



## Rapidly Expanding Erosions in an Elderly Patient

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### Abstract

An 85-year old male with diabetes and dementia presented with a two-week history of rapidly growing erosions spanning multiple dermatomes on the left side of the face. Biopsy of the lesion was non-specific; however, a VZV PCR swab was positive, leading to the diagnosis of herpes zoster oticus. The patient was treated with valacyclovir and his rash ultimately healed. This case illustrates a unique presentation of herpes zoster. It typically arises as grouped vesicles in a single dermatomal distribution. Representing reactivation of the varicella zoster virus that lies dormant in the dorsal root ganglion, herpes zoster commonly affects the elderly and the immunosuppressed. Complications include Ramsay Hunt syndrome, which manifests as facial nerve paralysis secondary to herpes zoster oticus. Guanosine analogs are the mainstay of treatment for herpes zoster and recent studies demonstrate their efficacy even after the first 72 hours of symptoms. In the case of Ramsay Hunt Syndrome, corticosteroids should also be administered to avoid permanent paralysis. Ultimately, vaccination is the most effective way to prevent this illness and its long-term effects.

**Keywords:** Herpes zoster; Shingles; Infection; Ramsay-hunt

### Case Presentation

An 85-year-old male nursing home resident with a history of diabetes and dementia presented with rapidly growing erosions involving the left side of the head and neck. The initial lesion, a papule on the left posterior scalp was noted 2 weeks prior to presentation; however, the erosions appeared only a few days before the visit. The patient persistently manipulated the area, but did not complain of burning or tingling sensations. No one else at the nursing home was affected.

Two weeks prior, the patient was hospitalized for a fall leading to examination of this rash. The patient was started on antibiotics after an aerobic culture was positive for *Acinetobacter* and *Enterococcus*. A biopsy, Varicella Zoster (VZV) and herpes zoster swab were pending at the time of dermatology evaluation five days after discharge. Physical examination revealed erosions extending from the left external ear to the left parietal scalp and involving the left cheek and chin (Figures 1 and 2). At the visit, punch biopsy, aerobic culture, herpes simplex and varicella zoster PCR were performed.

### Clinical Course

The patient was empirically started on valacyclovir 1 gm TID. Same day review of external medical records revealed a positive VZV PCR during his hospitalization and repeat testing performed at the visit was also positive, confirming the diagnosis of herpes zoster oticus. Histopathologic examination was non-specific, showing lichen simplex chronicus superimposed on chronic eczematous dermatitis. Repeat sections did not reveal viral inclusions suggestive of herpes.

A week later, the patient returned and the lesions appeared to be crusting and healing. The patient persistently touched his ear, but continued to deny any hearing changes, numbness or tingling of the area. Given no facial nerve paralysis and no evidence of Ramsay Hunt Syndrome, physicians deferred corticosteroid use but recommended treatment for post-herpetic neuralgia.

### Discussion

Herpes zoster is a dermatologic and neural disease arising from reactivation of dormant varicella zoster virus residing in the dorsal root ganglia after initial infection. The virus then travels through myelinated nerve fibers to the area of skin it innervates leading to cutaneous disease [1]. It presents unilaterally with macules and papules evolving to vesicles occasionally spanning dermatomes with pain as the most common symptom. Reactivation usually occurs only once in a life time and more commonly in elderly or immunosuppressed populations [2]. Herpes zoster affects 20% of the population with up to 1 million cases in the US annually [3]. The most prevalent sites affected

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**Figure A and B:** Significant erosions on the left head and neck not crossing the midline and extending from the occipital to parietal scalp, involving the entirety of the left ear and downward to the left chin.

include thoracic and cervical dermatomes, with concern for facial paralysis and blindness when cranial dermatomes are involved. The diagnosis is made clinically, but supplemented with Tzanck smears and viral PCR.

Herpes zoster treatment includes a 7 days course of antiviral therapy with nucleoside analogs such as acyclovir and valacyclovir. The initial trial examining acyclovir to treat herpes zoster saw greatest reduction in time to last lesion formation if treatment began within 48 hours [4]. Guidelines recommend starting treatment within 72 hours; however, as seen in this case, often patients do not present until days later. Recent studies illustrate no statistically significant difference in median time to pain cessation or duration of pain if patients take antiviral therapy before or after 72 hours of rash onset [5]. In our patient with herpes zoster oticus, development of Ramsay Hunt Syndrome was of greatest concern. Ramsay Hunt Syndrome represents a combination of herpes zoster oticus and facial nerve paralysis involving paralysis of cranial nerves VII and VIII. The most common cause of acute facial nerve paralysis, its incidence is 5 in 100,000. 80% of patients affected are over 50 years old and exhibit symptoms such as hearing loss, vertigo, and muscle weakness of the facial muscles [6]. Without treatment, spontaneous recovery of facial nerves occurs in 20% of cases. Corticosteroids and antiviral in combination show the greatest efficacy in regaining motor function in Ramsay Hunt Syndrome [7].

Post herpetic neuralgia remains the most common long-term consequence of disease, defined as persistent pain 90 days after initial rash heals. A direct consequence of virus related damage to the peripheral nerves during the flare, post-herpetic neuralgia causes 50% of untreated patient residual pain after the rash resolves. Risk factors include older age, comorbid conditions such as diabetes and increasing severity of the acute shingles attack [8]. When following patients for a year after onset of shingles, no difference in residual pain scores or percentage of patients achieving complete pain resolution is seen if patients are treated before or after 72 hours of rash onset [9].

Herpes zoster can be a crippling disease with long lasting complications affecting quality of life. The varicella zoster vaccine

proves to be extremely effective in reducing the incidence of shingles. In Phase III Trials, the vaccine reduces the risk of zoster from 72.4% to 51% and decreased the burden of illness by 61.1% [10]. While treatments such as antiviral therapy and corticosteroids help control its sequel, the only way of truly averting the debilitating consequences of herpes zoster is by vaccination.

In summary, this case of herpes zoster oticus demonstrates an unusual presentation of erosions instead of blisters crossing multiple dermatomes. Confirmatory testing with VZV PCR is recommended in ambiguous cases, as often the biopsy is non-specific. Treatment entails administering nucleoside analogs ideally within 72 hours, yet they still remain efficacious after this time period. Ramsay Hunt Syndrome and post-herpetic neuralgia is two long-term sequel of the disease and ultimately, only by adequate vaccination can they be prevented.

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