

## Segmental Zoster Paresis of Lower Thoracic Segment Presenting as Pseudohernia—A Report of Three Cases

### Abstract

Segmental zoster paresis is characterized by focal motor weakness affecting the myotome corresponding to the dermatomal distribution of the rash. Clinically, it presents as pseudohernia when it involves abdominal wall muscles. We report three cases of segmental zoster paresis presenting as pseudohernia of abdominal wall. All patients developed asymptomatic bulge in anterolateral side of abdomen between 10 and 15 days after appearance of vesicles. All patients developed post-herpetic neuralgia. One patient developed pseudo-obstruction of colon due to visceral involvement. Segmental zoster paresis of lower thoracic spinal segment often goes unnoticed due to its asymptomatic nature.

**Keywords:** *Herpes zoster, pseudohernia, segmental zoster paresis*

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### Introduction

Herpes zoster (Shingles) results from reactivation of varicella zoster virus and presents as painful blisters in a dermatomal fashion. The virus mainly affects the posterior root ganglia, causing majority of neurological complications which are sensory in nature, rarely affecting motor component.<sup>[1]</sup> Segmental zoster paresis is a neurologic complication characterized by focal, asymmetric motor weakness affecting the myotome corresponding to the dermatome of the rash.<sup>[2]</sup>

We report a case series of segmental zoster paresis presenting as abdominal wall pseudohernia.

Three patients presented to dermatology outpatient department over a period of 6 months with acute onset painful unilateral segmental blisters on the abdominal wall. Details of patients are tabulated in Table 1. All of them had classical presentation of herpes zoster. Remaining cutaneous and neurologic examination was normal. Tzanck smear showed multinucleate giant cells. Other investigations like blood counts, urinalysis, human immune deficiency virus testing, liver function tests, renal parameters were normal. All patients were treated with oral valacyclovir 1 g three times daily for

7 days and nonsteroidal anti-inflammatory drugs. On follow-up, bulge in the affected area of abdominal wall was noticed between 10 and 15 days after appearance of vesicles [Figures 1-3]. The bulge was soft, reducible, there was impulse on cough and superficial abdominal reflex was absent on the affected side in all patients. Patient three developed severe constipation and bloating sensation after 2 weeks. Ultrasound examination showed dilated bowel loops suggestive of pseudo-obstruction. His symptoms resolved with laxatives. All three patients developed post-herpetic neuralgia which was controlled with oral pregabalin. The abdominal bulge persisted in all patients after 4 months of follow-up.



Figure 1: Patient one, Left T 11–12 involvement

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**Table 1: Clinical profile of patients**

Age yrs	Sex	Dermatome involved	Pain	Comorbidities	Complications	Time of onset of Paresis
69	M	T 11-12 left	Allodynia	DM	-	2 weeks
58	F	T 10-11 right	Allodynia	DM	-	10 days
66	M	T 11-12 right	Allodynia	HTN	Colonic Pseudo-obstruction	12 days

DM: Diabetes mellitus; HTN: Hypertension



**Figure 2: Patient two, Right T10-11 involvement with crusting, hyperpigmentation and scarring**



**Figure 3: Patient three, Right T11-12 involvement**

## Discussion

Segmental zoster paresis of abdominal wall is a rare condition seen in elderly. In a review by Chernev I *et al.*, 35 articles that described 36 individual cases were identified.<sup>[3]</sup> There are two case reports in Indian literature.<sup>[1,4]</sup> The incidence of clinically detectable paresis is 0.3% when T2 and L1 dermatomes are involved.<sup>[5]</sup> The low recorded incidence of motor deficit in thoracic Herpes zoster is probably related to the difficulty in diagnosing weakness of intercostal and abdominal muscles.<sup>[6]</sup>

The differential diagnosis includes diabetes, herpes zoster, intercostal nerve lesions in surgical or other thoracic procedures; thoracic disc hernia, vertebral metastasis or trauma.<sup>[2]</sup> Motor involvement occurring temporally with zoster and in the same segment led us to the diagnosis of zoster paresis. Special investigations like electrodiagnostic studies, magnetic resonance imaging, and computed tomography have been used.<sup>[6]</sup> These tests were not done as the patients were not willing.

The pathogenesis is believed to be due to a direct viral spreading of the infection from dorsal root ganglion to the anterior horn cells, adjacent motor nerve roots, or peripheral nerves. Immune-mediated mechanism with aseptic inflammation has also been suggested.<sup>[3,6]</sup> The resulting bulge is due to weakness of muscles of anterior abdominal wall, predominantly external oblique which is innervated by T7-T12 spinal segment. Herpes zoster which affects only one or two segments may cause partial

weakness of external oblique without compromising its function.

One of our patient developed pseudo-obstruction of colon presenting as constipation and bloating. Visceral neuropathy has been described affecting urinary and gastrointestinal tract resulting in urinary retention, cystitis, and colonic pseudo-obstruction.<sup>[5]</sup> The prognosis of clinical paresis is good, with a complete or nearly complete recovery of function in 75-100% of patients within 6-12 months.<sup>[1,6]</sup>

Though a rare complication of herpes zoster, motor involvement of abdominal wall muscles goes unnoticed due to its asymptomatic nature. Patients with herpes zoster of lower thoracic segments have to be followed up regularly to identify this under-reported complication.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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