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MUSICAL EAR SYNDROME

Mental Health Nursing

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KEYWORDS

INTRODUCTION

Musical Ear Syndrome (MES) is an uncommon phenomenon described as the perception of auditory musical sensations not corresponding to any external stimulus. It seems to be more frequent in case of profound hearing loss [1]. Our objective was to evaluate prevalence, characteristics and risk factors in a population of cochlear implant patients [1, 2].

Musical ear syndrome also known as musical hallucinations or auditory hallucination is a condition that causes patients with hearing impairment to have non-psychiatric auditory hallucinations characterized by songs, tunes, melodies, harmonics, rhythms, and/or timbres [3]. Hallucinations are usually musical in nature and can range from popular music, orchestral symphonies, or radio tunes without words but a few people have reported that they hear songs with words. In advanced age, musical ear syndrome could be confused with dementia [4, 5]. In addition, musical ear syndrome is suggested to be a variant of Charles Bonnet syndrome (visual hallucinations in visually impaired patients) by some authors [6]. Although its mechanism is unknown, secondary to hearing loss, phantom sounds are thought to be caused by hypersensitivity in the auditory cortex associated with sensory deprivation [7]. Usually, it is experienced by older people with hearing loss and tinnitus, who live alone and may not have the auditory or social stimulation they once had. Musical ear syndrome may occur especially when it is quiet, when they are stressed, or if they are taking medications with inconsistent dose management. In these regards, it is worth noting that that musical ear syndrome and auditory hallucination can begin to overlap and merge in the absence of appropriate and sufficient mental health monitoring [8, 9]. Loneliness may be an important factor and increasing social interactions and conversations can be beneficial [10].

Everyone listen the songs what if song get stuck in their head for a while. It happens when you think you're hearing a tune that's not actually playing [11]. Person can develop auditory hallucination which is being also associated with musical ear syndrome [12].

Fig. 1: Hearing songs on Headphone

A very rare case had come in front an 87-year-old woman has been admitted to neurology outpatient clinic, complaining about hearing a concert play for a month that no one else was hearing [13, 14]. She used to think that these sounds were coming from the next door. When the music became persistant, she realised that her relatives were not hearing these sounds, and she really got confused [15]. Her medical history included hypertension and bilateral sensorineural hearing loss caused by presbiacusia [16]. Audiogram showed 75% hearing loss on the right ear and 95% hearing loss on the left ear. Her vital signs were normal [17]. She was alert, fully oriented, and had a normal cognitive profile. Her physical and neurological examinations were normal. Her brain magnetic resonance imaging (1.5 T) and electroencephalography showed no relevant pathology [18]. Although quetiapine had been started for hallucinations (at the dose of 50 mg/day), she showed no change in her symptoms [19]. The patient and her family were informed about the nature of hallucinations, and quetiapine was discontinued [20]. Doctor suggested the patient to maximize hearing with a hearing aid and enrich the environment with sound, which will give the brain much-needed input to reduce its own generated sound. The patient is still followed up and is complaint-free [21].

Definition

Musical ear syndrome (MES) is a condition that causes patients with hearing impairment to have non-psychiatric auditory hallucinations [22].

Fig. 2: Sound Hearing Capacity

Most individuals who are experiencing these auditory hallucinations are not diagnosed with any type of psychiatric condition like schizophrenia, so the origin of the musical hallucinations is largely unknown [22, 23]. The patient experiencing the hallucinations might think that the music is coming from an external source, but eventually they discover that their minds were generating the sound. This experience can be disturbing for patients, but education about musical ear syndrome and its symptoms is usually helpful [24].

Epidemology

Musical Ear Syndrome is a rare condition. The disease has been identified in both male & female in many countries [25].

CAUSES

There is no single cause of MES, but medical professionals believe that it's a response to the auditory deprivation that occurs with hearing loss [26]. When your brain doesn't hear enough sounds, it overcompensates for the lack of stimulation and starts to generate sounds by itself [27].

In Musical Ear Syndrome the individual may experience music or sounds that are heard without an external source. It is postulated that by the "release phenomenon" [28].

Etiology.

Understanding what causes Musical Ear Syndrome is essential to treating it effectively. Unfortunately, however, no single clear cause for the condition has been found [29]. Evers and Ellger (2004) created a comprehensive list of the most prominent suspected causes of musical hallucinations. Hearing loss seems to be the most common factor associated with the condition, but psychiatric disorders like depression, dementia, and schizophrenia have also been linked to the disorder. Another prevalent theory regarding the etiology behind Musical Ear Syndrome is Musical Ear Syndrome 12 that false perceptions of sound can be caused by "hypersensitivity in the auditory cortex associated with sensory deprivation" (Çakmak et al., 2016, p. 91) [30]. In other words, in some individuals, the brain is not receiving any outside auditory stimuli, so it adapts by creating its own. Similarly, another theory is that musical hallucinations are the auditory form of Charles-Bonnet syndrome (Evers & Ellger, 2004) [31]. This syndrome is a condition that causes "visual hallucinations in individuals without mental disorders" and is also thought to be caused by sensory deprivation (O'Farrell, Lewis, McKenzie, & Jones, 2010, p. 261) [32]. A hearing condition called otosclerosis, caused by "abnormal bone homeostasis of the otic capsule" is another possible cause of musical hallucinations (Focseneanu & Marian, 2015, p. 534) [33]. Yet another suspected cause is brain lesions, especially those of the temporal cortex (Evers & Ellger, 2004) [34], where most of the brain's hearing capabilities are housed. One study even reported a patient who began experiencing musical hallucinations after a car wreck that resulted in a whiplash neck injury, but no evident damage to the brain (Bhatt & Carpenter, 2012) [35]. Additional theories regarding the source of musical hallucinations include epileptic brain activity, intoxication, and withdrawal from intoxication (Evers & Ellger, 2004). Coebergh, Lauw, Bots, Sommer, and Blom (2015) compiled etiology information from 276 cases of musical hallucinations and found hypoacusis, also known as hearing loss, to be the most common causation. The following table appears in their article on treatment effects for musical hallucinations (Coebergh et al., 2015, p. 4) [36, 37].

How To Recognize Musical Ear Syndrome?

Musical ear syndrome (MES) is a condition that causes patients, usually with some level of hearing impairment, to report hearing music when there is none. Most individuals who are experiencing these auditory hallucinations are not diagnosed with any type of psychiatric condition like schizophrenia, so the origin of the musical hallucinations is largely unknown. These hallucinations can range from radio songs, orchestra music, and popular music [38], to non-specific rhythms, tunes, harmonies, timbres, etc [39]. At first, the patient experiencing the hallucinations might think that the music is coming from an external source, but eventually they discover that their minds were generating the sound [40]. This experience can be disturbing for patients, but education about musical ear syndrome and its symptoms is usually helpful.

Treatments

Given the unknown nature of MES, treatments have been largely dependent on an individual basis. Treatments can vary from being as little as self-reassurance to pharmaceutical medications [41]. Medications can be helpful, such as antipsychotics, benzodiazepines or antiepileptics, but there is very limited evidence for this. Some case studies have found that switching to a prednisolone steroid after a betamethasone steroid which caused MES helped alleviate hallucinations or the use of the acetyl cholinesterase inhibitor, donepezil, have also found that it successfully treated an individual's MES [42, 43]. However, because of the heterogeneous etiology, these methods cannot be applied as general treatment [44].

Other than treatment by medicinal means, individuals have also successfully alleviated musical hallucinations by cochlear implants, listening to different songs via an external source, or by attempting to block them through mental effort, depending on how severe their condition is [45] Hallucinations can be reduced by providing the brain with a percentage of the lost input from the hearing loss, and patients can maximize their hearing capability by utilizing hearing aids. Hearing aids can make up some of the patients hearing loss, and potentially alleviate these musical hallucinations [46]. However, this has not been found to be effective for all patients [47]. It is believed that non-drug treatment options are better than drop options for the elderly population that may suffer from MES [48].

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