ORIGINAL RESEARCH

Evaluation of unilateral hearing loss

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Received: 19 January, 2020 Accepted: 27 February, 2020

ABSTRACT
Background: Deaf people suffer in silence since hearing disability is invisible, making its repercussions invisible to others. The present study was conducted to record unilateral hearing loss (UHL) in patients. **Materials & Methods:** 130 patients of hearing difficulty of both genders were selected.The ENT surgeon conducted a thorough ear examination. Analysis was done on the pure tone audiogram (PTA) records of patients who had complained of hearing loss. It was noted which unilateral sensorineural hearing impairments were present and to what extent. **Results:** Out of 130 patients, 72 were males and 58 were females. Type of hearing loss was sensorineural in 56, conductive in 44, and mixed in 30 patients. Severity of hearing loss was mild in 20, moderate in 62, moderately severe in 28, severe in 25 and profound in 15. The difference was significant ($P < 0.05$). **Conclusion:** Sensorineural hearing loss type is the most common type of hearing impairment among patients complaining of hearing loss.

Keywords: Deaf, Pure tone audiogram, Sensorineural hearing impairment

INTRODUCTION

Deaf people suffer in silence since hearing disability is invisible, making its repercussions invisible to others. Only one ear has HL in unilateral sensorineural HL (USNHL). The hearing ability of the opposite ear will be normal.[1] It may be a minor hearing loss that does not interfere with day-to-day functioning, or it may be a severe or profound loss that results in hearing impairment.[2] Despite the fact that HL is a relatively prevalent condition, very little research has been done on its occurrence and features. Ninety percent of cases of hearing loss are caused by SNHL, and about 32 million Americans suffer from some form of hearing impairment. Bilateral HL affects the great majority of patients with SNHL.[3]

Every year, there are about 60,000 new cases of USNHL in the US, and many more happen abroad. 4. Over the past 30 years, there have been substantial advancements in the diagnosis and treatment of pediatric hearing loss. The National Institutes of Health advised newborns to have their hearing checked within the first three months of their lives in 1993.[4] In order to establish guidelines for newborn hearing screening and for early hearing detection and intervention programs, as well as benchmarks for quality, tracking of outcomes, and initial management of infants with hearing loss, the Joint Committee on Infant Hearing—which is composed of representatives from numerous national organizations committed to ensuring early identification, intervention, and follow-up care of infants and young children with hearing loss—published statements in 1994, 2000, 2007, and 2019.[5]The present study was conducted to record unilateral hearing loss (UHL) in patients.

MATERIALS & METHODS

The present study comprised of 130 patients of hearing difficultyof both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. The ENT surgeon conducted a thorough ear examination. Analysis was done on the pure tone audiogram (PTA) records of patients who had complained of hearing loss. It was noted which unilateral sensorineural hearing impairments were present and to what extent. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 130		
Gender	**Males**	**Females**
Number	72	58

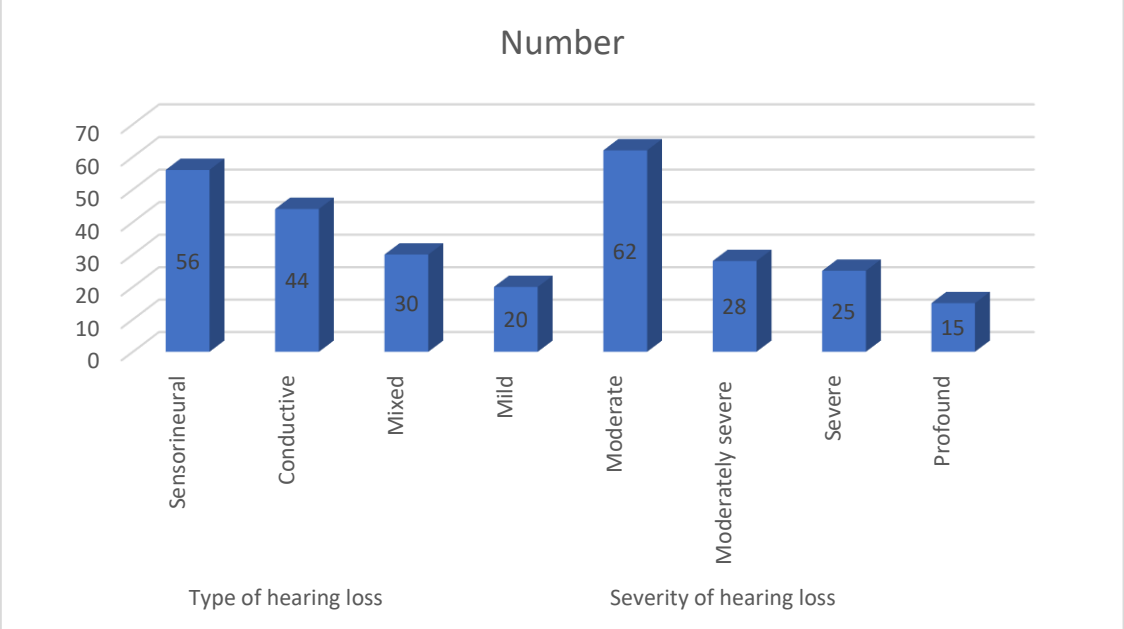
Table I shows that out of 130 patients, 72 were males and 58 were females.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Type of hearing loss	Sensorineural	56	0.05
	Conductive	44	
	Mixed	30	
Severity of hearing loss	Mild	20	0.03
	Moderate	62	
	Moderately severe	28	
	Severe	25	
	Profound	15	

Table II, graph I shows that type of hearing loss was sensorineural in 56, conductive in 44, andmixed in 30 patients. Severity of hearing loss was mild in 20, moderate in 62, moderately severe in 28, severe in 25 and profound in 15. The difference was significant (P< 0.05).

Graph I Assessment of parameters



DISCUSSION

Permanent bilateral severe to profound hearing loss affects 1.1 out of every 1000 babies, and this prevalence hasn't altered much over time. Additionally, 1 to 2 newborns out of every 1000 suffer unilateral hearing loss of any severity or bilateral mild to severe hearing loss. 7. However, because of effective screening systems, the age at which hearing loss is identified has significantly decreased. any reduction in the capacity to perceive sounds at normal thresholds.[6] Larger hearing level losses are categorized by severity, with a pure tone threshold average of greater than 15 dB at 500, 1000, 2000, and 4000 Hz being regarded as beyond the normal range for children. Below is a classification of hearing loss severity. When someone is unable to hear normal conversations without the use of hearing aids, deafness is frequently used as a substitute for substantial hearing loss. 8. Anyone with mild to moderate to fairly severe hearing loss who frequently benefits from hearing aids is referred to as hard of hearing.[7] The degree of hearing loss is mild: 16–25 dB hearing thresholds Mild: 26–40 dB hearing thresholds Moderate: 41–55 dB hearing thresholds Mildly severe: 56–70 dB hearing thresholds Severe: 71–90 dB hearing thresholds Hearing thresholds over 90 dB are considered profound.Irritability, body language and mannerisms that seem socially awkward or unusual, frequent headaches, stress, social isolation, chronic interpersonal communication difficulties due to the brain's inability to separate or beam from other people's sounds and voices,

jumpiness, anxiety-like appearance even in low-noise situations, difficulty identifying the source of sounds, and difficulty listening to what people are saying are all known symptoms of USNHL. Since the brain is overly focused on interpreting auditory information rather than nonverbal social cues, "evasive" conduct is misdiagnosed as attention deficit hyperactivity disorder, which appears to be a lack of awareness of other people's personal space and moods.[8]The present study was conducted to record unilateral hearing loss (UHL) in patients.

We found that out of 130 patients, 72 were males and 58 were females.Lieu JEet al[9]reviewed the current literature about the impact UHL has on the development of speech and language and educational achievement.Problems in school included a 22% to 35% rate of repeating at least one grade, and 12% to 41% receiving additional educational assistance. Speech and language delays have been reported in some but not all studies. School-age children with UHL appear to have increased rates of grade failures, need for additional educational assistance, and perceived behavioral issues in the classroom. Speech and language delays may occur in some children with UHL, but it is unclear if children "catch up" as they grow older. Research into this area is necessary to clarify these issues and to determine whether interventions may prevent potential problems.

We found that type of hearing loss was sensorineuralin 56, conductive in 44, and mixed in 30 patients. Severity of hearing loss was mild in 20, moderate in 62, moderately severe in 28, severe in 25 and profound in 15. Hol et al[10]evaluated the benefit of a bone-anchored hearing aid contralateral routing of sound hearing aid (BAHA CROS hearing aid) in 29 patients with unilateral inner ear deafness.Thirty patients were recruited. There were 19 patients with a history of acoustic neuroma surgery and 11 patients with unilateral inner ear deafness due to other causes; 1 patient was excluded. The first 21 patients had also participated in a previous evaluation.Audiometric measurements were taken before intervention, when fitted with a conventional CROS, and after BAHA implementation. Patients' subjective benefit was quantified with four different hearing aid-specific instruments: the Abbreviated Profile of Hearing Aid Benefit, the Glasgow Hearing Aid Benefit Profile, the International Outcome Inventory for Hearing Aids, and the Single-Sided Deafness questionnaire.Sound localization in an audiologic test setting was no different from chance level. The main effect of the BAHA CROS that was found was the "lift the head shadow" effect in the speech-in-noise measurements. All instruments also showed positive results in favor of the BAHA CROS at long-term follow-up.

CONCLUSION

Authors found that sensorineural hearing loss type is the most common type of hearing impairment among patients complaining of hearing loss.

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