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Letter to Editor

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Promoting a synergetic culture between audiologists and otolaryngologists for professional practice

Abstract

Healthcare is a dynamic field undergoing a paradigm shift, moving from a focus on technological aspects to a more patient centred rehabilitation. Effective communication among healthcare professionals can have a significant impact on patient's quality of care and health outcomes. Hearing healthcare is one such field where transdisciplinary approach is necessary due to the incorporation of technological advances in assessment and management of hearing disorders. This article outlines the importance of a synergetic work environment between ENT surgeon and Audiologist in preventing diagnostic errors and facilitating patient centred treatment for individuals with hearing impairment.

Keywords: synergetic approach, hearing healthcare,progressive sensorineural hearing loss, auditory neuropathy spectrum disorder

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Abbreviations: ISSNHL, idiopathic sudden sensorineural hearing loss; ANSD, auditory neuropathy spectrum disorder; ABR, auditory brainstem response; OAE, oto acoustic emission; SNHL, sensorineural hearing loss; CIC, completely in the canal; CBT, cognitive behavioral therapy; TRT, tinnitus retraining therapy; AIED, autoimmune inner ear disease; SNR, signal to noise ratio; DST, decreased sound tolerance;

Introduction

Healthcare is a diverse field where many specialties interact to provide appropriate patient care. The ENT and Audiology healthcare professions have grown exponentially worldwide in recent years. Changes in the attitude of these specialists towards a more holistic approach have helped promote the need for their services. Hearing healthcare is no longer the diagnosis and treatment of the impairment alone. Recent advances in technology have proven beneficial for facilitating positive hearing healthcare change. This positive change can be further strengthened by a synergy between these fields. Synergistic relationships create effective teamwork and better patient care in a timely manner. This approach is designed to meet the physical, emotional and psychological needs of the patient. For this collaborative approach to work, it is imperative that all healthcare professionals understand and respect the function of each member of the healthcare team. The ENT surgeons assess the structural and functional impairment of the ear and related structures through case history and clinical examination. Conversely, Audiologists provide quantitative and qualitative analysis of the hearing system. The management of the patient's hearing impairment will be incomplete if input from either of these two fields is ignored.

The synergistic work environment of the team is most successful when the ENT surgeon and Audiologist share compatible views in patient management for facilitating better hearing. A joint review following the assessment process provides several advantages to the professional team and patient management as follows:

Preventing diagnostic errors

An Idiopathic Sudden Sensorineural Hearing Loss (ISSNHL) will often get a referral to an ENT. However, the referral often ends up being too late for steroid treatment. After the audiological assessment, these patients should be referred to Emergency Clinics for prompt patient care. If a patient is fit with hearing devices without prior ENT consultation, some diagnoses could be missed. Although rare, medical clearance should be given to rule out conditions such as Vestibular Schwannoma or Cerebello-Pontine Angle Tumor.

If a patient attends an ENT clinic or other hearing clinic for a routine hearing assessment, they will often be sent home with no follow up when the routine test is within normal limits. If a comprehensive audiological test battery was completed, the patient may actually have "Auditory Neuropathy Spectrum Disorder" (ANSD). ANSD will only be confirmed with a comprehensive audiological test battery. ANSD has been traditionally diagnosed with absent or markedly abnormal auditory brainstem response (ABR) in combination with presence of otoacoustic emissions (OAE) and cochlear microphonics.[1] Conversely, all the above criteria can also be observed in children with sloping cochlear hearing loss.[2] In such a scenario, tone burst ABR may be performed to differentiate the two suggesting the routine hearing assessment should be revisited and addressed.

If a child with hearing impairment goes directly for an ABR assessment, co-existent acquired middle ear pathology may be completely missed. For example, a sloping sensorineural hearing loss (SNHL) with co-existent middle ear pathology may present with absent ABR waveform. However, if the proper test battery is not completed, the treatable co-existing middle ear pathology could be missed.

Patients who have an intact tympanic membrane but exhibit a conductive hearing loss should have acoustic reflexes tested as well. If not, then a diagnosis of "Semicircular Canal Dehiscence" may be mis-diagnosed as Otosclerosis.[3]

Holistic approach to management

If an accurate diagnosis for hearing impairment is determined, the prognosis for effective treatment is much greater. An individual management protocol with effective teamwork ensures a holistic approach to address the patient's needs. Examples are as follows:

With the introduction of programmable, digital hearing aids, we have been given much greater flexibility to individually program the hearing aids for the patient's needs. Utilizing best practices for assessment, hearing aid fitting verification, and proper follow-up care are extremely important for optimizing results. For instance, fitting

completely in the canal (CIC) hearing aids for a patient with diabetes and long standing dry perforation requires input from the ENT surgeon to discuss proper ventilation of the ear, sanitizing the hearing aids, and incorporation of possible medical intervention to ensure the perforation stays dry with hearing aid use.

Tinnitus is a problem that most ENT surgeons and audiologists face on a daily basis. Eighty to ninety percent of tinnitus patients show some evidence of hearing loss. However, the number of people with tinnitus who have some damage to the auditory system may be even higher because a routine audiogram does not reflect damage to the auditory system until enough hair cell damage has occurred. With therapeutic approaches, there is really no clear solution because there are so many causes of tinnitus. Recent technological advances have provided satisfactory results in the management of tinnitus. Tinnitus management should be tailored to each individual's functional and financial needs. Physicians and other specialists should refrain from telling patients that they have to "learn to live with it" or "just ignore it." There are many tinnitus management options such as Cognitive Behavioural Therapy (CBT), Tinnitus Retraining Therapy (TRT), and combination instruments that allow for amplification and/or sound generator support to be fit with one device.

Autoimmune inner ear disease (AIED) is defined by bilateral progressive SNHL, exclusion of other known causes of SNHL and a positive response to steroid therapy. Steroid responsiveness is the most useful method of making the diagnosis, but it is critical to differentiate it from ISSNHL, since both conditions respond to steroid therapy. As ANSD can also present as a bilaterally progressive SNHL, ABR testing should be done to differentiate the two conditions.

Comprehending telephone conversation has always been a significant challenge for hearing aid users; the reasons being lack of visual cues, limited bandwidth of the signal, cumbersome coupling of the devices, acoustic feedback issues and interfering background noise. The new adaptive streaming volume algorithms adapt the general streaming volume to individual loudness preferences by changing general loudness of the source and provides substantial signal to noise ratio (SNR) improvement for both open and closed ear canal conditions. Wireless Bluetooth connectivity for mobile phones allows for improved telephone communication as the conversation is directed wirelessly into both ears. Telecoil function for telephone use is still a viable solution for optimizing phone use.

Decreased sound tolerance (DST) is a new entity which remains a complex and elusive phenomenon. Recently DST has attracted greater attention and management plan is based directly on information from the clinical history, examination, and audiological testing. Care must be taken to avoid performing high level speech testing and acoustic reflexes in these patients since these tests can trigger the sound tolerance issue. A multi-disciplinary management strategy is recommended starting with intensive counselling, sound stimulation and regular follow-up to monitor progress.

Conclusion

In summary, a comprehensive hearing healthcare team working in synergy can provide quality care for hearing impaired patients. While it is important to avoid overburdening the healthcare system, proper initial diagnoses and treatment will reduce the cost of long term follow up care. The current routine hearing assessment battery should also be addressed. Patients with similar audiological characteristics may exhibit various degrees of communication handicap. Rehabilitation approaches should be based on addressing individual patient needs rather than just treating the results of the investigations. Patient health outcomes can be improved upon only with effective communication between hearing health care professionals.

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Conflicts of interest

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