

## Ramsay Hunt Syndrome – A Brief Review

### Abstract

Ramsay Hunt Syndrome (RHS) is an unusual variant following dental infection due to its unusual presentation and diagnostic uncertainty it becomes a challenge for a clinician for diagnosis which results in delayed antiviral therapy. The purpose of this paper is to discuss in brief about the etiology, clinical course and possible treatment of this unusual and painful variant in relation to dental infections.

### Key Words

Endodontic, Biofilm, Microbial, formation, antimicrobial

**Ramsay Hunt Syndrome (RHS)** is caused by reactivation of varicella-zoster virus (VZV) infection. As early as 1907, Hunt pointed out that both facial paralysis and auditory or vestibular complications could accompany trigeminal, occipital, or even cervical herpes zoster Infection<sup>[1]</sup> RHS refers to either of 2 conditions, herpes zoster oticus or any cephalic zoster complicated by facial paralysis and/or by vestibulocochlear dysfunction Facial paralysis due to VZV reactivation has been well described.<sup>[2],[3],[4]</sup> However, little is reported about RHS following dental procedures<sup>[5],[6]</sup> and there are no reports associated with dental infection. The literature is reviewed and we discuss the reactivation of VZV related to oral inflammation caused by dental procedures, surgery, and infection. Due to diagnostic uncertainty among the clinicians, VZV reactivation was not considered in the initial differential diagnosis, which resulted in delayed antiviral treatment. RHS typically presents with the classic triad of ear pain, herpetic auricular rash, facial paralysis, and/or vestibulocochlear dysfunction. The rapid progression from auricular skin swelling to necrotizing cellulitis might have masked the presence of herpetic vesicles. Thus, this presentation cannot be called a zoster sine herpette. Various dentistry-related causes of facial palsy have been reported in the literature. Most are a direct effect of dental anesthetic

injection,<sup>[7],[8]</sup> or due to direct or indirect surgical trauma to the facial nerve.[9] Some dental procedures were incision of the gingiva and fitting of a crown, treatment of carious teeth, extraction of a tooth, root canal therapy, and adjustment of dentures. The types of dental treatment took place in the mandibular or maxillary region and varied widely. Direct stimulation of the trigeminal nerve by incision, drilling, extraction, or root canal therapy might have triggered virus reactivation in most of these cases. The other uncommon manifestation of RHS was the presentation of a rapidly progressing cranial polyneuropathy. Initially cranial nerves V, VIII, and X were involved. Followed by 7th nerve palsy. The presence of a right vocal cord paralysis with debris obstructing the airway and the delay in antiviral treatment might have contributed to patient's poor outcome. There have been reports of RHS presenting with multiple cranial nerve involvement in the past. Aviel and Marshak[10] reviewed the literature and found that the following nerves are involved in order of decreasing frequency: VII, VIII, IX, V, X, and VI with involvement of cranial nerves I, II, III, IV, XI, and XII being rare. De and Pfleiderer[11] described an extreme and unusual variant of RHS with involvement of cranial nerves VII, VIII, X, IX, and XII, as well as C2-C4 sensory dermatomes. Therefore, it must be kept in mind that RHS should be considered a cranial polyneuropathy. The significance

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of early diagnosis and treatment of RHS is well established. Administration of acyclovir-prednisone within 72 hours of the onset of facial paralysis has been shown to reduce nerve degeneration.<sup>[12]</sup> in cases of diagnostic uncertainty; the presence of VZV can be confirmed by documenting viral antigen through PCR or viral serology. In conclusion, reactivation of VZV following inflammation of oral tissue may be more common than previously documented, particularly in immunocompromised hosts. Independent of the clinical presentation, RHS should be included in the differential diagnosis of patients presenting with ear pain after dental procedures or dental infection, and when appropriate, should lead to early administration of antiviral treatment.

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