CASE REPORT

Herpes zoster

Ravi Prakash Sasankoti Mohan, Sankalp Verma, Udita Singh, Neha Agarwal

Department of Oral Medicine & Radiology, Kothiwal Dental College & Research Center, Moradabad, Uttar Pradesh, India

Correspondence to

Dr Ravi Prakash Sasankoti Mohan, sasan_ravi@rediffmail.com

SUMMARY

Herpes zoster (HZ) or 'shingles' is a painful vesicular rash resulting from reactivation of the varicella-zoster virus that also causes chickenpox. The incidence of HZ infection (HZI) increases with age and the degree of immunosuppression. Post herpetic neuralgia, the most common complication of HZ, occurs after the zoster rash has resolved. Conventional therapies include antivirals, corticosteroids and analgesics, both oral and topical. Here we report a case of HZ in an 80-year-old woman involving maxillary nerve and the article also reviews various treatment modalities available for the management of HZI.

BACKGROUND

Herpes zoster (HZ) is an acute infectious viral disease of extremely painful and incapacitating nature which is characterised by inflammation of dorsal root ganglia or extramedullary cranial nerve ganglia, associated with vesicular eruptions of the skin or mucous membrane in an area supplied by the affected nerve.¹ HZ is more commonly known as shingles, from the Latin *cingulum*, for 'girdle.' This is because a common presentation of HZ involves a unilateral rash that can wrap around the waist or torso like a girdle.²

HZ presents as a rash of 2–3 weeks duration in immune competent patients that is accompanied by moderate or severe pain. In some patients, pain does not resolve when the rash heals but continues for weeks and, sometimes, for months or years; this persistent pain is termed 'postherpetic neuralgia (PHN)' and is one of the most common complication of herpes zoster infection (HZI).^{1–3} Less well

recognised maxillofacial complications include developmental anomalies such as irregular short roots and missing teeth, periodontitis and calcified and devitalised pulps.¹

CASE PRESENTATION

An 80-year-old woman reported to the outpatient department with pain and vesicular eruptions on the right middle third of the face. On examination multiple pinheaded vesicles were present on the right middle third of the face, nasolabial fold, infraorbital area, upper lip and also right eye (figure 1A). Intraorally multiple crusted ulcers are present on the right side of the palate, buccal mucosa and residual ridge without crossing the midline (figure 1B). Based on clinical presentation a provisional diagnosis of HZ involving the right maxillary nerve was given and immediately started with antiviral medication and steroids. The patient was followed for 4 weeks and responded well to the treatment and the lesions healed remarkably (figure 2 A,B).

TREATMENT

In our case the patient was prescribed antivirals in the form of acyclovir tablets 200 mg five times daily for a week, corticosteroids in the form of prednisolone tablets 10 mg twice daily for a week along with antibiotics and sunscreen lotions in the form of calamine lotion to prevent reactivation by ultraviolet light. The patient responded well to the treatment. On the second appointment a week later, the dose of acyclovir was reduced to 200 mg three times a day because of reduction in pain, burning sensation, size and the number of vesicles.

Figure 1 (A) Clinical photograph of an 80-year-old woman showing multiple fluid filled vesicle in clusters on the middle third of the face. (B) Intraoral photograph of an 80-year-old woman showing diffuse irregular ulcers on the palate without crossing the midline.

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Figure 2 (A) Post-treatment photograph of an 80-year-old woman of herpes zoster showing healing of lesions with scar formation. (B) Post-treatment intraoral photograph showing complete healing of palatal ulcers.

OUTCOME AND FOLLOW-UP

The patient was followed up for 4 weeks, and no recurrences were reported.

DISCUSSION

Varicella-zoster virus is an α -herpes virus which leads to primary infection varicella (chicken pox) and then becomes latent, usually in the dorsal root ganglia or ganglia of the cranial nerves. Reactivation produces HZI, commonly called shingles.⁴ The virus enters the host via the respiratory system, replicates at an undefined site (presumably the nasopharynx), infiltrates the reticuloendothelial system and eventually makes its way into the bloodstream.²

HZI of the skin (shingles) is more common in adults and starts with a prodrome of deep, aching and burning pain. There is usually little to no fever or lymphadenopathy. This is followed within 2–4 days by the appearance of crops of vesicles in a dermatomal or zosteriform pattern.⁴ The lesions usually begin to dry and scab 3–5 days after appearing. Total duration of the disease is generally between 7 and 10 days; however, complete healing may take more than 4 weeks.⁵

Involvement of the trigeminal nerve leads to lesions on the upper eyelid, forehead and scalp with V1, midface and upper lip with V2 and lower lip with V3. With the involvement of V2, patients experience a prodrome of pain, burning and tenderness, usually on the palate on one side. So in present case maxillary nerve (V2) is involved as the lesions were present on the midface and palate.

The most common complication associated with HZ is the development of PHN, a condition where pain persist for months and sometimes years after the rash resolves.^{6, 7} PHN is of particular concern with increasing age because it is estimated that half the individuals over age 50 who develop shingles also develop PHN.² In our case also pain was persisting even after the vesicles are subsided for more than 30 days duration.

Other potential complications of HZ include encephalitis, myelitis, peripheral nerve palsies and forms of contralateral hemiparesis. An uncommon complication of HZI involving geniculate ganglion is Ramsay Hunt syndrome. Patients develop Bell's palsy, vesicles of the external ear and loss of taste sensation in anterior two-third of the tongue.⁵

Schwartz and Kvorning reported 10 cases of HZ with postherpetic complications including osteonecrosis of jaw, exfoliation of teeth, severe periodontitis and scarring of the skin.¹ In our case also the patient had severe periodontitis and mobility of the teeth and also an extraction socket which showed delayed healing.

Conventional treatment options

The objective of conventional therapy in the treatment of HZ is to accelerate healing of the lesions, reduce the accompanying pain and prevent complications.

The recommended dosages of commonly used antiviral agents used in the management of HZ infection are given in boxes 1 and 2.

Box 1 Medication Dosage

Acyclovir
200 mg orally five times daily for 7–10 days, 10 mg/kg intravenously every 8 h for 7–10 days
Famciclovir
500 mg orally three times daily for 7 days
Valacyclovir
1000 mg orally three times a day for 7 days
Brivudin
125 mg once daily for 7 days

Corticosteroids

Oral corticosteroids have commonly been used for pain management in HZ, although clinical trials have yielded inconsistent results for reducing development of PHN. One study using a combination of prednisone and acyclovir demonstrated a significant reduction in pain associated with HZ.²

Analgesics and non-steroidal anti-inflammatory drugs

In patients with severe pain, use of narcotics may be indicated. Use of nerve block injections is another option in the conventional medical model. Local anaesthetic may be injected around the affected nerves, providing pain relief typically lasting 12–24 h.^{2, 4}

Box 2 Tricyclic antidepressants

Amitriptyline

0–25 mg orally at bedtime; increase dosage by 25 mg every 2–4 weeks until response is adequate, or to a maximum dosage of 150 mg/day

Nortriptyline

0–25 mg orally at bedtime; increase dosage by 25 mg every 2–4 weeks until response is adequate, or to a maximum dosage of 125 mg/day

Imipramine

25 mg orally at bedtime; increase dosage by 25 mg every 2–4 weeks until response is adequate, or to a maximum dosage of 150 mg/day

Desipramine

25 mg orally at bedtime; increase dosage by 25 mg every 2–4 weeks until response is adequate

Postherpetic neuralgia

Gabapentin and lidocaine patch 5% is the first line for PHN and opioid analgesics and tricyclic depressants the second line of treatments. Prednisolone (administered at a dosage of 60 mg /day for first week of zoster, tapered over 21 days and given with antiviral therapy) can accelerate quality of life improvements, including return to usual activity.^{3–5}

Natural treatment options

Natural therapies can provide solutions to effectively manage herpes viruses, prevent and treat complications and minimise the risk of developing viral resistance.

Dietary/multiple-nutrient effects

An association exists between risk of zoster and fruit and vegetable consumption or dietary intake of select nutrients (vitamins A, B₆, C and E, and folic acid, zinc and iron). It was determined that individuals, particularly those over age 60, who ate less than one serving of fruit or vegetables weekly had a three-fold greater risk of zoster compared with those who ate more than three servings daily.²

Botanicals with specific efficacy for HZ Capsaicin (from *Capsicum frutescens*)

Capsaicin is an alkaloid derived from cayenne pepper (*Capsicum frutescens*). A well-studied compound, capsaicin is of particular importance in the treatment of PHN because of its effect on C-fibre sensory neurons. These neurons release inflammatory neuropeptides, such as substance P, that mediate neurogenic inflammation and chemical-initiated pain.^{2,3}

Traditional Chinese medicine

Acupuncture has long been regarded as an effective therapy for pain management. One study documented a case of a 52-year-old man diagnosed with PHN who was successfully treated after four sessions using a combination of acupuncture and moxibustion.²

Transcutaneous electrical nerve stimulation

Use of transcutaneous electrical nerve stimulation (TENS) therapy has been beneficial in the management of PHN. In one review, the use of combination therapy consisting of amitriptyline, topical capsaicin and TENS was recommended for the treatment of PHN over antiviral therapy.²

Learning points

- ▶ Although the diagnosis of the conditions is generally straightforward, treatment can be frustrating for the patient and physician.
- ▶ Approaches to management include treatment of the herpes zoster infection and associated pain, prevention of postherpetic neuralgia and control of the neuropathic pain until the condition resolves.
- ▶ Primary treatment modalities include antiviral agents, corticosteroids, tricyclic antidepressants and anticonvulsants.

Competing interests None.

Patient consent Obtained.

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REFERENCES

- 1 Bandral MR, Chidambar YS, Telkar S, *et al*. Oral complications of herpes zoster infection—report of 3 cases. *Int J Dent Clin* 2010;2:70–3.
- 2 Roxas ND Mario. Herpes zoster and postherpetic neuralgia: diagnosis and therapeutic considerations. *Altern Med Rev* 2006;11:102–13.
- 3 Dworkin RH, Schmader KE. Treatment and prevention of postherpetic neuralgia. *Clin Infect Dis* 2003;36:877–82.
- 4 Sook BW, Martin SG. *Ulcerative, vesicular and bullous lesions. Burket's oral medicine*. 11th edn. BC Decker, 2008:46–9.
- 5 Sampathkumar P, Drage LA, Martin DP. Herpes zoster (shingles) and post herpetic neuralgia. *Mayo Clin Proc* 2009;84:274–80.
- 6 Whitley RJ. Varicella-zoster virus infections. In: Fauci AS, Braunwald E, Isselbacher KJ, Wilson JD, Martin JB, Kasper DL, Hauser SL, Longo DL, Randolph T, Harrison, eds. *Harrison's principles of internal medicine*. 14th edn. New York, NY: McGraw Hill, 1998:1086–9.
- 7 Nagel AM, Gliden HD. The protean neurologic manifestations of varicella-zoster virus infection. *J NeuroVirol* 2002;8(Suppl 2):75–9.

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