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Psoas compartment block for treatment of motor weakness and pain following herpes zoster

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Reactivation of the latent varicella zoster virus in the sensory ganglion causes herpes zoster (HZ). Its characteristic symptom is a painful rash in the involved dermatome. HZ-induced motor weakness is rare and is usually resolved within one year of the onset, but some patients permanently experience motor dysfunction. Epidural steroid administration, with antiviral therapy, can be effective in treating pain from HZ and preventing postherpetic neuralgia. But an epidural block is contraindicated in patients receiving thromboprophylaxis. A psoas compartment block (PCB) provides equivalent analgesic efficacy with significantly low incidence of complication, compared to an epidural block. A 68 year old male patient recieving thromboprophylaxis presented with motor weakness following painful rash in his left L4 dermatome. Ten days before presentation, herpetic rash occurred on his left leg. We performed PCB with a steroid and local anesthetic, which successfully and safely alleviated the pain and motor weakness from HZ. (Korean J Pain 2017; 30: 62-5)

Key Words: Compartment block; Herpes zoster; Motor weakness; Pain; Postherpetic neuralgia; Psoas; Thromboprophylaxis.

Acute herpes zoster (HZ) occurs by reactivation of the latent endogenous varicella zoster virus (VZV) which usually involves the sensory ganglion in the CNS. Therefore, its characteristic symptom is a painful erythematous maculopapular rash in the involved dermatome [1]. Involvement of motor neurons is rare but occurs, leading to segmental motor paresis [2-4]. Most patients with zoster motor weakness will recover within one year of the onset, but 20% of the patients permanently experience weakness [3]. It was reported that epidural administration of a steroid via an interlaminar or transforaminal epidural block, in combination with antiviral treatment, can be effective in treating HZ pain and reducing post-herpetic neuralgia (PHN) [1,5]. However, epidural blocks are associated with fatal complications such as epidural hematomas, resulting in nerve damage [6,7]. A psoas compartment block (PCB) provides similar analgesic efficacy with favorable adverse effect profiles, compared to an epidural block [8].

We present an elderly male patient with motor weakness following painful HZ with anticoagulant therapy. His

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motor weakness and pain from HZ was successfully treated with a fluoroscopic guided PCB using a steroid and local anesthetics. With the approval of our Institutional Review Board for the publication of this report, consent was obtained from the patient.

CASE REPORT

A 68-year-old man was referred to our pain management center from the department of neurology with motor weakness of the left leg following painful herpetic rash on his left lower extremity. Ten days before presentation, a herpetic rash occurred in his left L4 dermatome and 2 days after the onset of vesicular rash his diagnosis of HZ was made by a neurologist. He was managed with famciclovir 250 mg three times daily, tramadol 150 mg once daily, and pregabalin 75 mg twice daily. Even with these medications, his pain was rated as 7 on the visual analogue score (VAS) from 0 (no pain) to 10 (worst pain imaginable). He refused to take opioids due to side effects associated with opioids such as nausea and vomiting. Nine days after the onset of the rash, he noticed progressive motor weakness of his left lower limb. An MRI scan of his brain and lumbar spine was performed to explore the causes of weakness in his left lower extremity by the neurologist. But in the MRI scan there were no abnormalities. The neurological examination showed that the muscle strength of his left knee extension was 3/5 using the Medical Research Council muscle strength grading system [9].

One year earlier he had been diagnosed with hypertension. Two month previous, he had received a cardiac stent insertion due to myocardial infarction and he was taking warfarin 2 mg and aspirin 100 mg once a day for prevention of thrombosis. His international normalized ratio was 2.2. On physical examination, herpetic rash was localized to his left L4 dermatome (**Fig. 1**). He suffered from intermittent, spontaneous, sore and throbbing pain over the left L4 dermatome, which was provoked by brushing. PCB was done with 0.5% lidocaine 15 ml and triamcinolone 40 mg under fluoroscopic guidance at the L4 transverse level (**Fig. 2**). The pain disappeared 3 days after the PCB. In addition, 6 days after the PCB, the motor weakness of his knee extension greatly improved and 12 days after the PCB the motor weakness was completely resolved. He remained symptom free at a 3 month follow-up.

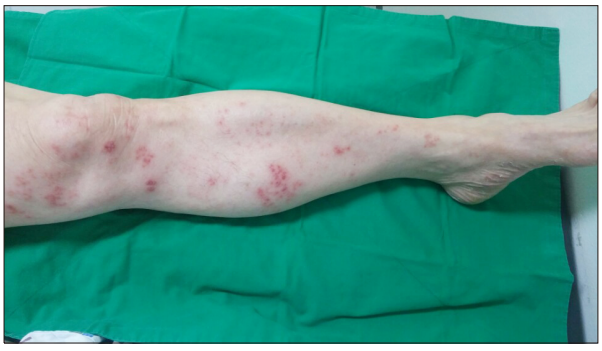

Fig. 1. A 68 old man patient with unilateral leg motor weakness 9 days after the onset of herpes zoster in his left L4 dermatome.

DISCUSSION

HZ most commonly involves the sensory ganglion leading to pain and sensory change in the affected dermatome. The prevalence of HZ is high in elderly people. The HZ-induced motor paresis is rare but can occur in 0.5% to 5% of patients [4]. It usually appears 2-3 weeks after the onset of the maculopapular rash [2,3]. It was reported that HZ-induced motor paresis typically lasts at least several months, which is associated with high rates of PHN [10]. The possible pathogenesis of motor weakness in HZ includes the extension of inflammation from the dor-

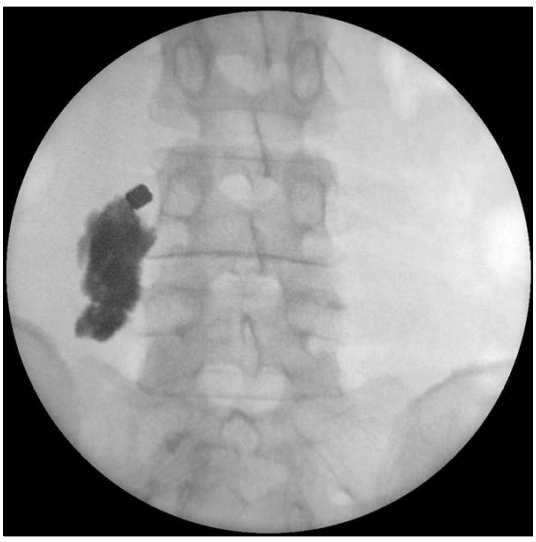

Fig. 2. Psoas compartment block was performed with local anesthetic and triamcinolone 40 mg.

sal sensory ganglion into the ventral root, plexus, and peripheral nerve [4,10,11]. It has a good prognosis, but some patients suffer from permanent motor weakness [3].

When added to antiviral therapy, administration of a steroid along the spinal root and within the epidural space, via interlaminar or transforaminal epidural block, can be effective in reducing acute pain from HZ and preventing the occurrence of PHN [1,5,12]. Conliffe et al. [12] reported in 2009 successful management of zoster motor paresis with L5 distribution with a lumbar transforaminal epidural block. But one of the fatal side effects associated with these procedures is the epidural hematoma, leading to neurological damage [6,7]. Therefore, an epidural block is contraindicated when the patient is treated with anticoagulants [13].

It has been reported that in 63% of the patients with zoster motor paresis, it was associated with a lesion on postganglionic structures, such as the plexus or peripheral nerve [10]. A PCB produces a unilateral segmental sensory and motor block by injecting local anesthetics into the paravertebral space containing the lumbar plexus from the L1–L4 roots with a contribution from T12 [8]. Therefore, the PCB is known as a lumbar paravertebral block or lumbar plexus block. A PCB is easier and has less frequent adverse effects with equivalent analgesic efficacy, compared to an epidural block [8]. It has been reported that a thoracic paravertebral block with triamcinolone 40 mg and local anesthetic was effective to treat abdominal segmental motor paresis and pain following HZ [14]. The PCB has some complications, such as epidural spread and bleeding. Epidural spread can occur in 16% of patients that underwent a PCB [15]. Although since 1992 four cases of retroperitoneal hematoma were reported in patients receiving PCBs and thrombophylaxis, it is suggested that deep and superficial plexus nerve blocks do not increase the risk of major bleeding in patients taking thrombophylaxis [16]. It was reported that a deep cervical plexus block with local anesthetic plus methylprednisolone 30–40 mg was effective to treat herpetic pain in patients receiving anticoagulants [17]. Kim and Chung [4] reported that administration of triamcinolone 40 mg around the cervical roots and brachial plexus was effective in alleviating pain and improving motor weakness in a patient with brachial plexitis following HZ. In the present case, the patient with HZ received thromboprophylactic treatment. Therefore, we performed a PCB with local anesthetics plus triamcinolone 40 mg, which could hasten rapid resolution of pain and motor weakness from HZ. The steroid has a strong anti-inflammatory effect, which can decrease inflammatory response in the involved nerve, resulting in hastening recovery of the damaged nerves [4,14,17].

In conclusion, HZ-induced motor paresis rarely occurs with good prognosis, but some patients have permanent motor dysfunction. In the present case, a PCB hastened a rapid resolution of pain and recovery from motor weakness in a HZ patient receiving anticoagulant medication. There were no adverse effects associated with the PCB. Therefore, PCB can be a safe and effective option for treatment of HZ patients who are treated with anticoagulants. Additionally, it possibly prevents PHN.

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