

Ramsay Hunt Syndrome in a Patient with H7N9 Influenza Virus Infection

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To the Editor: We would like to present Ramsay Hunt syndrome (RHS) as a complication of H7N9 influenza virus infection. On January 22, 2014, a 57-year-old man with a history of rheumatoid arthritis was admitted to the hospital complaining of dyspnea and fever. Infection with influenza A (H7N9) virus was confirmed from a tracheal aspirate sample using polymerase chain reaction (PCR) assays. Hypoxemia led to non-invasive mechanical ventilation on the first day. Methylprednisolone (80 mg intravenous every 24 hours) and oseltamivir were administered starting from the first day. On day 11, otalgia and secretion of yellow exudate was associated with a swollen right external auditory canal. Four days later, a vesicular rash developed at the right ear canal and pinna. Symptoms progressed over the following 48 hours in which right facial palsy, dysphagia, hoarseness, hearing loss, and vertigo were all present in the patient [Figure 1]. Deviation of the uvula to the left

and paralysis of the right soft palate was consistent with pharyngeal hyporeflexia and the constellation of symptoms confirmed the diagnosis of RHS. Penciclovir cream, methylprednisolone (40 mg intravenous daily for two days, followed by a gradual taper of oral glucocorticoids), acyclovir (2105 mg intravenous for one day), foscarnet sodium (3 g daily for 11 days), and methycobal injection (1 mg daily for one week) were all administered. Thirteen days later, the otalgia, vesicular rash, and swollen external auditory canal had resolved. The patient was successfully weaned from mechanical ventilation on day 33. The facial paralysis, hoarseness, and vertigo were gradually ameliorated and were completely recovered on day 52 [Figure 2]. Right facial nerve and vestibulocochlear nerve were still showed enhancement by cerebellopontine angle (C-P angle) district magnetic resonance imaging (MRI) on day 57. The sensorineural and conductive



Figure 1: The clinical manifestation of a patient with H7N9 influenza virus infection complicated with RHS demonstrates the swollen, erythematous right ear canal and the pinna with a vesicular rash present on day 11 (a), which had resolved by day 24 (b). The right facial palsy with a paucity of forehead wrinkles, flattened nasolabial fold, and asymmetric facial droop on the right side which was present on day 17 (c and g). The right facial palsy had not fully resolved by day 179 (d and h). Swallowing dysfunction under direct laryngoscopy in which congestion of the bilateral piriformis sinuses was demonstrated on day 17 (arrow) (e). The swallowing dysfunction had recovered on day 169 and bilateral piriformis sinuses were clear (f).

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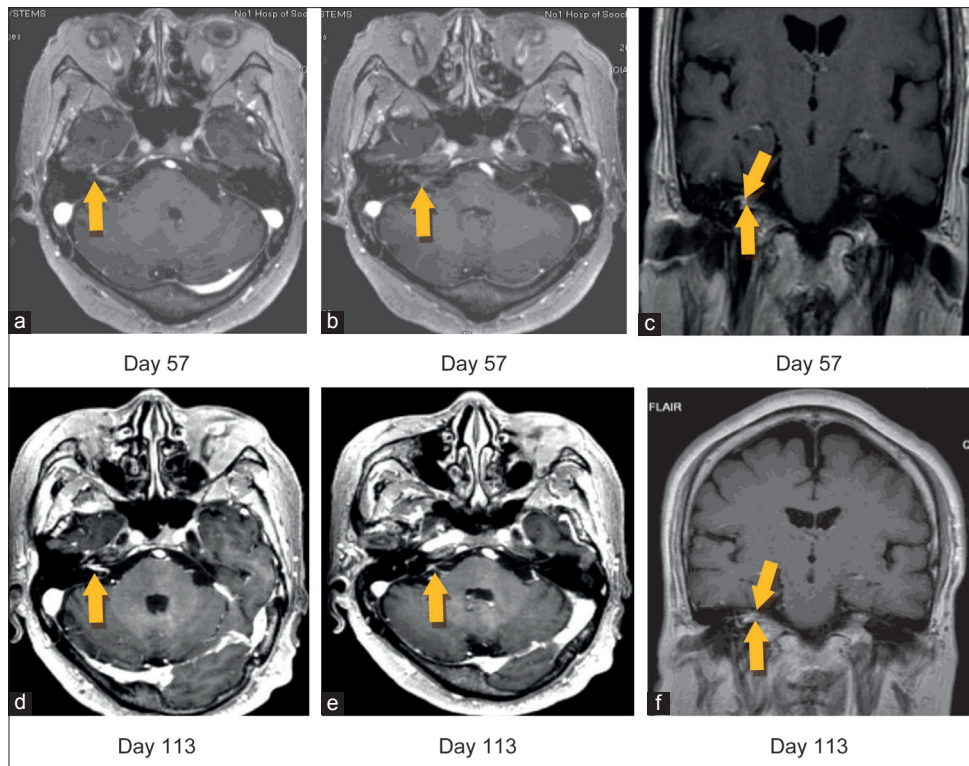


Figure 2: Gadolinium (Gd)-contrast enhanced magnetic resonance imaging (MRI) of cerebrium demonstrates the contrast-enhanced axial T1-weighted image shows enhancement in the facial nerve (arrow) and vestibulocochlear nerve (arrow) on day 57 (a,b, and c). Gadolinium (Gd)-contrast enhanced MRI of cerebrium on day 113 shows the contrast-enhanced axial T1-weighted changes in the facial nerve (arrow) and vestibulocochlear nerve (arrow) had not resolved (d,e, and f).

hearing loss of both left and right ears, and sensorineural hearing loss of right ear were found by the pure tone audiometry on day 70. The hearing loss of left ear was completely recovered, but none of the hearing loss of right ear was ameliorated with the test of audiometry on day 169. The patient was discharged from the hospital on day 180 after admission.

RHS usually occurred in host with immunocompromise by reactivation of herpes virus which was described with dermatomal herpetic rash, unilateral facial paralysis, vertigo, tinnitus, hearing loss, nausea, vomiting, and often associated with acute otalgia.^[1-3] To date, this is the first report of RHS complicating an H7N9 viral infection. However, it is hard to identify the etiology of RHS with H7N9 viral infection according to the current data. Co-infection of herpes virus and H7N9 influenza virus is rare. A vesicular rash developed at the right ear canal and pinna suggest that herpes virus is the possible pathogenesis for this patient. Further studies are needed to help identify the mechanism of H7N9 influenza virus infection complicated with RHS.

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