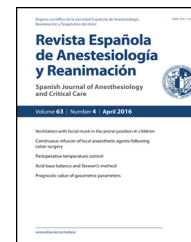




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CASE REPORT

Continuous erector spinae plane block for analgesia in pediatric thoracic surgery: A case report[☆]

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KEYWORDS

Continuous erector spinae plane block;
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Abstract Erector spinae plane block has been recently described and it appears as a very promising regional analgesia technique. We report the first continuous erector spinae plane block performed in a pediatric patient for thoracic surgery.

A 15-month-old boy, diagnosed with a paracardiac teratoma was scheduled for a tumor resection with a thoracotomy approach. After general anesthesia induction, a continuous erector spinae plane block at T5 level was performed with ropivacaine 0.2%. After surgery, a continuous thoracic interfascial infusion of ropivacaine 0.1% along with multimodal rescue analgesia was initiated.

The patient tolerated the procedure well with no complications. It appears that this is a good alternative to thoracic epidural and paravertebral block, given the simple reproducibility and potential greater safety of this technique.

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PALABRAS CLAVE

Bloqueo continuo en el plano del músculo erector del espinal;
Anestesia regional;
Anestesia pediátrica

Bloqueo continuo en el plano del músculo erector del espinal para analgesia en cirugía torácica pediátrica: informe de un caso

Resumen El bloqueo en el plano del músculo erector del espinal ha sido recientemente descrito, y parece ser una técnica de analgesia regional muy prometedora. Reportamos el primer bloqueo continuo en el plano del músculo erector del espinal realizado en un paciente pediátrico sometido a cirugía torácica.

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Se trata de un niño de 15 meses con un teratoma paracardiaco programado para resección tumoral por toracotomía. Después de la inducción de anestesia general se practicó un bloqueo continuo en el plano del músculo erector del espinal a nivel de T5 con ropivacaína 0,2%. Tras la cirugía se inició una perfusión torácica interfascia de ropivacaína 0,1% y analgesia multimodal.

El paciente toleró bien el procedimiento sin complicaciones. Parece que esta es una buena alternativa a la epidural torácica y el bloqueo paravertebral, dada la simple reproducibilidad y la mayor seguridad potencial de esta técnica.

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Introduction

The erector spinae plane block (ESP) is an emerging ultrasound-guided deep plane interfascial block that has been shown to provide thoracic and abdominal analgesia.^{1,2} When injected at the T5 transverse process level, the local anesthetic spreads anteriorly through the thoracolumbar fascia and reaches the ventral and dorsal rami of the spinal nerves and posteriorly to the gray and white rami communicantes of the sympathetic chain, providing a C7 to T8 sensitive block.¹ Although it was first described as a chronic pain block, there are increasingly reports about its use in postoperative acute pain.¹⁻⁵

First-line regional analgesia for thoracotomy procedures includes thoracic epidural or paravertebral blocks.⁶ The novel erector spinae block may be a valid alternative.

We report the first description of a continuous erector spinae muscle block performed for pediatric thoracic surgery.

Case report

A 15-month-old boy, weighing 11 kg, American Society of Anesthesiologists (ASA) physical status III, with a paracardiac thoracic trigeminal teratoma (55 × 44 × 44 mm) was scheduled for tumor resection with a thoracotomy approach. Laboratory findings were within normal range and there was no respiratory compromise at the time of surgery. An MRI revealed an ovulated formation with adipose, soft tissue and cystic components in the right hemithorax, measuring 55 × 44 × 44 mm, globally well circumscribed, in close contact with the mediastinal pleura. The anesthetic procedures were explained and parental informed consent for the anesthetic procedure was obtained prior to surgery. Later, in the post-operative period, we obtained parental consent for this case report.

After arriving in the operating room, general anesthesia was induced with propofol (3 mg/kg), fentanyl (4.5 µg/kg) and cisatracurium (0.2 mg/kg), and an orotracheal tube was placed by direct laryngoscopy, and bilateral ventilation confirmed by auscultation. For the block placement, the patient was placed in left lateral decubitus position. A high-frequency (12 MHz) linear GE[®] ultrasound transducer was placed in a parasagittal orientation, 2 cm lateral to the



Figure 1 Patient in left lateral decubitus with landmarking marks. T5–T5 spinous process; T7–T7 spinous process; arrow–tip of the scapula; A–site for probe placement in a longitudinal parasagittal orientation.

T5 spinous process (Fig. 1). After identifying the three muscular layers (trapezius, rhomboid major and erector spinae muscles), a 20-gauge 50-mm Tuohy needle (BBraun[®]) was inserted in a cephalad to caudal direction until the tip made contact with the T5 transverse process (Fig. 2a), in the fascial plane on the deep aspect of erector spinae muscle, as evidenced by visible linear spread of anesthetic between the surface of the transverse process and the erector spinae muscle. A total of 5 ml (0.45 ml/kg) of ropivacaine 0.2% was injected,⁷ followed by the placement of a 22-gauge catheter under real-time ultrasound guidance 4 cm beyond the needle tip (Fig. 2b), and the catheter skin exit-site was secured with a topical skin adhesive (liquiband flex[®]). No local analgesic adjuncts were administered during surgery. Anesthesia was maintained with sevoflurane (MAC 1.2) in an oxygen–air mixture (FiO₂ 0.40), and a multimodal analgesia regimen was achieved with 7.5 mg/kg of intravenous acetaminophen. The surgical procedure lasted 90 minutes

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