



## Case Report

# Disseminated Herpes Zoster Infection with Urinary Retention and Incontinence

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**Abstract:** Herpes zoster is one of the most commonly encountered dermatological diseases. Disseminated herpes zoster is one of the severe forms of a herpes zoster infection. Patients with herpes zoster occasionally experience urinary retention and incontinence, which can greatly affect their quality of life. Urinary retention and incontinence appear to improve with or after the treatment of herpes zoster. There are some reports of urinary retention caused by herpes zoster, but case reports of incontinence are rare. Here a case of disseminated herpes zoster is reported that caused both urinary retention and incontinence. An 87-year-old woman visited the JR Tokyo General Hospital with complaints of erythema and headache in the right forehead, pain in the left buttock, and urinary retention that had started two days prior. Two days after the onset, the patient was hospitalized (Day 0) and treatment with acyclovir (750 mg/day) was initiated. For urinary retention, in addition to indwelling a urinary catheter, distigmine bromide at 5 mg/day was initiated. After admission, the patient experienced bowel incontinence on Day 1. Continued acyclovir treatment eliminated the blisters and alleviated pain, and incontinence did not reoccur after Day 2. At the end of the acyclovir administration, an attempt was made to remove the urinary tract catheter, but the catheter was reinserted the same day because urinary retention continued. The urinary tract catheter was ultimately removed on Day 36, after which urinary retention did not reoccur, even after distigmine bromide treatment was completed on Day 71. Similar to previous reports, it is thought that a skin rash on the head or buttocks or the onset of the disease in the elderly may be an indication for disease course with higher risk of incontinence. As the case described here was of an elderly woman with disseminated herpes zoster with skin eruptions on the face and left buttock, the combination of symptoms and the patient's older age placed her at higher risk for incontinence. Patients with herpes zoster on the face who were previously reported with urinary retention also had a skin rash on the trunk. Urinary retention without a skin rash on the trunk is considered rare. Moreover, blood tests for this case did not indicate renal dysfunction. Urinary disorders due to herpes zoster and renal dysfunction identified by blood tests may not be related.

**Keywords:** Disseminated Herpes Zoster, Urinary Retention, Incontinence, Urethral Catheter, Distigmine Bromide

## 1. Introduction

Herpes zoster is one of the most commonly encountered dermatological diseases. It is caused by the varicella zoster virus (VZV), which colonizes the nerves, causing blisters and pain. Interestingly, VZV is capable of reactivating, where it can then cause symptoms at a time later than the initial infection [1]. Risk factors for reactivation of VZV include older age and immunocompromised status [2]. VZV is

considered to be transmitted via the airborne route, through inhalation of the virus aerosolized from the respiratory tract or from blistering fluid, as well as through contact with blistering fluid and respiratory secretions. On rare occasions, symptoms may become severe enough that hospitalization may be required, such as in cases of disseminated herpes zoster [3]. The incidence of HZ has increased over the last few decades [4]. The lifetime risk of Herpes zoster in the general population ranges from 20–30% but the risk increases dramatically after

50 years of age with a lifetime risk of Herpes zoster reaching 50% at age 85 [5-8]. Although it was thought that Herpes zoster typically does not recur, it has recently been reported that it can recur mainly in immunocompromised patients [5, 8]. Elsberg et al. reported for the first time that herpes zoster may cause urinary retention, and since then, urinary retention caused by herpes zoster has been occasionally reported [9-11]. Cases of herpes zoster with incontinence have been reported as well; however, comparatively, this is still considered rare [12]. Here we report a case of disseminated herpes zoster with urinary retention in an 87-year-old woman.

## 2. Case Report

An 87-year-old woman (height, 147 cm; weight, 33.5 kg) visited the JR Tokyo General Hospital with complaints of erythema and headache in the right forehead, pain in the left buttock, and urinary retention that had started two days prior. The patient also had a history of spinal canal stenosis and was taking Famotidine 20 mg daily, magnesium oxide 750 mg daily, and Eldecalcitol 0.75 µg daily as conventional drugs. She visited our department after placement of a urinary catheter, and on initial physical examination, she had a temperature of 37.6°C, blood pressure of 135/68 mm Hg, and a heart rate of 76 beats per minute. A flaccid blister with a red halo was observed in the right trigeminal nerve branch I region as a band, and a blister was observed extending from the left buttock to the sacrum and anus. The patient was diagnosed with disseminated herpes zoster due to the blisters with red halo scattered on the trunk.

Blood sampling on the day of consultation showed an increase in the C-reactive protein level (1.20 mg/dL) but indicated no abnormal renal function (blood urea nitrogen 13.0 mg/dL, creatinine 0.71 mg/dL). Two days after the onset, the patient was hospitalized (Day 0) and began treatment with acyclovir (750 mg/day). For urinary retention, in addition to indwelling a urinary catheter, distigmine bromide at 5 mg/day was initiated.

After admission, the patient had bowel incontinence on Day 1. With continued acyclovir treatment, the blisters were exhausted, her pain was alleviated, and incontinence did not occur again after Day 2. At the end of the acyclovir

administration, an attempt was made to remove the urinary tract catheter, but the catheter was reinserted on the same day because urinary retention continued. The urinary tract catheter was ultimately removed on Day 36, following which there was no recurrence of urinary retention, even after distigmine bromide treatment was completed on Day 71. There was no recurrence of shingles after administration of oral distigmine bromide.

## 3. Discussion

Here we describe a case of generalized herpes zoster causing urinary retention and fecal incontinence. There have been a few case reports after Elsberg et al. reported in 1913 regarding a herpes zoster infection-causing urinary retention; however, reports on complications leading to incontinence are scarce [9-11, 13]. Abundant research on Herpes zoster among Asian patients indicates that urinary disturbances are uncommon but not rare in patients with herpes zoster. However, incontinence is rare even among Asians [14]. As was the case in the report by Jellinek et al., it is thought that a skin rash on the head or buttocks or the onset of the disease in the elderly may be an indication for a disease course, which has a higher risk of incontinence [12]. As the case described here was of an elderly woman with generalized herpes zoster, with skin eruptions on her face and left buttock, the combination of symptoms and the patient's older age placed her at a higher risk for incontinence.

For urinary retention, urethral catheter placement and self-guided urine guidance are generally provided. As a drug therapy,  $\alpha$ -blockers such as urapidil [15], bethanechol chloride [15, 16], and distigmine bromide [15] are used for the treatment of a neurogenic bladder. There are reports stating that the early use of steroidal drugs can also be effective for treating meningitis [17-19] and urinary retention [18]. It is important to consider these drugs depending on the case; however, there is no evidence-based drug therapy for urinary retention. The prognosis for urinary retention is generally considered good [20]; however, even in this case, the patient needed to be treated with an indwelling urethral catheter and distigmine bromide.

**Table 1** Disseminated herpes zoster with urinary disorders and a skin rash on the face.

Author	Age	Sex	Location of rash	Headache	Medical History
Omoto et al.	77	Male	Entire body including face	Evaluation not possible due to consciousness disorder	No description
Shimizu et al.	42	Male	Entire body including face	-	Myelodysplastic syndromes
Suzuki et al.	25	Female	Entire body including face	No description	-
Our case	87	Female	Face, Left hip to sacrum	+	Spinal canal stenosis

In this case, blisters were also present on the face. Some reports have been published describing urinary retention in a case with herpes zoster facial blisters in a patient who also had meningitis [21-23]. Table 1 shows the characteristics of disseminated herpes zoster cases with a skin rash on the face. All cases entailing urinary retention, including this case, also had blisters on the trunk. Urinary retention is considered rare in cases of herpes zoster where blisters on the trunk are absent.

Although the patient's spinal canal stenosis might also be involved in causing incontinence, the involvement of this condition was considered limited as the patient had had neither urinary retention nor incontinence before the rash appeared. Moreover, blood tests for this case did not indicate renal dysfunction. Urinary disorders due to herpes zoster and renal dysfunction as indicated by blood tests may not be related.

## 4. Conclusions

In conclusion, we report a disseminated herpes zoster infection that caused urinary retention and incontinence. Older age was thought to be a risk factor for generalized herpes zoster. Older age and eruptions on the face or buttocks in herpes infections also have been suggested as high-risk factors for incontinence. Although incontinence is rare in cases of Herpes zoster, it is important to recognize the higher risk of incontinence among patients with these risk factors to provide better patient care. Urinary disorders due to herpes zoster and renal dysfunction as indicated by blood tests may not be related.

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