

Brief Commentary

Treatment of Abdominal Segmental Hernia, Constipation, and Pain Following Herpes Zoster with Paravertebral Block

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Disclaimer: There was no external funding in the preparation of this manuscript.

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Herpes zoster (HZ) most commonly occurs in elderly patients and involves sensory neurons resulting in pain and sensory changes. Clinically significant motor deficits and visceral neuropathies are thought to be relatively rare. A 72-year-old man presented with abdominal segmental hernia, constipation, and pain following HZ in the left T9-10 dermatome. Sixteen days before presentation, he had developed a painful herpetic rash in the left upper abdominal quadrant. Approximately 10 days after the onset of the rash, constipation occurred and was managed with daily oral medication with bisacodyl 5 mg. In addition, 14 days after the onset of HZ, the patient noticed a protrusion of the left upper abdominal wall. Abdominal x-ray, ultrasound of the abdomen, and electrolyte analysis showed no abnormalities. General physical examination revealed a reducible bulge in his left upper quadrant and superficial abdominal reflexes were diminished in the affected region. Electromyographic testing revealed denervational changes limited to the left thoracic paraspinal muscles and supraumbilical muscles, corresponding to the affected dermatomes. He was prescribed with 500 mg of famciclovir 3 times a day for 7 days, and pregabalin 75 mg twice a day and acetaminophen 650 mg 3 times a day for 14 days. However, his pain was rated at an intensity of 5 on the numerical analogue scale from 0 (no pain) to 10 (worst pain imaginable). A paravertebral block was performed at T9-10 with a mixture of 0.5% lidocaine 3 mL and triamcinolone 40 mg. One day after the procedure, the abdominal pain disappeared. In addition, 5 days after the intervention, the abdominal protrusion and constipation were resolved. He currently remains symptom free at a 6 month follow-up.

Key words: Abdominal, constipation, electromyography, herpes zoster, hernia, motor, paravertebral block, pain, steroid, dermatome

Herpes zoster (HZ) is caused by the reactivation of the varicella-zoster virus which usually involves the sensory neuron of the dorsal root ganglion (DRG). Its symptoms are characterized by erythematous maculopapular rash of the skin and painful sensory changes in the affected dermatomes. However, motor paresis or visceral neuropathy associated with HZ rarely can occur (1,2). Most patients with motor paresis after HZ will recover within one year of the onset, but some patients permanently experience weakness (3). When added to antiviral agent treatment, interventional procedures such as epidural block and paravertebral block (PVB) are effective in reducing acute pain from HZ and may prevent post-herpetic neuralgia (PHN) (4-6). Here, we report a patient with a painful abdominal bulge and

constipation associated with HZ, who was successfully treated with PVB using local anesthetic and steroid.

Case Report

A 72-year-old man presented to our clinic with a 16 day history of localized HZ in the left upper abdominal wall and a 2 day history of the left abdominal protrusion (Fig. 1). Two days after the appearance of the rash in the left T 9-10 dermatome, his clinical diagnosis of HZ was done by a dermatologist and he was treated with oral famciclovir (500 mg 3 times daily for 7 days), pregabalin (75 mg 2 times daily for 14 days), and acetaminophen (650 mg 3 times daily for 14 days). Approximately 10 days after the onset of the HZ rash, constipation occurred, which was managed with daily oral medication with bisacodyl 5 mg. In addition, 14



Fig. 1. A protrusion of the left abdominal wall 16 days after the onset of herpes zoster rash in a 72 year old man.

days after the onset of the HZ rash, the patient noticed a protrusion of the left upper abdominal wall. His past medical history was unremarkable. He previously had regular bowel habits, passing stool daily. Abdominal x-ray, ultrasound of the abdomen, and electrolyte analysis showed no abnormalities. Physical examination revealed a reducible bulge in his left upper quadrant and superficial abdominal reflexes were diminished in the affected region. Electromyographic testing revealed denervational changes limited to the left thoracic paraspinal muscles and supraumbilical muscles, corresponding to the affected dermatomes. His pain was rated at an intensity of 5 on the numerical analogue scale from 0 (no pain) to 10 (worst pain imaginable). A PVB was performed at T9-10 with a mixture of 0.5% lidocaine 3 mL and triamcinolone 40 mg. One day after the intervention, the abdominal pain disappeared. In addition, 5 days after the intervention, the abdominal protrusion and constipation was resolved (Fig. 2). Consent for publication of this case report was obtained from the patient. He currently remains symptom free at a 6 month follow-up.

Discussion

HZ most commonly occurs in elderly patients and involves sensory neurons resulting in pain and sensory changes. The incidence of motor deficit caused by HZ is reported to be relatively rare (1,2). The abdominal



Fig. 2. Resolution of the abdominal protrusion 5 days after paravertebral block with triamcinolone and lidocaine.

musculature (external and internal oblique, transversus abdominis, and rectus abdominis) are innervated by the T6-L1 segmental nerve roots. Therefore, although HZ predominantly occurs in the thoracic region, the incidence of motor paresis in the thoracic area is less common than in the head, neck, or extremities. The incidence of zoster motor paresis in thoracic area is between 0% and 6% (1-3). Motor paresis associated with HZ usually occurs almost 2 – 3 weeks after the appearance of the vesicular rash (1-3). The zoster abdominal paresis sometimes accompany visceral neuropathies that affect the gastrointestinal system such as constipation and colonic pseudo-obstruction (7,8). Constipation could be caused by involvement of extrinsic autonomic nervous system followed by the HZ infection of anterior horn of the spinal cord (7). The prognosis for motor paresis in HZ is relatively good, with complete recovery in 80% of patients within one year of the onset, but some patients permanently remain with partial resolution and no recovery (3). The possible pathogenetic mechanism includes the extension of inflammation from the DRG into the anterior horn and ventral root. Apparently, there does not seem to be any pharmacologic

treatment of hastening recovery of zoster abdominal paresis (3).

When added to antiviral therapy, administration of a steroid along the spinal root and within the epidural space via interlaminar epidural block or selective root block is effective to reduce the pain from HZ and has the potential to prevent the occurrence of PHN (4,9,10). Conliffe et al (9) reported successful treatment of L5 radiculopathy associated with HZ with selective nerve root block using steroid and local anesthetic. PVB produces a unilateral segmental block by administering local anesthetics into the paravertebral space containing the spinal nerve including the dorsal ramus, communicants, and the sympathetic chain. PVB is easier with a favorable side effect profile, but has similar analgesic efficacy, compared to epidural block (11,12). In the recent clinical trials, it was found that PVB with local anesthetic plus steroid is effective for relief of acute herpetic pain and prevention of the incidence of PHN (5,6). For example, Makharita et al (5) reported that a single PVB using steroid plus local anesthetic, in combination with antiviral therapy, shortens the duration of pain and skin eruption of HZ and decreases the incidence of PHN. In the present case, PVB using a steroid and lidocaine al-

leviated the pain and constipation and hastened the recovery of the segmental abdominal paresis in a patient with HZ. These effects might be caused by the combined somatosensory and sympathetic block by local anesthetic. In addition, the anti-inflammatory action of the steroid in the PVB could reduce neuronal inflammation of the affected nerve, leading to accelerated recovery of the damaged nerves (9).

Conclusion

The majority cases of HZ affect elderly patients and involve the thoracic region. As our population ages, the incidence of abdominal segmental hernia and/or visceral neuropathies followed by HZ may be expected to increase. Physicians need to be aware of this entity to provide proper treatments. PVB with steroid plus local anesthetic, in combination with antiviral treatment, may be an effective option for treatment of pain, constipation, and abdominal segmental hernia following HZ.

Conflicts of Interest

The authors have indicated that they have no conflicts of interest regarding the content of this article.

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