

Recovery of Abdominal Wall Postherpetic Pseudohernia Simultaneously with Pain Relief: A Case Report

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Abstract: Pseudohernia is a rare complication of herpes zoster infection. While the main presentation is sensory problems, motor involvement may occur in the same dermatome as motor weakness, which can cause abdominal wall bulging mimicking a hernia. A 55 year-old man visited the author's clinic for severe postherpetic neuralgic pain in the T11 dermatome with abdominal bulging. Following a diagnosis of postherpetic neuralgia and accompanying pseudohernia, epidural block and medication were administered. As the patient's pain gradually subsided, his bulging also reduced. Therefore the author reports the present case.

Keywords: postherpetic neuralgia, epidural analgesia, paralysis.

INTRODUCTION

Herpes zoster (HZ) is an infectious disease caused by the reactivation of latent varicella-zoster virus in the dorsal root ganglion. HZ is typically characterized by skin presentation including unilateral vesicles or lesions with pain and sensory abnormalities from a single nerve root. The motor nerves are less commonly involved. Motor problems usually occur in the segments correlated with the involved sensory areas. When motor involvement is localized in the abdomen, a pseudohernia may occur.

A pseudohernia represent a bulging of the abdominal wall without definite muscle or fascial opening due to the abdominal muscle weakness and the intra-abdominal pressure. According to Dworkin *et al.* 5% to 15% of patients with HZ have motor complications[1]. Although HZ develops most frequently on the thoracic dermatomes, overt motor involvement appears to be rare. However electromyography may more accurately detect motor lesions, thus increasing the reported cases of motor involvement[2]. Although the exact mechanism of muscular paralysis following HZ infection is not known, it may involve viral spread from the dorsal root

ganglion to the anterior horn cells and anterior spinal nerve roots[3]. The present study report a case of a 55-year-old male patient who had severe abdominal pain and accompanying pseudohernia which both improved simultaneously with epidural blocks and medication.

CASE REPORT

A 55-year-old male patient visited the pain clinic for his abdominal pain lasting four months. Before visiting, he had been treated by physicians in other private pain clinics without pain improvement. His pain was on thoracic dermatome 11, upon which a postherpetic scar and large bulge were observed (Fig 1).



Fig-1: Abdominal bulging

The numeric rating scale (NRS) was 10/10. He complained that his pain was too severe to sleep. The bulge had developed one month after the rash. He had initially visited internal medicine doctors to investigate the cause of the bulge. Abdominal computed tomography (CT) imaging revealed no abnormality including hernias.

The patient had no specific disease except for diabetes mellitus. His vital signs were normal. His laboratory results was normal except for a glycated hemoglobin (HbA1c) level of 7.7 % (normal range <6.5%). The author diagnosed the patient with postherpetic neuralgia with accompanying pseudohernia and started treatment with medication and transforaminal epidural block at the T11/12 level (Fig 2).

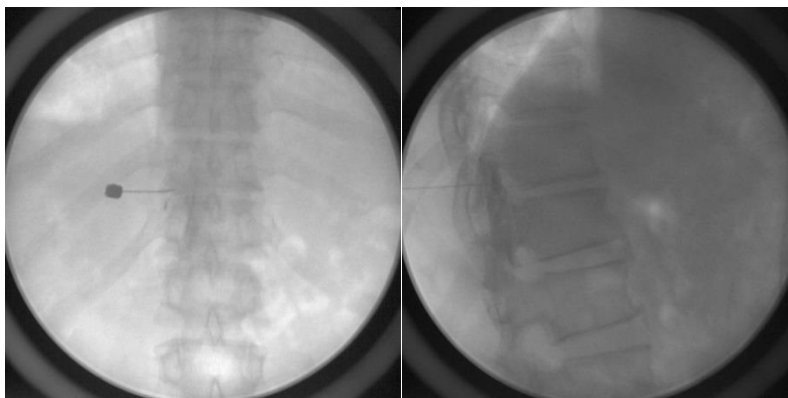


Fig-2: Transforaminal epidural block at T11/12 level

The medication was pregabalin 75mg bid, tramadol hydrochloride and acetaminophen 37.5mg/325mg bid, and a fentanyl transdermal patch 12 mcg/hour. The procedure was repeated after one week with 8 cc 0.5% bupivacaine, 2 cc normal saline and 1 or

2 mg dexamethasone. After three rounds of treatment, his pain began to subside and the bulge decreased in size; thereafter, the procedure was repeated four times at two-week intervals. After then, his NRS was 3/10 and his bulge had nearly disappeared (fig 3).



Fig-3: Bulge size decreased after treatment

The procedure was then repeated three additional times at three-week intervals; however, his pain remained at an NRS of 3/10, although without abdominal bulge. Therefore the author decided not to perform additional blocks but to maintain medication.

DISCUSSION

Postherpetic neuralgia (PHN) is the most common complication of HZ. It is generally defined as persistent dermatomal pain occurring more than three months after the rash[4]. According to a review study,

inflammatory nerve damage correspond with the beginning of pain, which leads to depletion of epidermal nerve endings and atrophy of dorsal root ganglion(DRG)[4]. The initial step for the management of PHN is the prevention of herpes zoster[5]. After the introduction of the HZ vaccine, the incidences of HZ and PHN have largely decreased in immunocompetent persons[6]. However, the question remains regarding treatment for patients experiencing PHN for more than several months. Until now, nerve blocks with local anesthetics and steroids including epidural block,

paravertebral block, sympathetic block have some effect on HZ but not on PHN[4,5]. Instead of nerve blocks, medication including tricyclic antidepressants, calcium channel α_2 - δ antagonists, serotonin-norepinephrine reuptake inhibitors, opioids, topical agents are recommended for PHN[4,5]. However, it is possible for a patient's pain is to be so severe that such medications are not effective. In these cases, treatment options may include continuous epidural or peripheral nerve blocks in addition to the medication.

In the present case, the patient was experiencing severe pain with per os (PO) medications only. The author administered three rounds of epidural block with steroids and then assessed the patient's pain status. Fortunately, the blocks worked; therefore, the author administered additional epidural blocks until no additional effect was observed and the patient's pain was tolerable with PO medication. While the pain of HZ is caused by inflammatory nociception, the pain of PHN is caused by fixed nerve damage as a result of inflammation, thus, anti-inflammatory procedure do not work. Statistically the onset of PHN is after 3 months following rash and the treatable component of inflammatory pain might disappear as time goes. In other words, delaying the effective treatment of the pain in HZ patients would result in the persistent PHN pain. However the same rule may not be applicable in all cases. Some long-term PHN patients may have a reversible component that could be treated by nerve blocks with local anesthetics and steroids. Therefore the author initially administers several rounds of nerve blocks to PHN patients with intolerable pain.

Motor involvement is a rare complication of HZ. It can occur at any site on the body. Some authors have reported facial paresis, limb paralysis, etc.[7]. Others reported constipation due to visceral neuropathy[8] as well as phrenic nerve paralysis[9]. In one case, mainly motor involvement was reported, with little sensory change[10]. The diagnosis of motor involvement is confirmed by electromyogram (EMG), magnetic resonance imaging (MRI) etc. Haanpaa *et al.* detected "widespread subclinical motor involvement extending several segments cranially and caudally, and both ipsi- and contralaterally" by EMG which was not correlated with the severity of rash or pain[2]. Hanakawa *et al.* reported a female patient with lower leg paralysis two weeks after rash, with MRI findings of "abnormal enhancement of the anterior spinal nerve roots as well as posterior spinal nerve roots at the T10 vertebral body level"[3]. Others reported denervated muscle injury detected by MRI[11,12]. The findings of EMG and MRI suggest that the cause of motor paralysis is the extension of inflammation to the anterior horn or root.

Chernev *et al.* reviewed 35 articles reporting 36 cases of abdominal pseudohernia [13]. The authors reported that the most affected dermatome was T11, as

was observed in the present case. In addition, the mean time from rash to the onset of abdominal muscle weakness was 3.5 weeks. Complete recovery occurred in 63.9% of patients in a mean time 4.9 months. Visceral neuropathy such as constipation co-occurred in 19.4% of the patients. In the present case, abdominal weakness developed one month after rash and recovery occurred about five months simultaneously with pain relief. To the author's knowledge, there exists no report on the relationship between pain resolution and recovery of pseudohernia. Based on the present case, the author suggests the possibility of a relationship between sensory and motor disturbances. However more cases are needed to delineate this relationship.

CONCLUSION

In conclusion, postherpetic neuralgic pain should be treated with more aggressive tools despite its long duration. In cases of abdominal bulging following HZ-associated pain in nearby areas, pseudohernia due to motor paralysis should be considered first rather than other internal abnormalities and pain treatment should be preferred to trials of evaluation of abdominal bulging.

REFERENCES

1. Dworkin RH, Johnson RW, Breuer J, Gnann JW, Levin MJ, Backonja M, Betts RF, Gershon AA, Haanpää ML, McKendrick MW, Nurmikko TJ. Recommendations for the management of herpes zoster. *Clinical Infectious Diseases*. 2007 Jan 1;44(Supplement_1):S1-26.
2. Haanpää M, Häkkinen V, Nurmikko T. Motor involvement in acute herpes zoster. *Muscle and Nerve*. 1997; 20(11):1433-1438.
3. Hanakawa T, Hashimoto S, Kawamura J, Nakamura M, Suenaga T, Matsuo M. Magnetic resonance imaging in a patient with segmental zoster paresis. *Neurology*. 1997; 49(2):631-632.
4. Jeon YH. Herpes zoster and postherpetic neuralgia: practical consideration for prevention and treatment. *The Korean journal of pain*. 2015 Jul 1;28(3):177-84.
5. Mallick-Searle T, Snodgrass B, Brant JM. Postherpetic neuralgia: Epidemiology, pathophysiology, and pain management pharmacology. *Journal of Multidisciplinary Healthcare*. 2016; 9:447-454.
6. Ansaldi F, Trucchi C, Alicino C, Paganino C, Orsi A, Icardi G. Real-world effectiveness and safety of a live-attenuated herpes zoster vaccine: a comprehensive review. *Advances in Therapy*. 2016; 33(7):1094-1104.
7. Chang CM, Woo E, Yu YL, Huang CY, Chin D. Herpes zoster and its neurological complications. *Postgraduate Medical Journal*. 1987; 63(736):85-89.
8. Maeda K, Furukawa K, Sanada M, Kawai H, Yasuda H. Constipation and segmental abdominal paresis followed by herpes zoster. *Internal*

- Medicine. 2007; 46(1349–7235 (Electronic)):1487-1488.
9. Kim YY, Kim YS, Park SH. Diagnosis of diaphragmatic paralysis using ultrasound in a cervical herpes zoster patient - A case report. *Anesthesia and Pain Medicine*. 2016; 11(1):76-79.
 10. Lim HK, Park J, Lee KH. Herpes zoster induced pure motor segmental paresis –A case report. *Anesthesia and Pain Medicine*. 2012; 7(3):210-212.
 11. Gupta A, Sundaram M, Winalski CS. MRI diagnosis of muscle denervation from herpes zoster with discordant distribution of the skin rash. *Skeletal Radiology*. 2014; 43(10):1481-1485.
 12. Miranda-Merchak A, García N, Vallejo R, Varela C. MRI findings of postherpetic abdominal wall pseudohernia: A case report. *Clinical Imaging*. 2018; 50(December 2017):109-112.
 13. Chernev I, Dado D. Segmental zoster abdominal paresis (zoster pseudohernia): a review of the literature. *PM&R*. 2013 Sep 1;5(9):786-90.