Herpes Zoster of the Larynx

John M. Carter, MD\(^1\); David Cai, BS\(^1\); Brian A. Moore, MD, FACS\(^2\)
\(^{1}\)Tulane University School of Medicine, \(^{2}\)Ochsner Clinic Foundation

**Abstract**

Varicella Zoster is a systemic disease process that rarely occurs in the larynx. A 97 year old gentleman encountered in the clinic and then the hospital setting presented with severe dysphagia, odynophagia and hoarseness. This case report includes endoscopic images of the larynx that reveal mucosal vesicles of the hemilarynx, pooling of secretions and a unilateral vocal cord paralysis. Varicella zoster antibody titers for IGG were positive. The gentleman improved with systemic antiviral medication, with marked improvement of both subjective and objective findings.

**Introduction**

Varicella Zoster is a common systemic disease that rarely affects the larynx.\(^1\)\(^4\) The virus is known to establish a latent infection in the spinal cord or cranial nerve ganglia that reactivates secondary to various stressors. It has often been described in head and neck as Ramsay Hunt Syndrome type II, stemming from the geniculate ganglion. Patients suffering from herpes zoster present with vesicular eruptions, acute pain and nerve paralysis in the distribution of the affected nerves. Herpes zoster of the larynx is uncommon and often presents with multiple cranial neuropathies.\(^1\)\(^3\)\(^5\)\(^6\) Furthermore, its vesicular appearance may be confused with a laryngeal neoplasm.

Herpes zoster of the larynx may manifest with unilateral vocal fold paralysis, mucosal vesicles of the hemilarynx, dysphagia and odynophagia. The diagnosis of this disease process is largely clinical and may be supplemented by viral antibody assays and polymerase chain reaction (PCR).\(^1\)\(^3\)\(^5\)\(^6\)

**Case Presentation**

A 97 year old male presented with one week of worsening dysphagia, odynophagia and a mild hoarseness. The patient was still able to tolerate a normal diet. During flexible fiberoptic laryngoscopy the patient did not have a vocal fold paralysis but did have a small ulcer of the right aryepiglottic fold. Two days later his dysphagia worsened and he was no longer able to tolerate liquids.

Esophagogastroduodenoscopy was performed and the only abnormality was a Schatzki ring at the gastroesophageal junction. Secondary to his severe dysphagia and a modified barium swallow study that showed aspiration and hypopharyngeal pooling of contrast, a gastrostomy tube was placed. Contrast enhanced computed tomography of the neck did not reveal any abnormality. The following day flexible fiberoptic laryngoscopy was repeated, revealing ulcerations of the right hemilarynx, pooling of secretions and a complete right vocal fold paralysis (Figure 1). The left hemilarynx was unaffected. Laboratory testing was significant for Varicella zoster IGG antibody titers that were five times normal limits, 5.06 (NL= 0.0-0.9). Varicella IGM antibody testing was negative. The patient was started on intravenous valacyclovir and prednisone. The following day his subjective dysphagia began to improve. Laryngoscopy revealed a reduction in the quality of the erythema and ulcerations. Finally, two weeks after treatment, the patient had a complete resolution of the vesicles (Figure 2). The previously paralyzed right cord demonstrated improved, but not yet normal mobility.

**Discussion**

Herpes zoster of the larynx may present in a variety of ways. The patient may have one or more cranial nerve palsies, painful mucosal vesicles, or pain without visible herpetic lesions. Cranial nerves IX, X, and XI are most often involved but CN VII and VIII may be affected in more extensive cases.\(^1\) Patients may or may not have concurrent skin involvement.

Varicella zoster in the head and neck affects various cranial nerves in a lobaroceral distribution. The larynx is supplied by the vagus nerve, namely the superior laryngeal and recurrent laryngeal nerves. The superior laryngeal nerve provides sensory innervation to the supraglottic structures and vocal folds through its internal branch, while the external branch provides motor innervation to the cricothyroid muscle. The recurrent laryngeal nerve innervates the remainder of the motor function of the laryngeal muscles and sensory innervation for the subglottis.\(^7\)

Mucosal lesions of zoster of the head and neck are not typically limited to one nerve distribution and do not necessarily stem from one ganglion.\(^1\)\(^2\) In our case disease was confined to the distribution of the superior and recurrent branches of cranial nerve X. Lin et al. described the only 11 previously reported cases of varicella zoster infection that presented as cranial nerve palsies with mucosal lesions that lacked skin manifestations or evidence of herpes zoster oticus. Four of these cases involved only the hemilarynx and cranial nerve X, as in our presentation.\(^1\)

**Figure 1.** Flexible fiberoptic laryngoscopy demonstrating complete resolution of lesions.

**Figure 2.** Flexible fiberoptic laryngoscopy demonstrating vesicular lesions of the hemilarynx, a paralyzed right vocal fold and pooling of secretions.

**References**