



Case Report

Priapism following erector spinae plane block for the treatment of a complex regional pain syndrome

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ARTICLE INFO

Article history:

Received 27 October 2018

Received in revised form 6 January 2019

Accepted 11 January 2019

ABSTRACT

Erector spinae plane block (ESPB) is a novel block where local anesthetic is deposited between the erector spinae muscle and the underlying transverse process. Safety of this technique is emphasized in the majority of reports, but with a continued increase of its use, the number of related complications and side effects is likely to expand. We report the case of a patient treated with ESPB for a complex regional pain syndrome, complicated by the development of a priapism.

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1. Introduction

The erector spinae plane block (ESPB) has gained widespread interest since its first description [1]. Considered a safe method as local anesthetic is injected between the erector spinae muscle and underlying transverse process, reports of unintended consequences are few as yet. Here, we describe the case of a patient with a complex regional pain syndrome in which ESPB was effective to relieve symptoms but was marked by the development of a transient priapism.

2. Case presentation

A written informed consent was obtained from the patient to publish this observation. A 42-year-old male (80 kg) diagnosed one month previously with complex regional pain syndrome (CRPS) type-1 in the right ankle and foot based on the International Association of the Study of Pain (IASP) Budapest Criteria, presented to emergency department (ED) with burning pain in his entire right lower extremity that he described as “the most painful experience in his whole life”. He was under aggressive physical therapy and multimodal medication treatment including non-steroidal anti-inflammatory drugs, neuroleptics, and antidepressive medications but all with limited effect.

His physical examination was remarkable for warm right-foot with erythema and excessive sweating both on inspection and palpation. He was careful to avoid contact with his bedsheets or clothes and presented allodynic pain response to soft touch and hyperalgesia over the whole foot. He rated his pain at 9/10 on the verbal rating scale (VRS).

The patient did not have any visible or reproducible involuntary motor movement.

As the lumbar sympathetic block was not available due to technical difficulties in our institution, we proposed to perform an alternative technique of ESPB.

Following informed consent, ultrasound-guided ESPB was performed in the prone position using a 9–12 MHz linear transducer (LOGIQe ®; GE Healthcare, Wauwatosa, WI, USA) under sterile conditions. The level of the block was the transverse process of L4. The transducer was placed in a longitudinal parasagittal orientation 3 cm lateral to L4 spinous process. The erector spinae muscle was identified superficial to the tip of L4 transverse process. The patient's skin was anesthetized with 2% lidocaine. A 22-gauge 10-cm needle (Pajunk Sonoplex stim ®, Geisingen, Germany) was inserted using an in-plane superior-to-inferior approach to place the tip into the fascial plane on the deep aspect of erector spinae muscle. The location of the needle tip was confirmed by visible fluid spread lifting erector spinae muscle off the bony shadow of the transverse process. A total of 30 mL of bupivacaine 0.5% and lidocaine 2% mixture was injected. The procedure was well tolerated and no complications were encountered.

Approximately 10 min following the block procedure, the VRS score of the patient was reduced to 2 with movement and 0 in passive condition with complete resolution of the right-foot symptoms.

One hour later, the patient started to experience a painless erection. Physical exam revealed a fully erect penis with rigid corporeal bodies. The patient's vital signs were stable and the remainder of his general exam was normal. He was evaluated by a local urologist and declined to undergo a cavernosal blood gas analysis to differentiate high and low-flow priapism. Finally, he was maintained with bed rest and ice pack. Gradual spontaneous detumescence occurred over the following three hours. Over the course of the day, the penis remained flaccid and the patient free of pain and able to walk freely. He was discharged

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home the same day and was instructed to report to the ED if he had any warning sign.

3. Discussion

This case describes the benefits of using ESPB in the treatment of CRPS and its potential to be a suitable alternative to the lumbar plexus block. Chung et al. have reported a similar result [2]. However, this case reports an unusual complication as our patient had several hours of priapism. The penis receives its innervation from sympathetic, parasympathetic, and pudendal nerves. Parasympathetic innervation to the penis causes erection through vasodilation and thus engorgement while sympathetic innervation causes vasoconstriction leading to flaccidity. Local anesthetics (LA) in ESPB spread not only craniocaudally but also penetrate anteriorly through the intertransverse connective tissue gaining indirect access to the paravertebral space where it can potentially block the dorsal and ventral rami of spinal nerves [1] as well as sympathetic nerve fibers [3]. In our case, the local anesthetic likely crossed the midline to inadvertently cause a bilateral sympathetic block with unopposed parasympathetic signaling. The priapism lasted only a few hours, indicating that only a small amount of LA crossed the midline.

With continued increase in the use of ESPB, the number of patients presenting with complications is likely to increase. This case adds to the body of literature a possible but transient and benign side effect of ESPB. The optimal concentration and volume of LA needed to provide

successful ESPB is yet unknown. Further clinical studies to clarify this subject would be useful to the future practitioner to avoid such side effect.

Notes

The authors declare no conflicts of interest.

Funding

None.

Acknowledgements

None.

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