CASE REPORT

Conversion Deafness Presenting as Sudden Hearing Loss

Ying-Piao Wang1, Mao-Che Wang2,3, Hung-Ching Lin1*, Kuo-Sheng Lee1

1Department of Otolaryngology, Mackay Memorial Hospital, 2Department of Otolaryngology, Taipei Veterans General Hospital, and 3National Yang-Ming University School of Medicine, Taipei, Taiwan, R.O.C.

Conversion deafness is a somatoform disorder characterized by hearing loss without an anatomic or pathophysiologic lesion. Clinically, discrepancies between behavior hearing thresholds and objective electrophysiologic examinations, such as impedance audiometry, otoacoustic emissions (OAE), and auditory brainstem response (ABR), will raise the suspicion of this disorder. It is judged to be due to psychological factors and that patients do not intentionally produce the symptom. Conversion deafness is sometimes reported in children but is extremely rare among adults. Two young adults with this disease are presented. These 2 patients were both under enormous stress from the national entrance examinations for universities. Pure tone audiometry showed bilateral hearing deterioration, but OAE and ABR were normal. The hearing of both patients recovered after treatment. The diagnosis, prognosis and treatment of this disorder are also discussed. It is important to discover the psychological stress in patients with conversion deafness. This report aims to increase awareness of this condition and avoid unnecessary steroid use in its treatment. [J Chin Med Assoc 2006;69(6):289–293]

Key Words: conversion, somatoform disorder, sudden hearing loss

Introduction

The nomenclative terms of non-organic hearing loss (NOHL), functional hearing loss, and pseudohypacusis are synonyms that describe the audiometric discrepancies between the real hearing threshold and the measured threshold of the patient in the absence of any organic disease.1,2 These general terms cover hearing loss in distinct categories: conscious malingering, factitious disorder, and conversion deafness.3

Malingering refers to an intentional feigning of illness for self-gain, such as financial compensation or drugs, to win a lawsuit, or to avoid military service.2 Factitious illness may represent the deliberate or intentional feigning of physical or psychological symptoms to assume the role of the sick.2 Therefore, the gain of this behavior is intrapsychiatric rather than external compensation. In a minority of cases, NOHL is derived from a conversion disorder, conversion deafness, which is a psychological defense mechanism whereby an unconscious psychological need is translated into physical defect.

The aim of this report is to increase awareness of this condition and demonstrate 2 cases of conversion deafness that resulted from stress from national university entrance examinations. The diagnosis, prognosis and treatment of this disorder are also discussed.

Case Reports

Case 1

A 20-year-old female, who was taking supplementary classes to help pass the examinations, was referred to our hospital for sudden-onset bilateral hearing loss associated with vertigo 4 days ago. Her previous medical history was unremarkable. On physical examination, the patient was weak, apathetic and nonchalant. She also expressed no interest in having contact with relatives or anyone in the external environment.

*Correspondence to: Dr. Hung-Ching Lin, Department of Otolaryngology, Mackay Memorial Hospital, 92, Section 2, Chung-Shan North Road, Taipei 104, Taiwan, R.O.C.
E-mail: carlsonwang@yahoo.com.tw • Received: August 12, 2005 • Accepted: January 17, 2006
Otoscopy revealed normal tympanic membranes. There was no spontaneous or gaze nystagmus with fixation. Audiology showed bilateral total deafness, even under 120 dB HL stimulation (Figure 1A). An acoustic reflex test was not performed on admission day 1 because it might aggravate the patient’s vertigo. She passed the distortion product otoacoustic emissions (DPOAE) examination (Figure 2A).

On admission day 3, a follow-up audiogram showed a 55–65 dB improvement in hearing bilaterally (Figure 1B). Acoustic reflex thresholds were within normal limits. Evidence of repeatable waveforms at 30 dB hearing level bilaterally was detected on auditory brainstem response (ABR) (Figure 2B). These discrepancies in the electrophysiologic auditory tests (ABR and DPOAE) and the behavioral hearing threshold led to the possibility of NOHL.

A psychiatric consultation was begun and the patient confessed that she had gotten poor marks in the joint entrance examination for the institutes of technology. She was afraid of hearing of her failure in the examination. Sudden onset of hearing loss and vertigo developed 3 days before the results of the examination were announced. NOHL associated with a major psychological stressor established the diagnosis of conversion deafness. She returned to normal hearing threshold on admission day 7 (Figure 1C). At 6 years of follow-up, there was still no recurrence of the psychological hearing abnormality.

**Case 2**
A 19-year-old girl in her last year of high school presented to our department with a complaint of sudden bilateral hearing loss lasting for 2 weeks. She denied tinnitus and had no vertigo. Physical examination showed normal tympanic membranes. The pure-tone audiogram (PTA) revealed a flat 55-dB HL sensorineural hearing loss bilaterally (Figure 3A). Speech reception threshold was at 50 dB on the right and 45 dB on the left. Acoustic reflex thresholds were normal. A tentative diagnosis of bilateral sudden deafness was made.

The patient refused hospitalization, and steroid therapy was begun with oral methylprednisolone 24 mg every 12 hours. Bed rest at home and return consultation in 48 hours were recommended. Upon returning, she continued to complain of bilateral hearing loss. Repeat PTA showed similar results, with good intra- and intertest consistency. On the same day, she passed the transiently evoked otoacoustic emissions (TEOAE) examination and 20 dB hearing level was detected on ABR bilaterally. These data suggested the possibility of NOHL.

*Figure 1*. Pure-tone audiogram of Case 1 on: (A) admission day 1; (B) admission day 3; and (C) admission day 7.
Figure 2. (A) Distortion product otoacoustic emissions of Case 1 on admission day 1. (B) Auditory brainstem response of Case 1 on admission day 3.
Figure 3. Pure-tone audiogram of Case 2 on: (A) admission day 1; and (B) admission day 11.

Discussion

Conversion disorder is a somatoform disorder characterized by 1 or more symptoms or deficits affecting the sensory or voluntary motor function without any anatomic or pathophysiologic lesion to explain the symptoms. It is often due to psychological factors because the initiation or exacerbation of the illness is preceded by conflicts or stressors. Patients who suffer conversion symptoms do not intentionally produce or feign such symptoms (DSM-IV-TR Somatoform Disorders Diagnostic Criteria). They experience the symptoms as genuine.

The exact prevalence of conversion disorder is not known. The estimated range is 11/100,000 to 300/100,000 of the general population, and it is more common in females, with ratios from 2:1 to 10:1. The exact prevalence of conversion deafness is only a small fraction of this disease entity. Furthermore, conversion deafness is encountered more in children and seldom reported in adults.

There is no consistent audiometric configuration or pattern for patients with NOHL. The diagnosis of conversion deafness relies on discrepancies between behavior hearing thresholds and objective electrophysiologic examinations such as impedance audiometry, OAE and ABR. Furthermore, one must rule out both malingering and factitious illness. Malingering refers to the purposeful and intentional feigning of illness for self-gain. These patients may wish to gain financial compensation, win a lawsuit, or avoid military service. Factitious illness, on the other hand, may represent the intentional feigning of physical or psychological symptoms to assume the sick role itself, thereby rewarding intrapsychiatric gain.

The factitious disorder is distinguished from malingering in terms of motivation, which comes from external incentives in the latter. Finally, we may diagnose a patient as having conversion deafness with reasonable confidence.

Regarding the first patient (Case 1), she was afraid of hearing of her failure on the enrollment examination for the institutes of technology. The sudden hearing loss may be a symbolic resolution to cope with enormous subconscious psychological conflict in order to relieve anxiety. This deep-seated conflict may be out of the patient’s consciousness during the conversion procedure. In Case 2, our review revealed no discrepancy between PTA and speech reception thresholds, which has been demonstrated in 66–91% of NOHL cases. NOHL was not suspected initially in Case 2, and oral steroid was prescribed for this patient as for idiopathic sudden deafness. This incorrect ten-
tative diagnosis led to unnecessary steroid treatment. Therefore, for sudden hearing loss in young adults or children, conversion deafness should be considered to avoid such unnecessary treatment.

Conversion disorder usually develops abruptly and lasts a relatively short time. Spontaneous recovery is found in approximately 95% of cases, usually within 2 weeks. Our 2 patients recovered in 11 and 25 days, respectively. The more quickly the symptoms develop, the more quickly they resolve. However, recurrent episodes appear in a fifth to a quarter of patients within 1 year after the first attack.

In acute cases of conversion deafness without a previous history of conversion disorder, it is important for the patient to have support and reassurance from doctors, audiologists, and family members. Detection of psychogenesis and etiologic factors are of utmost importance for successful therapy. Psychiatric consultation may be helpful, and one must avoid confrontation or pejorative statements such as “there is nothing wrong with your hearing”. If the symptoms do not subside within a few weeks, psychotherapy should be considered. Treating chronic conversion cases is more challenging. Pharmacotherapy, such as anxiolytics and antidepressants, may be helpful. Psychotherapy may, likewise, be useful in chronic cases, but may be contraindicated in patients with a deterioration of symptoms when it is initiated.

References