SM Case Reports ISSN: 2473-0688

Case Report

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Psychogenic Hearing Loss: A Frequently Overlooked Part of Post Traumatic Brain Disorder

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Abstract

Psychogenic hearing loss is a frequently overlooked part of complex post traumatic trauma. This is a relatively new discovery as it has been mainly linked to hyperacusis before.

The association of PTSD and psychogenic hearing loss is relatively new. Therefore, more investigation is needed, especially in the field of possible therapy options of said hearing loss,. Because little research and studies on this topic have been conducted, the treatment options are still limited and not well researched. Psychogenic hearing loss plays a big role in the day to day life of the patients and significantly lowers the life quality of the patients. Therefore it is crucial to find possible treatment options and strenghten the collaboration between the different medical personell working with these patients like audiometrists, ENT and psychiatry.

Keywords: Postraumatic stress disorder; Psychogenic hearing loss; Soldiers; Self-percieved hearing loss

Case Presentation

A 28 year old ukrainian soldier presented to our apartment of our hospital with the question if a cochlear implant is indicated on his left ear after suffering from a blast injury with mild concussion in the war with Russia, after an explosive device detonated 3-4 meters in front of him. He was already using a hearing aid on his right ear that helped him; but still suffered from tinnitus and worsening hearing loss in both ears since the incident. He also had trouble falling and staying asleep but denied having intrusive thoughts and memories. Other than that, he suffered no injuries and had no relevant comorbidities.

The physical examination of the ears and nasopharyngolaryngoscopy relevaled no pathologies (Figure 1).

To rule out organic injuries that would explain the hearing loss, we also ran a CT of the petrous bone which indicated no traumatic injury, the head mri that followed because of reoccuring headaches also showed no signs of an anatomic equivalent of the hearing loss (Figure 2).

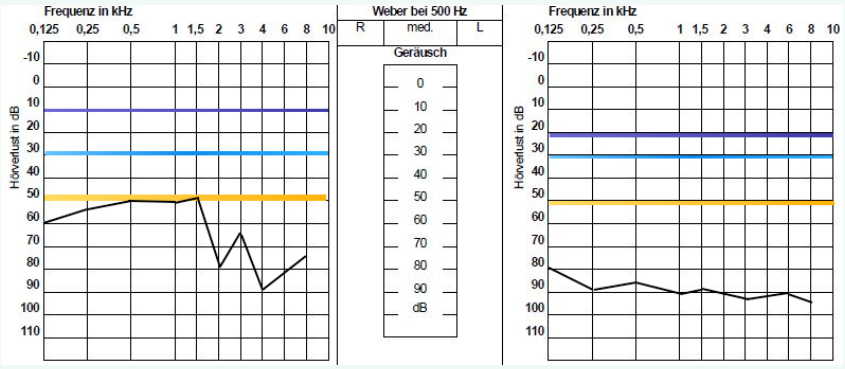

Figure 1 The tone audiometry confirmed surdity of the left ear and severly impaired hearing in the right ear (black line). The BERA showed the objective hearing assessment of the patient (violett) while the Transitory evoked otoacustic emissions (TEOAE, blue line) and distortion product otoacustic emission (DPOAES, yellow line) were measurable in both ears, suggesting a hearing threshold of at least 30dB (TEOAE) and 50dB (DPOAE).

Submitted: 16 February 2024 | **Accepted:** 24 April, 2024 | **Published:** 26 April, 2024

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Citation: Neff V, Schmidt S, et al. (2024) Psychogenic Hearing Loss: A Frequently Overlooked Part of Post Traumatic Brain Disorder. SM J Case Rep 10: 2.

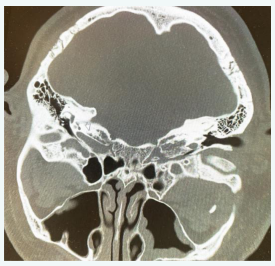

Figure 2 CT of the petrosus bone showed no abnormalities.

Discussion

Posttraumatic stress disorder is a widespread issue in battle-injured soldiers_that includes symptoms such as being easily startled, always being on guard for danger, self-destructive behavior, trouble sleeping and concentrating and irritability, angry outbursts or aggressive behavior that about 30% of soldiers who experienced any potentially life threatening combat exposures develop [1,2]. We still do not know why some soldiers develop it while others seem to be resilient to it. Also, we still do not know all the symptoms in which it can show up in the body. Usually, it is accomponied by hyperacusis, but it can also show up in a more unusual way like in our patient, who experienced sudden hearing loss and tinnitus [3]. We must not underestimate the suffering of the patients. While the hearing loss was not objectivelty measurable the case of our patient, he still suffered from it and even wore a hearing aid which could potentially lead to further damage in his hearing, all because to him, the hearing loss was real. We offered to help him stay in Germany, but he was determined to return home in order to not leave his comrades alone.

More studies will need to be conducted on the various symptoms in which this complex disease shows up in patients to develop effective therapies to help them lessen the severity of these symptoms. The treatment for PTSD includes psychotherapy and if needed medication but the most important part of healing is overcoming the shame of admitting that they have a mental problem and to overcome the stigma in society that comes with it. We need to do better and educate the public about this disease, that it is not a weakness and help take the preventive measures.

By the discrepancy in the objective measuring of his hearing and his self-perceived hearing loss_we also need to educate audiologists and doctors to not dismiss these patients an especially not accuse them of simulating their symptoms. It is crucial to make them aware that this discrepancy can also be explained as a symptom of posttraumatic stress disorder as the suffering of the patients is very real and needs to be addressed and treated accordingly [4-6].

Often blast injuries are associated with measurable hearing loss which can be addressed with hearing aids or a cochlear operation [7]. However, patients with psychogenic hearing loss are a special case because there is no psychical equivalent and their hearing loss cannot be treated like organic hearing loss. We do not yet know which methods help best with this condition. It is also possible that it might not need to be addressed individually and will improve with the overall treatment of the underlying condition, the posttraumatic stress disorder.

So far, the research in psychogenic hearing loss has mostly been focused on children, not so much on adults. It should clearly be distinguished from simulation of hearing loss [8].

Conclusion

There have been regional armed conflicts in Ukraine since February 2014. In 2022, the fighting intensified, and war broke out, putting a strain on the entire population, especially the fighting. The effects can be seen as an example for a permanent burden with daily fear of death. So, more studies and research will need to be conducted on psychogenic hearing loss linked to PTBS. The goal should be to explore the possible treatment options to ensure the best benefit for the patient.

Acknowledgments: This study was self-funded by the authors.

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