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Case report

Bilateral ultrasound-guided supraclavicular block[☆]

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ABSTRACT

Analgesic management in patients with bilateral trauma to the shoulder or the proximal third of the arm is difficult. The multimodal strategy based on the administration of local analgesics to the brachial plexus appears to be the most effective; however, there are risks associated with bilateral blocks, including phrenic nerve palsy, toxicity due to local anesthetics, and bilateral pneumothorax. These risks may be diminished using an ultrasound-guided supraclavicular approach to the brachial plexus.

This paper describes the management of a patient with bilateral injury to the shoulder and the proximal third of the humerus. The patient is taken to bilateral humeral fixation surgery and develops severe post-operative pain which does not respond to high-dose opioids and anti-inflammatory agents. He is managed initially with bilateral ultrasound-guided supraclavicular block using a low volume of a local anesthetic followed by continuous administration of bupivacaine. Pain assessment was 2/10 at 24 h and 3/10 at 48 h.

We concluded that bilateral supraclavicular blockade is an option in the acute management of pain after surgery to the shoulder and the proximal third of the humerus. Continuous administration of local anesthetics to the brachial plexus helps maintain the analgesic response.

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Bloqueo supraclavicular bilateral con ecografía

RESUMEN

El manejo analgésico de los pacientes con trauma bilateral de hombro o tercio proximal del brazo es difícil. La estrategia multimodal basada en administración de anestésicos locales en el plexo braquial parece ser la más efectiva, pero hacer bloqueos bilaterales tiene riesgos asociados, como son: la parálisis del nervio frénico, la toxicidad por anestésicos locales y el neumotórax bilateral. Estos pueden ser disminuidos con una aproximación supraclavicular al plexo braquial y el uso de ultrasonografía.

Palabras clave:

Bloqueo nervioso

Analgesia

Plexo braquial

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Describimos el manejo de un paciente con trauma bilateral de hombro y tercio proximal de húmero, quien es llevado a cirugía de osteosíntesis bilateral de húmero y presenta dolor postoperatorio severo que no responde a dosis altas de opiáceos y antiinflamatorios. Es manejado inicialmente con bloqueo supraclavicular bilateral guiado por ecografía con volumen bajo de anestésico local y posteriormente administración continua de bupivacaína, con una valoración del dolor de 2/10 a las 24 h y 3/10 a las 48 h.

Concluimos que el bloqueo supraclavicular bilateral es una opción para el manejo del dolor agudo en cirugía de hombro y tercio proximal de húmero. La administración continua de anestésicos locales al plexo braquial contribuye a mantener la respuesta analgésica.

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Case description

Thirty-five year-old male patient complaining of pain in both shoulders and functional impairment of one day of duration. X-rays show a fracture dislocation of the left shoulder and dislocation of the right shoulder. The patient is taken to surgery for closed reduction of both shoulders. A left inter-scalene block is performed for post-operative analgesia, using 15 ml of 0.375% levobupivacaine.

Two days later the patient is taken to surgery for bilateral humeral fixation and repair of the left rotator cuff (see Fig. 1).

During the post-operative period, the patient developed severe pain, which did not improve despite high-dose opioids and NSAIDs. It is decided to perform a bilateral supraclavicular block (see Fig. 2) using 10 cc of 0.375% levobupivacaine in each side, achieving pain control during a 12-h period.

Following the two blocks, the patient does not show evidence of respiratory distress or desaturation at any time. No abnormality is found in the chest X-ray.

After 12 h, the pain came back and was assessed as 10/10 on the verbal numerical scale, particularly in the left shoulder. Consequently, it was decided to place a left supraclavicular catheter for continuous infusion of 0.1% bupivacaine at a rate of 5 cc per hour (see Fig. 3), achieving good pain control assessed as 2/10 at 24 h and 3/10 at 48 h (see Fig. 4).

Discussion

Shoulder surgery is associated with significant post-operative pain requiring the use of high-dose opioids that favor the

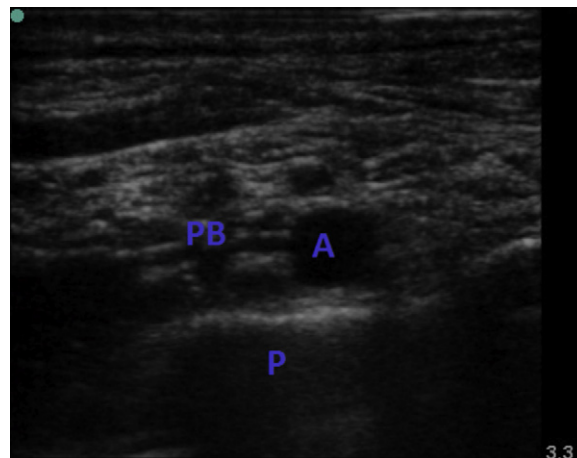


Fig. 2 – Supraclavicular block. PB: brachial plexus; A: artery; P: pleura.

occurrence of adverse effects such as vomiting, nausea, pruritus, respiratory depression and urinary retention.¹

The best strategy for the control of post-operative pain in shoulder surgery is a multimodal approach consisting of the concomitant use of NSAIDs, opioids and local anesthetics, either through a nerve block or infiltration into the wound.²

Peripheral blocks with local anesthetics used in this type of surgery include: interscalene, subacromial, intra-articular, suprascapular and axillary nerve blocks.^{4,3} The subacromial infiltration is performed by the surgeon before closing the surgical wound, by filling the subacromial space with 20–50 cc of local anesthetic. This simple technique is a good alternative to

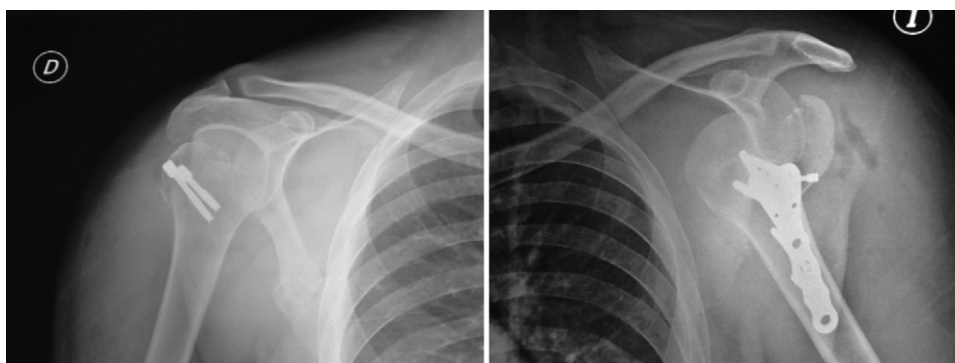


Fig. 1 – Shoulder X-ray. D: right; I: left.

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