

A Rare Case; Bilateral Sudden Sensorineural Hearing Loss

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Abstract:

Sudden hearing loss (SHL) first appeared in the literature with the definition of deKlein in 1944. Sudden hearing loss is defined as hearing loss in the sensorineural component over 30 decibels (dB) holding at least 3 consecutive frequencies that occur within 72 hours. Bilateral sudden sensorineural hearing loss is a rarely seen condition requiring specific treatment and corresponds to 0.44-4.9% of all sudden sensorineural hearing loss patients. In this study, we aimed to present a case of bilateral sudden loss of hearing loss, possibly after a previous upper respiratory tract infection, and to present it in the light of current literature.

Keywords: Bilateral sudden hearing loss, prednisolone.

Introduction:

Sudden hearing loss (SHL) first appeared in the literature with the definition of deKlein in 1944.^[1] Sudden hearing loss is defined as hearing loss in the sensorineural component over 30 decibels (dB) holding at least 3 consecutive frequencies that occur within 72 hours.^[2] There are researchers who accept 20 dB or more as sudden hearing loss.^[3,4] Sudden hearing loss is an ENT emergency. It is usually seen in people between 30 and 60 years of age, and race, gender and geographical distribution are not important.^[5] 90% of patients are observed on one side.^[6] SHL constitutes 1% of all sensorineural hearing loss (SNHL) patients and the incidence is 5-20 / 100,000.^[7] Bilateral sudden sensorineural hearing loss is a rarely seen condition requiring specific treatment and corresponds to 0.44-4.9% of all sudden sensorineural hearing loss patients.^[8,9] In this study, we aimed to present a case of bilateral sudden loss of hearing loss, possibly after a previous upper respiratory tract infection, and to present it in the light of current literature.

Case:

A 34-year-old male patient admitted to our clinic with a 1 day hearing loss complaint in both ears. Both tympanic membranes and external auditory canal were naturally visualized on the physical examination of the patient. All other ENT examinations were normal except hyperemia in oropharynx. Pure tone audiogram showed mean bone threshold values (0.25, 0.5, 1, 2 kHz) for the left and right ear, respectively, with 53 dB and 48 dB (Figure 1). The tympanogram was measured bilaterally as type A. Bilateral

sensorineural hearing loss was diagnosed. There was no evidence in the patient's history except an upper respiratory tract infection which the patient suffered 1 week ago. Patient did not use any medication other than analgesic for his complaint of infection. Since there was no contraindication, the patient was given prednisolon 120 mg I.V. only one time and oral prednisolone therapy was started from 1 mg / kg, and the treatment was terminated by reducing the dose by 15 mg / day. The mean bone thresholds (0.25, 0.5, 1, 2 kHz) were measured for the left and right ear by 27 dB and 30 dB respectively on pure tone audiogram of the patient after treatment. (Figure 2). The patient himself reported that his hearing had improved. No side effects were observed during the treatment.

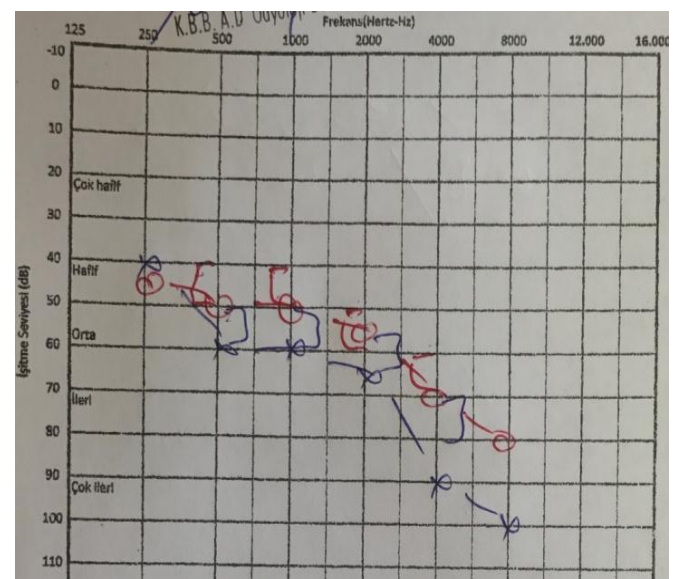


Figure 1: Pure Tone audiogram at first attempt

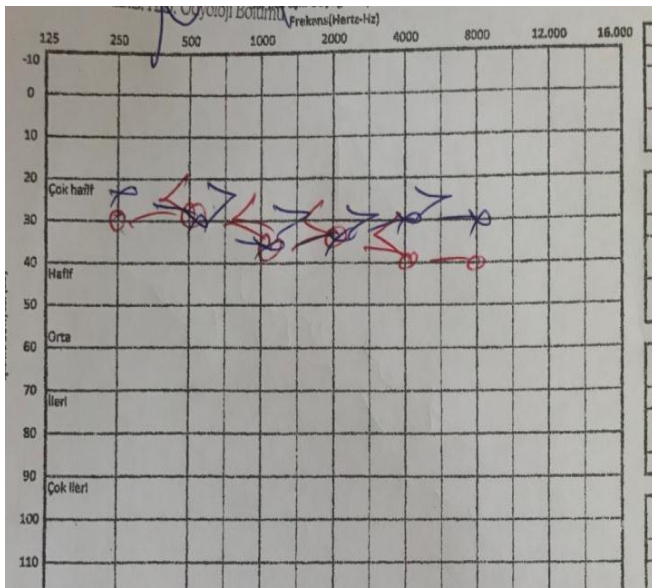


Figure 2: Pure Tone audiogram after prednisolone treatment

Discussion:

The definition of 'sudden hearing loss' was first made by Prosper Ménière in 1861.^[10] The first clinical study of sudden hearing loss was presented by DeKlein in 1944 with a series of 21 cases.^[1] Sudden hearing loss (SHL) is defined as sensorineural hearing loss, which starts within 72 hours and results in a loss of 30 dB or more in 3 consecutive frequencies. The treatment of SHL is still an autologic urgent and pathogenesis of disease is still controversial. Many factors are thought to play a role in etiology, but there is no obvious cause in many cases. SHL is usually seen in one ear and keeps two ears equally spaced.^[10] Bilateral incidence was reported as 4% in 1220 cases of Shaia and Sheehy.^[6]

The fact that SHL can be remedied by treatment, emphasizes the importance of emergency treatment.^[11] Sudden hearing loss in one ear is a very unsettling condition for the patient; Patients are faced with a perceived difficulty when they try to hear with the affected earphones while talking on the phone or in the audio environment. Besides, experiencing hearing loss in both ears makes the patient worse.

An underlying cause (acoustic neurinoma, etc.) can be detected in only 10% of patients who are diagnosed with sudden hearing loss.^[12] The remaining majority is considered idiopathic. The main reasons that are thought to play a role in etiopathogenesis; autoimmunity, viral and vascular factors. However, none of these reasons alone is enough to explain the pathogenesis. The rate of spontaneous recovery in patients with SHL who are left untreated ranges from 32% to 65% in the literature.^[13] The application period, the audiogram configuration, the age of the patient,

the presence of dizziness in the admission are parameters known to be effective in prognosis. It is very difficult to provide an effective treatment option for a disease that has not been proven certain etiopathogenesis.

Equality in the distribution of female / male ratio is observed as prevalence.^[14] The recovery period is usually the first 2 weeks. In parallel, the prognosis worsens with delayed healing.^[13] Inflammation in the affected ear is a common complaint, approximately 70% of patients with AIC are accompanied by indentation of the tinnitus. The prognostic effect of tinnitus varies; There are different studies reporting tinnitus as poor or good prognostic factor.^[14] Vertigo or feeling of imbalance is present at varying degrees in 40% of patients. Vertigo is often a poor prognostic factor.^[10] Very severe hearing loss is often a sign of poor prognosis. Losses with increasing tendency and moderate frequencies have better prognosis, prognosis is worse with decreasing prone and flat loss^[15] There was no reason to cause bad prognosis in our case.

Microvascular dysfunction secondary to systemic cardiovascular diseases such as embolism, vasospasm and hypercoagulation is a major cause of non-idiopathic bilateral sensorineural hearing loss. Developing hypoxia results in coclear damage and dysfunction.^[8] Systemic autoimmune diseases, abnormalities in the lipid panel and diabetes mellitus may also cause vascular obstruction.^[16] Also infectious conditions can cause sudden hearing loss on the basis of hypoxia. In our case the cause of hearing loss may be infection due to patient had no history of any cause except an upper respiratory tract infection in one week. It usually occurs at older ages.^[8] Although the cause is unknown, hearing loss is usually asymmetrical. The treatment is basically the same as in unilateral cases, but there is a tendency for more frequent use of the combination of steroid and vasodilator drugs. Auditory gain is achieved in 2/3 of the cases and this ratio is not statistically different from the unilateral group.^[8] High dose systemic steroid therapy is commonly used to treat sudden sensorineural hearing loss. However, some patients may experience side effects such as gastrointestinal problems, gluteal abscess formation and avascular necrosis during systemic treatment. In addition, 30% to 50% of patients do not respond to oral or intravenous high dose steroid therapy.^[17,18] In our case, single dose I.V 120 mg prednisolone followed by oral administration of 1 mg / kg orally improved recovery and no side effects were observed.

As a result, healing has been improved with the treatment we have given to the patient who is likely to have permanent hearing loss without treatment. We also believe that early initiation of treatment in patients with SHL is important for a good prognosis.

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