A Continuous Erector Spinae Plane Block in a Pediatric Patient: A Case Report

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Introduction

The guided ultrasound Erector Spinae Plane (ESP) block is a new, simple and safe technique of regional anesthesia¹.

Case Report

A four-year-old girl (18 kg) diagnosed with empyema was admitted for a right thoracotomy. The patient had a previous INR of 1.7 therefore neuraxial techniques were avoided. General anesthesia was induced with IV lidocaine, fentanyl, propofol and rocuronium. After endotracheal intubation, the patient was placed in a left lateral position and the ESP block was performed using a high-frequency (13-6MHz) linear ultrasound transducer (Mturbo, Sonosite) in a longitudinal orientation, 1 cm lateral to the T4 spinous process. A 50-mm needle (Visioplex® – Bevel 30°) was inserted in-plane and in a cranial-to-caudal direction. The block was administered by injection of 0.4% ropivacaine 15mL in total, followed by the insertion of a catheter and a continuous infusion of 0.1% ropivacaine solution combined with clonidine 1mcg/mL at a rate of 6 mL/h using an elastomeric pump. Additional analgesia was supplemented with dipyrone and ketoprofen.

Discussion

The ESP Block is a regional anesthesia technique recently described as a simple and safe technique¹. The ultrasound-guided ESP Block involves local anesthetic injection into a paraspinal tissue plane distant from the pleura and neuraxis². Consequently, the ESP Block can anesthetize the ventral and dorsal rami of the spinal nerve roots and the rami communicants that transmit autonomic fibers, leading to somatic and visceral analgesia.

This method was initially described for thoracic analgesia when performed at the T5 process. Additionally, recent data indicates that at a lower vertebral level such as T7, it can provide effective and extensive abdominal analgesia. Finally, the relatively superficial location of the ESP Block minimizes concerns with clotting disorders³.

Learning point

To the best of our knowledge, there are only a few cases reporting a continuous ESP block in a pediatric patient. Future investigations could bring evidence to its clinical application for postoperative analgesia in pediatric anesthesia.

Acknowledgment

Written informed consent was obtained from the patient's legal guardian.

Figure 1: The Erector Spinae Block, A Novel Analgesic Technique in Thoracic Neuropathic Pain (Forero M., et al, 2016)

¹ Forero M., et al: The Erector Spinae Block, A Novel Analgesic Technique in Thoracic Neuropathic Pain, Reg Anesth Pain Med.2016;41

² Forero M.,et al: The Erector Spinae (ESP) Block in the Management of Postthoracotomy Pain Syndrome, SJPain.2017; 596

³ Chin J.K., et al: The Erector Spinae Block Provides Visceral Abdominal Analgesia in Bariatric Surgery, Reg Anesth Pain Med. 2017; 42