



LETTERS TO EDITOR

The woman who heard Portuguese folk music: A case report of idiopathic musical hallucinosis

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Musical hallucinosis (MH) consists of hearing songs, melodies, rhythms and/or timbres which are perceived in the absence of acoustic stimulus¹. Its content is generally familiar to the patient (e.g. childhood tunes, religious songs)², and although not being threatening or scary in nature, it usually has a negative impact on daily functioning¹. The onset is frequently abrupt and sometimes the phenomenon is continuous³. MH is more frequently experienced in the external objective space¹ and can be repetitive as well as stereotyped (stable MH) or more elaborated and prone to change (complex MH)¹.

It can occur in multiple pathological contexts such as acquired moderate to severe hearing loss, psychotic or mood disorders, focal brain lesions, general brain atrophy, epilepsy, or encephalopathy^{1,4}. Other possible contributing factors include advanced age, female sex and social isolation⁵. Some drugs and substances have also been described to induce MH^{2,4}.

Case Report

A 79-year-old female attended neurology and psychiatric appointments with a 10-year history of MH. She was illiterate, retired and completely independent in all her activities. Her relevant medical history included hypertension and chronic bronchitis, for which she was medicated with a salmeterol/fluticasone propionate metered dose inhaler containing 25/50 micrograms prn (rarely used), 5/25mg/day of ramipril/hydrochlorothiazide and 10mg/day of lercanidipine. She was also controversially medicated with 0.5mg of alprazolam and 2.5mg of lorazepam once a day, at night, by primary health care to respond to her complaints of insomnia due to hallucinations.

The patient described hearing Portuguese folk music and songs from her youth for 10 years, which started abruptly. Sometimes hallucinosis took on a less organized form,

like indistinct noises and buzzes. This was more severe at night during moments of silence (periods of less interaction and stimuli) and occurred bilaterally. The patient had insight into the unrealistic nature of her abnormal auditory experiences and there was no evidence of secondary delusions. Difficulty falling asleep due to hallucinations was the symptom that disturbed her the most, so she was given benzodiazepines. There were no more associated complaints. Her daughter had a similar history in the context of severe loss of auditory acuity.

The patient had no known history of alcoholism, cerebrovascular disease or family history of dementia. She had no other significant psychiatric history. There was no temporal association between the onset of symptoms and changes in drug therapy.

A neurological examination did not show any significant alterations or deficits other than a congenital convergent strabismus of the right eye. There was no evidence of cognitive impairment or hearing loss and no complaints suggesting epileptic seizures.

Blood tests were performed (blood count; ionogram; liver, renal and thyroid function tests; C-reactive protein) and urinalysis, with normal results. Urine screening for drug abuse came negative for opioids, cannabinoids and heroin. An electroencephalogram, audiogram and tympanogram were performed and were normal. Magnetic resonance imaging of the brain revealed the presence of non-recent ischemic cerebrovascular changes involving the periventricular and subcortical fronto-parietal white matter and bilateral changes on the striatal-capsular level.

Considering the common refractoriness of MH to pharmacological approaches, and the patient's advanced age plus medical comorbidities, no psychotropic drug was introduced. Psychoeducational advice was provided to reassure and clarify the nature of her symptoms, which she seemed to understand. Therapeutic adjustment of the hypnoinductive medication was performed.

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Discussion

The clinical report described is illustrative of MH, but what makes it peculiar and unique is the fact of being idiopathic since the patient did not show any hearing impairment, significant structural brain damage, underlying psychiatric illness or cognitive decline suggestive of dementia. It is also unlikely that the cause is drug-related since no temporal relationship was found between any prescribed drug and the development of the symptoms. Therefore, the patient was diagnosed with idiopathic MH. This case report highlights that MH is a poorly understood phenomenon, particularly without the presence of the most frequent underlying causes.

Its pathophysiology is not completely clear. The few functional imaging studies carried out so far indicate that MH occurs in conjunction with activity in an extensive network of areas of the brain, which includes auditory and visual areas, motor cortex, basal ganglia, brainstem, pons, tegmentum, cerebellum, hippocampi, amygdala, and even the peripheral auditory system¹. In most cases of MH there is a release of activity in the musical network when normal mechanisms of inhibition or constraint are weakened¹. In moderate or severe acquired loss of hearing ability or deafness, the most common clinical condition associated to MH^{1,4}, it can be considered analogous to visual hallucinations present in visual handicapped patients, known as Charles Bonnet syndrome¹. In both, the networks normally involved in musical and visual percep-

tion start to fire autonomously, in the absence of adequate perception by the sensory organs. Thus, in these cases, MH results from a deafferentiation phenomenon¹.

In the presence of MH, it is necessary to investigate the existence of an underlying pathology which, if present, should be treated first^{1,6}. In idiopathic cases, the fact that the underlying cause is unknown poses further problems providing satisfactory relief from these symptoms. In the absence of an identifiable cause, symptomatic treatment could involve the prescription of anticonvulsants, antidepressants, antipsychotics^{1,6} or even acetylcholinesterase inhibitors, as recent evidence suggests⁶.

However, the majority of cases of MH seem to be refractory to current treatment methods, especially idiopathic ones¹. Furthermore, it is always necessary to outweigh the risks and benefits of using such drugs and, in these idiopathic cases, giving psychoeducational advice¹, encouraging social interaction, promoting behavioral modifications and, eventually, proposing cognitive-behavioral therapy⁶ is mostly important, although, in some cases, MH can remit without intervention⁶.

Quite often the patient's fear is being perceived as mentally ill or demented and so they tend to hide these anomalous perceptive experiences from others¹. As such, it is very important to be suspicious about the presence of these symptoms, particularly when the patient has risk factors for developing MH.

Bibliography

1. Blom JD: «Auditory hallucinations», in *Handbook of Clinical Neurology*, Vol. 129, 1.st edition. Edited by G.G. Celesia, G. Hickok. Elsevier, 2015, pp. 433-455.
2. Tomar A, Cheung G. Musical hallucinations induced by drugs. *Int Psychogeriatr* 2007; (19): 1169-1172.
3. Mahendran R. «The psychopathology of musical hallucinations». *Singapore Med J* 2007; (48): 68-70.
4. Evers S, Ellger T. The clinical spectrum of musical hallucinations. *J Neurol Sci* 2004; (227): 55-65.
5. Fischer CE, Marchie A, Norris M. Musical and auditory hallucinations: A spectrum. *Psychiatry Clin Neurosci* 2004; (58): 96-98.
6. Coebergh JA, Lauw RF, Bots R, Sommer IE, Blom JD. Musical hallucinations: review of treatment effects. *Front. Psychol* 2015; (6): 814.