ORIGINAL ARTICLE

SYMPTOMS ASSOCIATED WITH HEARING LOSS AS SEEN IN THE UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN CITY, NIGERIA

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ABSTRACT

Background: Many patients presenting with hearing loss have associated symptoms. The aim of this study was to document these associated symptoms.

Material & Methods: It was a descriptive study carried out between September 2004 and August 2005. All patients diagnosed as having hearing loss, using pure tone audiometry threshold measurement were assessed for associated symptoms apart from the hearing loss.

Results: Among 257 patients with hearing loss, 828 complaints of symptoms were associated with hearing loss in the 432 ears studied. Tinnitus occurred in 222(26.8%) ears, while nasal obstruction and catarrh in 112(13.5%) ears each. Itching and fullness in the ears were the next common symptoms.

Conclusion: A closer look at the other associated symptoms in hearing impaired patients is necessary in the overall management. It also follows that the presence of these associated symptoms may be a pointer to the presence of hearing loss.

KEY WORDS: Hearing loss, Tinnitus, Vertigo.

INTRODUCTION

It was projected that there would be 562 million people with hearing impairment in the world by 2005 by the World Health Organization.[1] A 1985 World Health Organization (WHO) resolution in relation to the prevention of deafness and hearing impairment, pointed out that much deafness and hearing impairment is avoidable or remediable and that developing countries had the greatest need for the prevention and remediation of hearing problems.[2]

Deafness and hearing impairment are major causes of disability in developing countries. Unfortunately, they are generally neglected in comparison with other disabling conditions. The reasons for this neglect are many. Principally, this is because deafness and hearing impairment produce unseen disability. There is also ignorance of the true size and nature of the problems and a conspicuous lack of resources to tackle these problems, particularly in developing countries.[2,3]

Another distressing aspect of hearing loss are the associated symptoms that are usually present in hearing impaired individuals. These symptoms include tinnitus, ear fullness, otalgia, otorrhoea, vertigo and many others. The symptoms are usually part of the disease entity causing the hearing loss.

A patient might be able to endure his level of deafness and complement it with rehabilitative options like lip-reading, sound amplification by various techniques etc, but the same patient might find an associated vertigo or tinnitus so distressful that he/she may subsequently develop psychosomatic illness.[4,5]

Common causes of sensorineural hearing loss include presbyacusis, chronic suppurative otitis media, Meniere's disease, ototoxic medications and noise exposure.[6] The other accompanying symptoms of these conditions usually tend to be associated with the hearing loss and are quite distressful to the patient.

Causes of conductive hearing loss include ear wax, otitis externa, otitis media, otitis media with effusion, temporal bone fracture, tumours of the middle ear etc[6].These conditions also give rise to associated symptoms that tend to complicate the hearing loss. In some instances, the associated symptoms like tinnitus, vertigo, might even be the presenting complain. It is only on further history taking that a history of hearing loss may even be volunteered.

Many patients presenting with hearing loss in the ENT Clinic have associated symptoms. This study was therefore conducted with the aim of documenting the associated symptoms of patients

with hearing loss. This will serve as a baseline study, both for the formulation of policies for the prevention, treatment and rehabilitation of patients with hearing loss and for future work on deafness in this region.

MATERIAL AND METHODS

This was a descriptive study conducted at ENT & Head & Neck Surgery Clinic of University of Benin Teaching Hospital, Benin city, between September 2004 and August 2005, of the symptoms associated with hearing loss. Approval for the study was granted by the ethical review committee of the hospital. All patients with a complaint of hearing impairment were evaluated to be enrolled for the study.

The criteria used for determining hearing loss in this study were: 1) Those with hearing threshold greater than 30dB in at least two of the frequencies (500Hz, 1kHz, 2kHz, 4kHz) for either air or bone conduction or for both. 2) Those that had an air-bone gap that was equal to or above 15dB. The patients with hearing loss, were then enrolled into the study, based on the following inclusion criteria: 1) Those who gave informed consent for this study. 2) Those that were up to and above ten years of age.

The exclusion criteria were: 1) Those who refused to give informed consent for this study. 2) Children who were less than ten years of age, to avoid inaccuracies in audiological testing. 3) Patients who were very ill who might not have responded accurately to audiological testing. 4) Suspected psychiatric patients who would have given inaccurate responses. 5) Those who did not perform pure tone audiometry for any constraint.

On attending the clinic, the patient was evaluated by a doctor who then sends the patient to the first author, if a diagnosis of hearing loss is made. The patient was then thoroughly evaluated to ascertain their eligibility for inclusion in the study, according to the criteria stated above. If eligible, the study was explained to the patient in a language he or she understood and informed written consent was obtained.

A general medical history was taken to ascertain associated symptoms with the hearing loss using the same adopted questionnaire format for each individual patient. A general examination was then carried out with emphasis on the otorhinolaryngological aspects. The findings were recorded in the adopted format.

Audiological measurements were done by pure tone audiometry (PTA) in a double-walled, sound-proof cabin using a duly calibrated (B & K artificial mastoid Type-4930) diagnostic audiometer of Amplaid 132 model, manufactured by the Biomedical Division of Amplifon SPA, Milano, Italy. It has well-fitting TDH49 earphones and RADIOEAR B-7 bone conductor. It was designed to meet all applicable specifications of ANSI S.3-6, 1969 and ISO 389 standards for medical equipment. PTA was done by employing standard procedures.[7-9]

All the patients were tested by the same trained and experienced audiology technician who knew the details of the study. Pure tone audiometry (PTA) threshold for each ear was determined at 250Hz, 500Hz, 1KHz, 2kHz, 4KHz and 8KHz by air conduction. Also bone conduction measurements were obtained at 500Hz, 1KHz, 2KHz and 4KHz with the appropriate bone vitrator placed on the respective mastoid bone to confirm the presence of hearing loss.

The hearing threshold of each hearing impaired ear was analyzed separately by finding the average of the air conduction at 500 Hz, 1 KHz, 2 kHz and 4 KHz respectively. The patients that were diagnosed as having hearing loss, had their medical findings adopted for this study. Data analysis was done manually, presenting the results in tabular formats.

RESULTS

There were 281 patients who presented with hearing loss during the period of the study at the E,N,T,H&N Surgery Clinic. Only 257 patients met the criteria for inclusion in the study. Twenty four patients were excluded from the study because they did not undergo pure tone audiometry due to different constraints.

Eighty two patients had hearing loss in only one ear, while 175 patients had both ears involved, giving a total of 432 ears with hearing loss that were studied. During this study period a total of

Table 1: Frequency distribution of symptoms associated with hearing loss.

Symptom	Frequency	Percentage
Tinnitus	222	26.8
Itching	102	12.3
Fullness in ear	92	11.1
Otalgia	81	9.8
Catarrh	112	13.5
Nasal obstruction	112	13.5
Otorrhoea	56	6.8
Vertigo	51	6.2
Total	828	100

980 new patients were seen in the ENT clinic of UBTH, Benin City.

Age ranged from 10 to 100 years, with a mean age of 40.5 ±19.4 years. There were 139 males (54.1%) and 118 females (45.9%) giving a male to female ratio of 1.2 :1.

There were of 828 complaints of symptoms associated with hearing loss in the 432 ears studied. Some ears had more than one associated symptom. Table 1 shows the frequency distribution of symptoms associated with hearing loss.

DISCUSSION

Table 1 shows the symptoms associated with hearing loss, with tinnitus being the commonest (26.8%).This is also similar to the report of Olusesi AD in Lagos with tinnitus being the commonest otologic symptom associated with sensorineural hearing loss, 27.6%.[10] Obiako similarly reported tinnitus as the commonest symptom associated with noise induced hearing loss among miners in Zambia copper belt. Although various mechanisms are responsible for the loss,[11] cochlear tinnitus generation results from discordant damage of outer and inner hair cells.[12]

In a recent review of the medico-legal aspects of tinnitus, it was concluded that the probability that tinnitus is a source of complaint and that it will be associated with a pattern of distress appears to be primarily related to the psychological characteristics of the individual, the stresses he or she is exposed to and the circumstances surrounding the onset of the tinnitus .[13]

The level of distress of these associated symptoms in hearing loss, can be imagined by the reported five case histories in which tinnitus patients committed suicide in four and one in which a patient was murdered by his son.[14]

Itching of the ear, which in most patients with hearing loss is due to otomycosis, can be so bad that it becomes a social embarrassment. The patient knowingly or in some cases by reflex, forms that habit of poking any object (broom-stick, toothpick, keys, feather, matchstick or even pieces of stick picked from the ground) intermittently into his external auditory canal trying to suppress the intense itching.

Taking care of the hearing loss without addressing the itching, cannot amount to effective patient management.

Degenerative changes have been described in the maculae,[15] the cristae ampullaris[16] and in the vestibular nerve[17] .All these will account for vertigo in presbyacusis and some other conditions, which is a major risk factor predisposing to falls among the elderly,[18] the significance of which lies in the high morbidity and indeed mortality, associated with falls occurring in this age group.

A closer look at the other associated symptoms will confirm that they are usually part of the disease entity presenting with hearing loss. It is therefore reasonable that these symptoms be addressed in a more holistic approach at the overall complaints of the patient, rather than just giving attention to the hearing loss.

It is also very important from this perspective to remember that the presence of these associated symptoms in a patient may sometimes indicate the presence of hearing loss, even if the patient never volunteered the information. The importance of these associated symptoms in the overall management of a patient with hearing loss can therefore never be over-emphasized.

CONCLUSION

Tinnitus, nasal obstruction, catarrh, ear itching and fullness are the common symptoms associated with hearing loss. A closer look at these associated symptoms in the hearing impaired patients is necessary in the management of these patients. The presence of these symptoms might be indicative of the presence of hearing loss in some patients.

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