

Clavipectoral fascia plane block for analgesia after clavicle surgery[☆]



Bloqueo del plano de la fascia clavipectoral para analgesia tras cirugía de clavícula

To the Editor,

Clavicular fracture is the most common injury of the shoulder girdle, and has an incidence of 35%. It mainly occurs in young men, usually as a result of sports activities or traffic accidents, and the most common fracture occurs in the middle third or diaphysis of the clavicle. Although most such diaphyseal fractures can be treated non-surgically, there is growing evidence that better functional outcomes are achieved with surgical treatment.¹ Pain management, therefore, after clavicular fracture or surgery is very important. Since initial post-fracture pain may not respond to opioids, peripheral nerve blocks may be a useful complement to oral medication. A thorough understanding of the sensory innervation of the peripheral nerve is essential to achieve good analgesia following clavicular fracture or surgery. This innervation is complex, and the supraclavicular, subclavian, long thoracic/suprascapular nerves, alone or together, may be responsible for pain transmission after clavicular fracture and surgery. Superficial cervical plexus block, interscalene block, and combined superficial cervical plexus-interscalene block can be used to anaesthetise the clavicle.² The superficial cervical block can also be combined with the clavipectoral fascia plane block. The clavipectoral fascia is a thick fascia located on the clavicular portion of the pectoralis major muscle that extends superior, medial and superolateral from the clavicle, the costochondral joints, and the coracoid process, respectively. It suspends the floor of the axilla and protects the neurovascular structure, occupying the space between the clavicle and the pectoralis minor muscle. The clavipectoral fascia completely surrounds the clavicle, and the nerve endings of the clavicle penetrate this fascia.³

The clavipectoral fascia plane block was first described by Valdés in 2017.⁴ Following this, Roqués et al. presented the combined superficial cervical plexus-clavipectoral fascia plane block for clavicular surgery at the 44th Annual Regional Anesthesiology and Acute Pain Medicine Meeting in 2019.⁵ In their presentation, they describe injecting 10–50 ml of long-acting local anaesthetic into the fascia of the medial and lateral thirds, towards the clavicle fracture. They reported that this technique provided good quality anaesthesia, and also gave prolonged analgesia for fractures of the medial third of the clavicle.

We present a case of successful postoperative pain management using superficial cervical plexus-clavipectoral fascia plane block in a 47-year-old woman, ASA II (hypothyroidism), weight 63 kg, height 165 cm, who underwent right clavicle fracture surgery under general anaesthesia. The patient read the manuscript and gave her consent for publication. After obtaining the patient's consent for postoperative nerve block, we performed an ultrasound-guided superficial cervical plexus-clavipectoral fascia plane block of the clavipectoral fascia at the end of surgery. The procedure was performed under aseptic conditions using a GE Vivid Q[®] ultrasound device (GE Healthcare, USA) with a 12 MHz linear transducer. The patient was placed supine, with her head turned slightly to the left. After blocking the superficial cervical plexus, the ultrasound probe was placed on the anterior superior border of the medial third of the clavicle, and a 22 gauge needle was inserted in a caudal-cranial direction. After visualizing the clavicle and clavipectoral fascia, and performing aspiration to rule out intravascular puncture, 2 ml of saline was injected to confirm correct positioning, and then 20 ml of 0.25% bupivacaine was deposited between the periosteum and the clavipectoral fascia (Fig. 1). IV ibuprofen 800 mg was administered 30 min before the end of surgery for multimodal postoperative analgesia. The patient was extubated and transferred to the post-anaesthesia care unit (PACU), where her pain was evaluated on a visual analogue scale (VAS). Pain was rated at 0, so no analgesia was administered. After obtaining a modified Aldrete score of ≥ 9 , she was discharged from the PACU, and received ibuprofen 400 mg every 8 h. The maximum VAS score reported by the patient was 2 at rest, due to headache. She did not experience pain at the surgical site until 24 h after surgery, when she reported a pain score of VAS 3, which we treated with multimodal analgesia (NSAIDs and tramadol). Roqués et al. used this combined block (superficial cervical plexus-clavipectoral fascia plane block) for anaesthesia in clavicular fracture, injecting local anaesthetic into the medial and lateral thirds of the affected clavicle. When the patient is in the beach-chair position, we usually prefer general anaesthesia; for this reason we performed the block for postoperative analgesia, and since the surgery encompassed the entire clavicle we did not perform 2 punctures for the nerve block. We, like Roqués et al., observed that superficial cervical plexus-clavipectoral fascia plane block is a simple, safe procedure that provides prolonged analgesia (24 h) for fractures of the medial third of the clavicle. We believe that this nerve block is suitable not only for anaesthesia and postoperative pain management, but also for emergency pain management in patients with acute clavicular fracture, and for biopsies or curettage of clavicle bone tumours. Further randomised trials are needed to compare the effectiveness of the clavipectoral fascia plane block with other currently used nerve blocks.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

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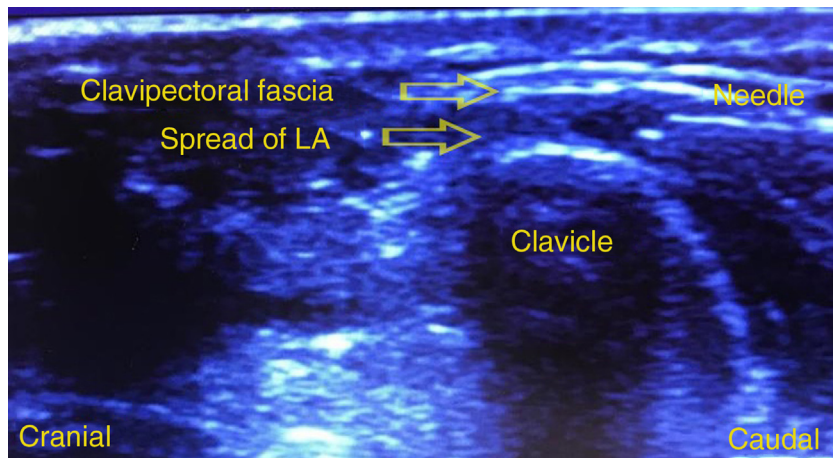


Figure 1 Ultrasound view of the clavipectoral fascia plane block. Observe the spread of local anaesthetic between the clavicle and the clavipectoral fascia plane.

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