



## Case Report

## High-thoracic ultrasound-guided erector spinae plane block for acute herpes zoster pain management in emergency department

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## ARTICLE INFO

## Article history:

Received 9 October 2018

Accepted 15 October 2018

## ABSTRACT

Herpes zoster is a painful, eruptive, viral condition occurring with reactivation in immunosuppressed individuals. The selection of an effective analgesic method in the acute phase of herpes zoster can decrease the incidence of postherpetic neuralgia by reducing neural sensitization. The erector spinae plane block has been reported to provide diffuse and effective analgesia in the cervical, thoracic, and lumbar regions. We report an effective decrease in pain with the application of the high-thoracic erector spinae plane block in the emergency department in a patient with herpes zoster pain in the cervicothoracic and shoulder region.

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## 1. Introduction

Herpes zoster emerges with reactivation, usually at more advanced ages and particularly in immunosuppressed individuals. The herpes zoster virus remains latent in the medulla spinalis dorsal root ganglion cells. When immunity is suppressed, the virus emerges with a manifestation characterized by pain and vesicles in the dermatome where innervation occurs. The first symptom of herpes zoster is pain and paresthesia. Zona eruptions may be seen days or weeks after onset of pain [1]. The basic aim in the treatment of herpes zoster is to inhibit viral replication, to prevent complications by accelerating healing, and pain relief [2]. Postherpetic neuralgia (PHN) that does not respond to analgesics, corticosteroids, antidepressants, anticonvulsants, and opioids administered orally or intravenously (iv), generally together with antiviral therapy, may develop, with a reported incidence of 70%. With the use of ultrasounds in daily regional anesthesia practice, plane blocks have also become popular in recent years. The serratus plane block, first used for rib fractures in the emergency department [3], and the erector spinae plane (ESP) block [4] have been described as effective analgesic techniques. Effective use of the ESP block has also been reported in the emergency department in lumbar transverse process fractures and in a burned patient [5,6]. We describe our successful experience with the high-thoracic ESP block for acute herpes zoster pain involving the cervicothoracic and shoulder region.

## 2. Case

A 72-year-old male patient with diabetes and hypertension presented to our emergency department with neck and back pain persisting for the previous five days. The patient had previously presented to the dermatology clinic with these symptoms. Herpes zoster had been diagnosed and he had been prescribed oral antiviral, gabapentin and analgesics. The pain had worsened, the patient presented to the dermatology clinic, and oral opioid was prescribed. Due to persistence of severe pain despite these oral opioids, iv narcotics were administered in the emergency department. Physical examination revealed zona eruptions along a dermatome extending from the level of the left second posterolateral cervical vertebra to the first thoracic vertebra, and as far as the head of the shoulder and 1/3 of the proximal left humerus (Fig. 1). We decided to perform ultrasound-guided ESP block from the T2/3 level. Transvers process was visualized 3 cm lateral to midline at the level of T2 vertebra with longitudinal parasagittal orientation. Trapezius muscle, rhomboideus muscle and erector spinae muscle were visualized respectively. After touching transvers process of T2 by needle using an in-plane approach on the caudal-cranial route, the needle was directed between the transverse process and the erector spinae muscle. Two milliliter saline solution was injected to confirmation. The procedure was concluded with the injection of 10 ml 2% lidocaine, 10 ml 0.25% bupivacaine and 40 mg methylprednisolone acetate to the same plane (Fig. 2). The patient's pre-procedural visual analogue scale (VAS) of 10 decreased to 0 within seconds after the ESP block. The dermatomal area extended from C3 to T6 at the pinprick test. VAS scores were 0 at 15 and 30 min following the procedure. The patient was invited to follow-up the next day and was assessed using

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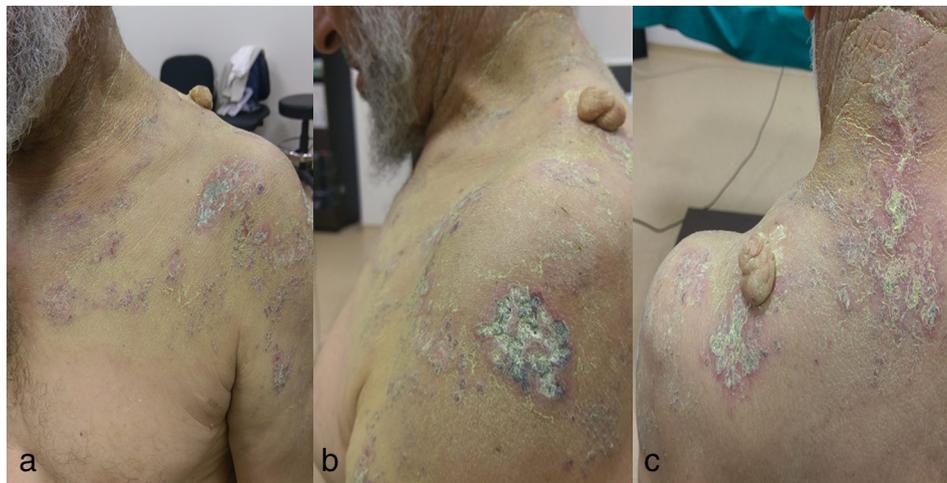


Fig. 1. Severe painful vesicles of patient anterior (a), lateral (b) and posterior (c) view.

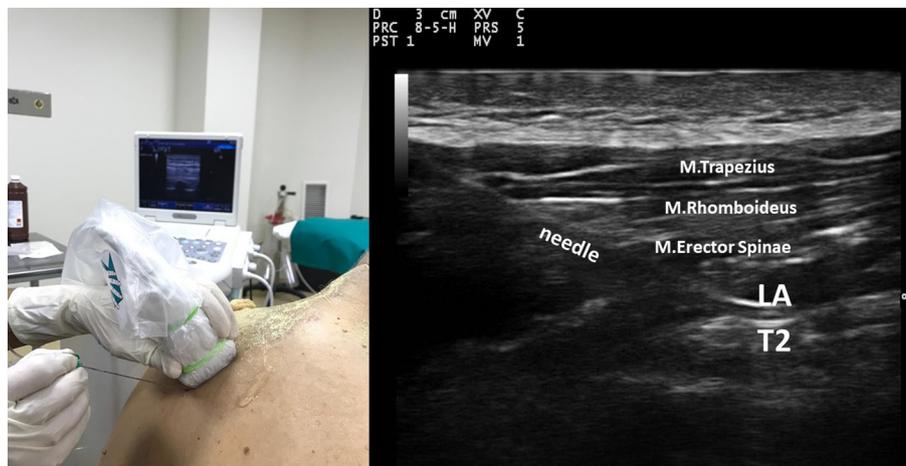


Fig. 2. Patient and ultrasound set up for ESP block and ultrasound image of ESP block.

the VAS, again with a score of 0. The patient's VAS score did not exceed 3 at follow-ups in the first month.

### 3. Discussion

The ESP, first described for the thoracic region by Forero [7], has become increasingly popular and has also begun being used for different indications in different body regions. The principal factors in the popularity of this block are a lower complication rate compared to its variants (such as the paravertebral block), and the easy sonographic identification of landmarks. These characteristics mean that it will in all likelihood be widely used in the future, not just for anesthetists, but also for emergency physicians. Despite the lack of sufficient randomized, controlled studies, the effectiveness of the block has been shown in laparoscopic cholecystectomy and breast surgery [8,9]. High-thoracic ESP has been reported to be rather successful in carotid endarterectomy [10], for establishing postoperative analgesia, and for relieving pain in a burn patient [6]. We also thought, based on the extensive dermatomal areas in these cases, that high-thoracic ESP might provide effective analgesia in a region compatible with our patient's lesions. Effective analgesia was established between the C3 and T6 dermatomes in the post-procedural period. To the best of our knowledge, although high-thoracic ESP has been described for herpes zoster pain in the lumbar [11] and thoracic [12] regions, this is the first time it has been applied for the cervical region.

In conclusion, ultrasonography-guided high-thoracic ESP block may be a safe and effective method for overcoming acute pain associated with cervicothoracic lesions deriving from herpes zoster. However, randomized, controlled studies are now needed to determine its optimal volume, application level, local anesthetic concentration, and superiority over other treatment methods.

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