

Acute Unilateral Sensorineural Hearing Loss due to H1N1 Infection

Arnon Blum MD and Claudia Simsolo MD

Department of Medicine, Poria Hospital, Lower Galilee, Israel

KEY WORDS: unilateral sensorineural hearing loss, H1N1, prednisolone

IMAJ 2010; 12: 450

The etiology of sudden deafness remains unknown even though some studies suggest that it could be viral in origin. Idiopathic sudden sensorineural hearing loss (unexplained unilateral sensorineural hearing loss with onset over a period of 72 hours) has an estimated incidence of 5–20/100,000 persons per year [1]. Approximately 1% of cases of sudden sensorineural hearing loss are due to "retrocochlear" disorders that may be related to vestibular schwannoma, demyelinating disease, or stroke. Another 10–15% are due to Meniere's disease, trauma, autoimmune disease, syphilis, Lyme disease, or perilymphatic fistula. The remainder are idiopathic and almost exclusively unilateral [1].

We describe a 73 year old man who was admitted with H1N1 infection and developed acute right ear sensorineural hearing loss. This is the first case with acute hearing loss and H1N1 infection to be described.

PATIENT DESCRIPTION

A 73 year old man was admitted with acute gastroenteritis and low grade fever. He started to feel nausea and vomiting 2 days before admission. His daughter, a 30 year old obese woman with Down's syndrome, was admitted to the intensive

care unit of the hospital 3 days earlier due to massive bilateral pneumonia and acute respiratory distress syndrome. A positive diagnosis of H1N1 infection was reached following polymerase chain reaction analysis (throat and nose swab cultures).

Because of the family relationship and the acute illness of the daughter a throat swab for H1N1 infection was taken also from the father, and Tamiflu[®] (Roche, Israel) 75 mg twice a day was started. Twenty-four hours later we received a positive diagnosis of H1N1 infection, and Tamiflu was continued for 5 days.

On the fourth day he complained of sudden hearing loss in the right ear and a sensation of fullness in the ear. The physical examination was normal, with a negative Romberg test and without nystagmus. A comprehensive audiologic assessment revealed a bilateral normal eardrum with a normal pure-tone air and bone conduction (Weber and Rinne tests). Treatment was initiated with high dose prednisolone (60 mg daily) and after 24 hours he began to hear again in the right ear and the sensation of fullness in that ear disappeared. Prednisolone was tapered gradually over the next few weeks and the patient felt well with no hearing disability.

COMMENTS

Acute sensorineural hearing loss can occur as a complication of viral illness such as mumps and herpes zoster or herpes simplex virus [2]. Epstein-Barr virus has been shown to be involved in sen-

sorineural hearing loss [3], as was human immunodeficiency virus [4]. In a survey of serum samples, multiple agents were found in 24 of 49 patients with idiopathic sudden hearing loss. Influenza virus group B was found in 14 (18%) and rubeola in 12 (16%), followed by herpes simplex type 1 in 6 (8%), mumps in 6 (8%), influenza group A3 in 6 (8%), rubella in 5 (7%), and cytomegalovirus in 5 (7%) [5].

To the best of our knowledge our patient is the first to be reported with an acute unilateral hearing loss secondary to H1N1 infection. We believe that this phenomenon was related to the viral infection since it occurred during an acute viral infection and responded to high dose steroids within 24 hours of treatment.

Corresponding author:

Dr. A. Blum

Dept. of Medicine, Poria Hospital, Lower Galilee 15208, Israel

Phone/fax: (972-4) 665-2687

email: ablum@poria.health.gov.il
navablum@hotmail.com

References

1. Rauch SD. Idiopathic sudden sensorineural hearing loss. *N Engl J Med* 2008; 359: 833-40.
2. Chand RP, Jan A, Vyas H. Acute sensorineural deafness following herpes simplex infection. *Eur J Pediatr* 1993; 152(4): 379.
3. Yossepowitch O, Lossos A, Lossos IS. Sudden hearing loss following acute hepatitis. *Postgrad Med J* 1999; 75: 309-12.
4. Ohashi S, Hiraide F, Funasaka S, et al. Two cases of sensory neural hearing loss as a manifestation of HIV infection. *Nippon Jibiinkoka Gakkai Kaiho* 1995; 98(9): 1399-406.
5. Veltri RW, Wilson WR, Sprinkle PM, Rodman SM, Kavesh DA. The implication of viruses in idiopathic sudden hearing loss: primary infection or reactivation of latent viruses? *Otolaryngol Head Neck Surg* 1981; 89(1): 137-41.