

# UC Irvine

## UC Irvine Previously Published Works

### Title

In Reference to A Modern Case Sheds Light on a Classical Enigma: Beethoven's Deafness

### Permalink

<https://escholarship.org/uc/item/6t9276dh>

### Journal

The Laryngoscope, 131(6)

### ISSN

0023-852X

### Authors

Tsutsumi, Kotaro

Abouzari, Mehdi

Djalilian, Hamid R

### Publication Date

2021-06-01

### DOI

10.1002/lary.29470

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution-NonCommercial License, available at <https://creativecommons.org/licenses/by-nc/4.0/>

Peer reviewed



Published in final edited form as:

*Laryngoscope*. 2021 June ; 131(6): E2044. doi:10.1002/lary.29470.

## In Reference to *A Modern Case Sheds Light on a Classical Enigma: Beethoven's Deafness*

Kotaro Tsutsumi, BA<sup>1</sup>, Mehdi Abouzari, MD, PhD<sup>1</sup>, Hamid R. Djalilian, MD<sup>1,2</sup>

<sup>1</sup>Department of Otolaryngology–Head and Neck Surgery, University of California, Irvine, USA

<sup>2</sup>Department of Biomedical Engineering, University of California, Irvine, USA

---

Dear Editor:

We read with great interest the article entitled “A Modern Case Sheds Light on a Classical Enigma: Beethoven’s Deafness” by Brotto *et al.*<sup>1</sup> Researchers have continuously sought to uncover underlying causes for hearing loss of the great composer and pianist, Ludwig van Beethoven. Authors explore this subject and ultimately support the lead poisoning hypothesis, given Beethoven’s dependence on alcohol, often infused with lead at his time, presence of elevated lead in his hair and deep bone, and a case of a modern patient who presents with hearing loss similar to Beethoven’s due to lead poisoning. We commend authors’ robust exploration of this enigma and concur that lead poisoning remains a highly probable cause. Given such, we would like to provide few insights from our previous study on this topic.<sup>2</sup>

As authors referred to in their study, Beethoven suffered from progressive hearing loss, hyperacusis, tinnitus, and diminished speech discrimination without vertigo that eventually progressed to profound deafness.<sup>3,4</sup> Additionally, multiple studies have illustrated that he suffered from chronic headache.<sup>5</sup> Consequently, we believe it is appropriate to call to attention the possibility that Beethoven’s various symptoms were cochlear migraine related.<sup>6,7</sup> Beethoven suffered colicky abdominal pain and bouts of diarrhea and constipation that began around the same time as the onset of his headache, which have often led researchers to believe he suffered from inflammatory bowel disease.<sup>8</sup> However, such symptoms have been linked with migraine and could very well have been its consequence.<sup>9,10</sup> Since his alcohol abuse began concurrently with his headache and gastrointestinal symptoms, one could assume that such behavior was elicited as an attempt to alleviate his symptoms. Alcohol, however, is a trigger for migraine and may have contributed to exacerbation of his symptoms.<sup>11</sup> Beethoven has also been described to have had poor, “fitful” sleep and depressive symptoms, which are associated with migraine.<sup>12,13</sup> Finally, neuromuscular symptoms commonly seen with chronic lead poisoning are lacking from Beethoven’s

---

**Corresponding Author:** Hamid R. Djalilian, MD, Division of Neurotology and Skull Base Surgery, Department of Otolaryngology–Head and Neck Surgery, University of California Irvine, 19182 Jamboree Road, Otolaryngology-5386, Irvine, CA 92697, Phone: (714) 456-5753, Fax: (714) 456-5747, hdjalili@hs.uci.edu.

**Financial Disclosure:** None

**Conflict of Interests:** None

clinical presentation. While such symptoms are not necessary for diagnosis, lack of a common indicator is important to consider and substantiate other pathologic causes.

Despite such hypotheses, it is extremely difficult to establish causation in this presentation. Manifestations of Beethoven's illness overlap among different pathological indications, and it is difficult to discern what specifically caused each of his symptoms. That being said, further studies on cochlear migraine as well as lead poisoning as possible causes of the musical giant's hearing loss will be of great merit.

## References

1. Brotto D, Fellin R, Sorrentino F, Gheller F, Trevisi P, Bovo R. A Modern Case Sheds Light on a Classical Enigma: Beethoven's Deafness. *Laryngoscope*. 2021;131(1):179–185. [PubMed: 31904878]
2. Kanwar SK, Brandon B, Djalilian HR. Beethoven's deafness: Migraine-related hearing loss? *Bulletin American Academy of Otolaryngology-Head and Neck Surgery*. 2014;33: 40–41.
3. Cooper AZ, Nair SS, Tremaglio JM. Diagnosing Beethoven: A New Take on an Old Patient. *Am J Med*. 2016;129(1):126–127. doi:10.1016/j.amjmed.2015.07.030 [PubMed: 26291909]
4. Shearer PD. The deafness of Beethoven: an audiologic and medical overview. *Am J Otol*. 1990;11(5):370–374. [PubMed: 2240185]
5. Oiseth SJ. Beethoven's autopsy revisited: A pathologist sounds a final note. *J Med Biogr*. 2017;25(3):139–147. [PubMed: 26508624]
6. Hwang JH, Tsai SJ, Liu TC, Chen YC, Lai JT. Association of Tinnitus and Other Cochlear Disorders With a History of Migraines. *JAMA Otolaryngol Head Neck Surg*. 2018;144(8):712–717. [PubMed: 30003226]
7. Lin HW, Djalilian HR. The Role of Migraine in Hearing and Balance Symptoms. *JAMA Otolaryngol Head Neck Surg*. 2018;144(8):717–718. [PubMed: 30003218]
8. Kubba AK, Young M. Ludwig van Beethoven: a medical biography. *Lancet*. 1996;347(8995):167–170. [PubMed: 8544554]
9. Naphali K, Koloski N, Talley NJ. Abdominal migraine. *Cephalalgia*. 2016;36(10):980–986. [PubMed: 26582952]
10. Dimitrova AK, Ungaro RC, Lebwohl B, et al. Prevalence of migraine in patients with celiac disease and inflammatory bowel disease. *Headache*. 2013;53(2):344–355. [PubMed: 23126519]
11. Marmura MJ. Triggers, Protectors, and Predictors in Episodic Migraine. *Curr Pain Headache Rep*. 2018;22(12):81. [PubMed: 30291562]
12. Mai FM. *Diagnosing Genius: The Life and Death of Beethoven*. McGill-Queen's University Press; 2007.
13. Davies PJ. *Beethoven in person: his deafness, illnesses, and death*. Greenwood Press; 2001.