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LETTER TO THE EDITOR

A case of herpes zoster complicated with paralysis of the recurrent and glossopharyngeal nerves

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Dear Editor,

Varicella-zoster virus (VZV) has a high affinity for the ganglion and causes various neuropathies, including Ramsay Hunt syndrome. The recurrent nerve and the glossopharyngeal nerve are rarely involved in herpes zoster.¹

A 58-year-old woman was referred to our otorhinolaryngology department with hoarseness that had started 2 days before. She was diagnosed with paresis of the recurrent and glossopharyngeal nerves from hemi-laryngeal paresis and pharyngeal curtain sign (Fig. 1c, d). **She showed no signs of typical Ramsay Hunt syndrome, such as facial paralysis, hearing loss or dysgeusia.** She was referred to our dermatology department due to vesicles and erythema on the left auricle (Fig. 1a). Giant cells were observed by Tzanck test from the vesicles (Fig. 1b). Enzyme-linked immunosorbent assay titers for anti-VZV IgG antibody were 14.5 U/ml on admission and 128.0 U/ml 2 weeks later (normal range: <2.0). We made the diagnosis of herpes zoster and treated her with intravenous acyclovir (10 mg/kg/day) for 1 week from the day of admission. We performed methylprednisolone pulse therapy (1,000 mg per day for 3 days). Thereafter, we treated her with oral prednisolone 60 mg/day for 3 days, gradually tapered the dosage and ceased it for 21 days after the first prednisolone administration. The dysphagia and pharyngeal curtain sign gradually improved and were largely healed at 180 days later, although hemi-laryngeal paresis remained and the hoarseness did not disappear completely (Fig. 1e, f).

The glossopharyngeal nerve and the recurrent nerve supply fibers to the pharyngeal plexus, along with the spinal nerves. All the pharyngeal muscles are innervated by the pharyngeal plexus, except for the stylopharyngeus muscle, which is directly innervated by a branch of the glossopharyngeal nerve.² The motor fiber supply to the velar muscles is known to be dually innervated by the pharyngeal plexus and a branch of the facial nerve.³ The concha auriculae is considered to be innervated predominantly by the facial nerve, although the glossopharyngeal and recurrent nerves

also supply motor fibers to the concha auricularae. Cranial neuropathy by VZV infection is due to nerve damage directly by VZV infection or indirectly by inflammation and edema. The jugular foramen, which is easily constricted, may be prone to the indirect influence of inflammation and edema.⁴ Combination therapies of antiviral agents and systemic corticosteroids are considered highly effective in cases of **Ramsay Hunt** syndrome.⁵ The anti-inflammatory effect of corticosteroids is thought to suppress the influence of inflammation and edema, and the prompt administration of corticosteroids with antiviral drugs is crucial to prohibit nerve dysfunction in cranial neuropathy by VZV. In the present case, systemic corticosteroids were started 4 days after the onset of the paresis. Thus, irreversible damage to the recurrent nerve was not prevented and hemi-laryngeal paresis remained as an aftereffect. However, the damage to the glossopharyngeal nerve healed. The present case further suggests that the early introduction of methylprednisolone pulse therapy is highly recommended to prevent nerve dysfunction as a sequela of VZV neuropathy in herpes zoster patients complicated with paralysis of the recurrent and glossopharyngeal nerves.

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Figure legends

Figure 1. Clinical features of the present case.

(a) Vesicles and erythema are observed in the left auricle at referral to our dermatology department.

(b) Giant cells are seen by Tzanck test from the vesicles. $\times 400$

(c, d) At the patient's initial visit to our otorhinolaryngology department, curtain sign of the left pharynx (c) **was** positive and left hemi-laryngeal paresis **was** apparent (d).

Curtain sign is a symptom in which the palatal patch of the paralyzed side droops and the uvula inclines to the unaffected side at phonation. When hemi-laryngeal paresis occurs, the glottis is unable to close due to motor palsy of the vocal cord on the affected side.

(e, f) 180 days after the patient's first visit, curtain sign of the left pharynx has disappeared, although the left hemi-laryngeal paresis remains.