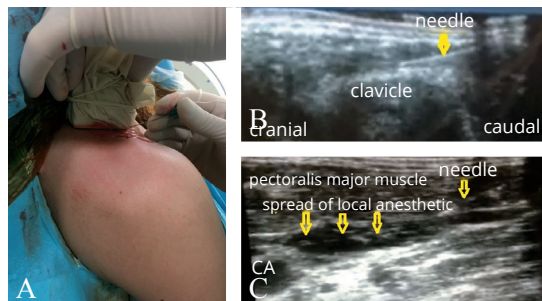


Figure 1.—A) Block performing under aseptic conditions. A high frequency 12 MHz linear US probe with a sterile sheath was placed on anterior border of the medial third of the clavicle. A 22-gauge 50-mm block needle was inserted in a caudal to cephalic direction; B) sonographic anatomy and needle direction; C) spread of local anesthetic. CA: carotid artery.

CPB was defined by Valdes in 2017 firstly.<sup>2</sup> It may be used for postoperative analgesia after clavicle surgery. The clavipectoral fascia covers the clavicular site of the pectoralis major muscle. It provides the potential interfascial space between the clavicle and the pectoralis major muscle.<sup>2-5</sup> In our first case report about CPB, the patient received same mixture and amount of local anesthetic with these five patients, and she experienced pain (VAS 3) at 24<sup>th</sup> h postoperatively.<sup>3</sup> In another case report, Ince *et al* performed CPB at the end of the surgery.<sup>4</sup> Their patient reported pain score of 3, 4, 2 and 3 at postoperative 4, 8, 12, 24 hours respectively. However, the earliest pain score of VAS 3 in our patients was reported at 16<sup>th</sup> h postoperatively. In another case report, Ueshima *et al.* performed CPB in a patient with dual antiplatelet therapy undergoing clavicle surgery.<sup>5</sup> CPB was performed at the beginning of the surgery after anesthesia induction. The patient did not experience pain during the first 48 h after surgery. As seen from these case reports, CPB provide effective analgesia after clavicle surgery. It is also easy to perform. With this advantage and its analgesic effectiveness for clavicle surgery, CPB may be an alternative to interscalene brachial plexus block. However, randomized clinical efficacy trials are needed to investigate the effectiveness of CPB for clavicle fractures and to compare with other brachial plexus techniques.

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## Bilateral continuous erector spinae plane block: an alternative to epidural catheter for major open abdominal surgery

We describe the use of bilateral erector spinae plane (ESP) block with bilateral catheter for perioperative management of pain in a 66 years old man, weight 70 kg and height 175 cm, who required a wedge resection of VI and VII hepatic segments with incision under right rib

enlarged to the left (Figure 1) for a secondary malignant neoplasm.

The patient presented a history of liver failure, chronic obstructive pulmonary disease, obstructive sleep apnea in therapy with positive airway pressure, a previous gastric ulcer and a platelet count was 70,000 U mm<sup>3</sup><sup>-1</sup>. Patient gave written permission for publication of this report.

Platelet count contraindicated the placement of a thoracic epidural analgesia (TEA) so we opted to place, under ultrasound guidance, two bilateral multi-perforated catheters deep into the erector spinae muscle at T5 level at right site and T7 level at left site (Figure 2) before induction of general anesthesia, with intravenous (IV) Propofol 2 mg kg<sup>-1</sup>, Rocuronium 0,6 mg kg<sup>-1</sup>, and Fentanyl 100 mcg, in order to control intraoperative and postoperative pain.

Before the surgical incision, a bolus of Levobupivacaine 0,25% 20 mL at T5 and T7 level was administered through the catheters both at right and left site.

Procedure was completed in 180 minutes, without further request for opioids and local anesthetic bolus, and the patient was extubated in recovery room two hours after the end of the surgery.

The patient received acetaminophen 1 gr iv 60 minutes before the end of surgery and then every eight hours and post-operative pain management included also a programmed intermittent bolus administration of Levobupivacaine 0,25% 14 mL (7 mL at left site and 7 mL at right site) every six hours and a rescue dose of Carbocaine 0,1% 10 mL (5 mL for each site) repeatable at most two times a day.

The catheters remained in position five days and we noticed arterial hypotension and mild bradycardia on the first and second post-operative days.

Patient's NRS pain score never exceeded the value of



Figure 1.—Surgical incision.