

## Hypesthesia as a prodrome in herpes zoster

Samruay Shuangshoti\*

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*A 52-year-old man had complicated herpes zoster (HZ) in his prolonged course of pneumonia. Before occurrence of the dermal lesions at the lumbar region upto the midline of his back in the T<sub>9</sub> and T<sub>10</sub> dermatomes on the right side, he experienced hypesthesia for 12 days in the skin of the right middle one-third of the anterior abdominal wall, right flank, and right lumbar region with the maximal intensity at the former, followed by the occurrence of multiple erythematous maculopapular eruptions with severe burning pain. With prompt and full systemic as well as local administrations of acyclovir for 5 days, the lesions subsided within 10 days without further formation of vesicles. Review of the literature discloses no descriptions concerning hypesthesia as a prodrome in HZ. Hypesthesia probably occurs as a prodrome in HZ but is neglected, because it does not cause much discomfort as the usual prodromal neuralgia.*

Reprint requests : Shuangshoti S. Department of Pathology, Faculty of Medicine, Chulalongkorn University, Bangkok 10500, Thailand.

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\* Department of Pathology, Faculty of Medicine, Chulalongkorn University.

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ผู้ป่วยชายอายุ 52 ปี เกิดงูสวัดในระหว่างที่ป่วยเป็นปอดบวมที่มีระยะการดำเนินของโรคนาน 12 วัน ก่อนที่รอยโรคงูสวัดจะเกิดขึ้นรู้สึกชาที่ผิวหนังหน้าท้องส่วนกลางซีกขวา สี่ข้างขวา และเอวด้านหลังซีกขวา ที่ผิวหนังหน้าท้องส่วนกลางซีกขวานั้นชามากกว่าที่บริเวณอื่น ๆ บริเวณทั้งหมดนี้ตรงกับเดอริมาโตมที่ 9 และ 10 ของปมและรากประสาทส่วนอกด้านขวา ในวันที่ 12 ของการชานั้นเองก็มีรอยโรคงูสวัด เกิดที่ผิวหนังส่วนเอวด้านหลังข้างขวาค่อนมาทางกึ่งกลาง แล้วจึงมีอาการปวดแสบปวดร้อนที่รอยโรค ซึ่งอาการหลังนี้เป็นมากอยู่ 5 วัน แล้วค่อย ๆ ลดลง ผู้ป่วยได้รับยาอะซีโคลเวียร์ทั้งกินและทาเต็มขนาดอยู่ 5 วัน โดยเริ่มได้รับยาตั้งแต่วันแรกที่รอยโรคปรากฏ รอยโรคซึ่งเป็นปื้นสีแดงนูนได้ค่อย ๆ จางลง ไม่มีตุ่มน้ำใสเกิดขึ้นแต่ประการใด ในที่สุดรอยโรคหายไปภายใน 10 วันหลังได้รับยา ได้หบทวนวารสารเกี่ยวกับงูสวัด ไม่พบมีผู้ใดกล่าวว่าจะมีอาการนำของโรคนี้เลย จึงรายงานผู้ป่วยนี้ไว้เป็นตัวอย่าง ผู้เขียนคิดว่าอาจเป็นอาการนำในโรคนี้ได้ แต่ผู้ป่วยอาจไม่สนใจต่ออาการที่เกิดขึ้น เพราะ ไม่ก่อความเดือดร้อนเหมือนอาการปวดแสบปวดร้อน

Pain is a well known prodrome in the dermatome (neurotome) of the affected neural ganglion(s) and root(s) in herpes zoster (HZ), an acute self-limited infection of varicella-zoster (V-Z) viral origin.<sup>(1-12)</sup> This prodrome frequently occurs 4 to 5 days prior to the occurrence of the dermal lesions characterized in the early stage by the reddening (erythema) and maculopapular eruptions.<sup>(2)</sup> However, a patient is presented herein, that hypesthesia (hypoesthesia, analgesia, anesthesia, numbness, or decreased sensitiveness to pain) may be a prodrome in HZ.

### Case Report

At the age of 16 years, a man who is now 52-year-old underwent posterior fusion of the lumbar vertebrae because of back pain, stiff back, lumbar kyphosis, and disappearance of the intervertebral disc between the L<sub>2</sub> and L<sub>3</sub> vertebrae. Clinically, it was thought that he had tuberculosis of the lumbar spine but a tuberculous focus has never been demonstrated. The lumbar spinal fusion worked satisfactorily. The patient could move his back as usual in all levels including the lumbar.

In June 1986, the patient had a low grade fever (37.3° to 37.5° C), sore throat, and cough. However, in stead of resting, he continued his daily work as usual. Because of persistent fever, he had a physical examination, 3 weeks after the onset of fever, which disclosed no abnormalities. Nonetheless, a white blood count exhibited 10,800 leucocytes/mm<sup>3</sup> with 85% neutrophils, 2% eosinophils, 8% lymphocytes, and 5% monocytes. Moreover, a chest x-ray demonstrated infiltrative patches in the middle and lower lobes of the right lung. The clinical diagnosis of pneumonia, then, was rendered.

Attempt was repeatedly made to identify the causative agent such as mycoplasma, legionella bacteria including *Mycobacterium tuberculosis*, and fungi but negative results were obtained. Nevertheless, the patient received antibiotics (amoxycillin and tetracycline) for 2 weeks and the fever subsided. A repeated leucocyte count revealed 6,000 cells/mm<sup>3</sup> with 61% neutrophils, 3% eosinophils, 1% basophils, 25% lymphocytes, and 10% monocytes. His subsequent chest x-rays on 3 occasions showed a slow resolution of the infiltrative patches in the right lung, which eventually cleared after 2 months.

After forty-seven days of illness, the patient experienced hypesthesia of the skin at the middle one-third of the anterior abdominal wall, flank,

and back at the lumbar region; all were on the right side. Neurological examination 5 days later (52 days of ailment) disclosed definite hypesthesia of the skin in the T<sub>9</sub> and T<sub>10</sub> dermatomes anteroposteriorly as well as laterally on the right side with the maximal intensity at the right middle one-third of the anterior abdominal wall. Limitation of the back movement, long tract sign, and muscular weakness were not detected. It was felt that the patient might have a lesion involving the T<sub>9</sub> and T<sub>10</sub> nerve roots such as adhesion of the arachnoid around the nerve roots or an intramedullary lesion of the spinal cord in the thoracic level such as secondary syringomyelia in association with the previous surgical intervention, 36 years ago. However, an x-ray of the thoracolumbar vertebrae and a computed tomographic scan of the thoracic segment of the spinal cord exhibited no abnormalities. The old lumbar spinal fusion was intact.

Twelve days after development of hypesthesia (59 days of illness), multiple erythematous maculopapular eruptions of the skin occurred on the right lumbar region in the T<sub>9</sub> and T<sub>10</sub> dermatomes upto the midline of the back (figures 1 and 2). There was no pain. Three qualified dermatologists diagnosed the lesions as "early HZ". A course of systemic and local administrations of acyclovir, an antiviral agent, was promptly given (400 mg orally every 4 hours, 5 times per day for 5 days, and a 5% cream applied locally every 4 hours for 5 days). Three days after the occurrence of the erythematous maculopapular eruptions (62 days of ailment), the patient suffered severe burning pain of the affected skin which lasted 5 days. Toward the end of the acyclovir administration (64 days of illness or 6 days of the dermal eruptions), the lesions became faded; vesicles were not formed. Burning pain decreased in severity. However, hypesthesia of the skin remained unchanged, particularly at the right middle one-third of the anterior abdominal wall. The dermal lesions eventually disappeared within 10 days of their occurrence (69 days of illness). Nevertheless, pain occasionally recurred, especially when the recently healed lesions were touched or hit, such as while sitting in a wooden chair. Subsequently, the hypesthesia improved slowly. At the time of writing this (October 1986, 3 1/2 months of ailment, or 1 1/2 months from the initial occurrence of the dermal lesions), only mild hypesthesia remained at the right middle one-third of the anterior abdominal wall, but disappeared from the right flank and lumbar region.



The clinical diagnosis was HZ of the skin and producing hypesthesia as a prodrome. complicating a prolonged course of pneumonia



**Figure 1.** Lesion in herpes zoster. The picture of the patient's back shows early erythematous maculopapular eruptions of the skin at the right lumbar region toward the midline. An erythematous maculopapula lies in the healed linear longitudinal scar relating to posterior spinal fusion of the lumbar vertebrae.



**Figure 2.** Herpes zoster. Higher magnification of the early erythematous maculopapulae without vesiculae is illustrated.

### Discussion

The clinical diagnosis of HZ in the current patient is based chiefly on the unilateral zonal distribution of the dermal erythematous maculopapules on the right lumbar region upto the midline of the back. Several workers have emphasized the unilateral segmental involvement of the dermal lesions in HZ.<sup>(2-4,6,7,9)</sup> Burgoon et al<sup>(2)</sup> noted in their study of 206 patients with HZ which made them state clearly that unilateral segmental involvement is the rule although bilateral occurrence does ensue in less than 0.5% of the cases. Boyd<sup>(3)</sup> also asserted that the eruption in HZ is always unilateral, running in zone (zoster) as far as the midline. Additionally, several authors stated that the thoracic dermatome is the most prevalent site of occurrence of HZ lesions.<sup>(2,4,6)</sup> About 55.3% of 206 patients in the series by Burgoon et al<sup>(2)</sup> and 62.5% of 140 persons in Brown's collection<sup>(6)</sup> showed HZ erythematous maculopapules in various thoracic dermatomes. This finding was also seen



in the current patient whose lumbar dermal HZ lesions were in the thoracic dermatomes. Based on these clinical observations, the diagnosis of HZ in the present case was regarded as appropriate.

The question may be raised concerning the absence of vesicles which have been regarded as highly characteristic for the dermal lesions in HZ. It is well known that typical lesions in HZ first appear as erythematous maculopapules which usually progress to vesicles within 24 hours and to pustules within 72 hours. When pustulation develops, the surrounding erythema begins to subside and the pustules become dry within 7 to 8 days. The formation of crusts occur after 10 to 12 days, which fall off after 2 to 3 weeks. In mild infection, however, the dermal lesions may remain as erythematous maculopapules and rapidly regress within 7 to 10 days without vesiculation.<sup>(2)</sup> In the present patient, it is suggested that early clinical recognition and prompt antiviral treatment resulted in the subsiding of the lesions at the erythematous maculopapular stage.

HZ is more likely to affect persons with immunological disturbances such as during immunosuppressive period, prolonged ailment, malnutrition, malignancy, or diabetes mellitus. It is reasonable to assume that HZ in the current patient was associated with deteriorated defensive mechanism of his body from a prolonged course of pneumonia, especially when he did not rest sufficiently.

Documents on HZ often state that the first symptom in this disease is neuralgia, or paresthesia, or hyperesthesia in the involved dermatome.<sup>(2-4, 6,7,9)</sup> Such pre-eruptive neuralgia of HZ may simulate a variety of conditions including pleurisy, myocardial infarction, peptic ulceration, cholecystitis, biliary or renal colick, appendicitis, early glaucoma, and even an intervertebral disc prolapse.<sup>(7)</sup> These diverse painful symptoms may lead to an erroneous diagnosis of HZ. Nonetheless, the author is unable to trace a description of hypesthesia as a prodrome in HZ from the related medical literature. It is probable that hypesthesia ensues occasionally as a prodrome in HZ but the patient may not have directed attention to this symptom, because it causes less discomfort than neuralgia. Also, medical consultation may not be sought when hypesthesia occurs alone as a prodrome in HZ. However, hypesthesia is a frequent sequela and may be troublesome in some individuals, particularly when HZ involves the area innervated by the ophthalmic division of the trigeminal nerve.<sup>(7)</sup>

Although the T<sub>9</sub> and T<sub>10</sub> dorsal-root ganglia and nerve roots were not studied pathologically it was assumed that sensory disturbances (hypesthesia and neuralgia) in the current patient were related to nonspecific inflammation involving the affected dorsal ganglia and nerve roots. Hemorrhagic necrosis, infiltration with mononuclear cells, chiefly lymphocytes, and Cowdry's type A inclusion bodies have been observed in the affected ganglion cells and capsule cells.<sup>(1,8,10,11)</sup> Esiri and Tomlinson,<sup>(5)</sup> furthermore, have demonstrated V-Z virus in the affected trigeminal ganglion of a patient having ophthalmic HZ, using immunofluorescence and electron microscopy. The affected portions of the peripheral nerve may also exhibit nonspecific inflammation, such as lymphocytic infiltration and nonspecific changes of Schwann's cells.<sup>(10)</sup> The nerve fibers may show disintegration or loss of myelin and disruption of axons.<sup>(10)</sup> These nonspecific pathologic alterations in the dorsal root ganglion, and nerve trunk would account for the prodromal neuralgia and hypesthesia as well as postherpetic anesthetic sequela. Moreover, the neuraxis as well as motor neurons and fibers may be involved in some cases of HZ.<sup>(1,12)</sup> According to Boyd,<sup>(3)</sup> HZ is the sensory analogue of poliomyelitis. The type of lesions in the nervous system and the condition of the cerebrospinal fluid are strikingly similar or the same in these two diseases.

## Summary

A 52-year-old man had HZ complicating his prolonged course of pneumonia. The patient developed hypesthesia of the skin at the right middle one-third of the anterior abdominal wall, right flank, and right lumbar region for 12 days before appearance of the right lumbar painful dermal erythematous maculopapular eruptions up to the midline of his back. With prompt, full systemic and local administrations of acyclovir for 5 days, the painful dermal lesions subsided within 10 days. hypesthesia as a prodrome in HZ has not been reported, to the author's knowledge. Perhaps, hypesthesia is a common prodrome in HZ but attention has not been directed to its presence because it does not produce much discomfort as the usual prodromal neuralgia.

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