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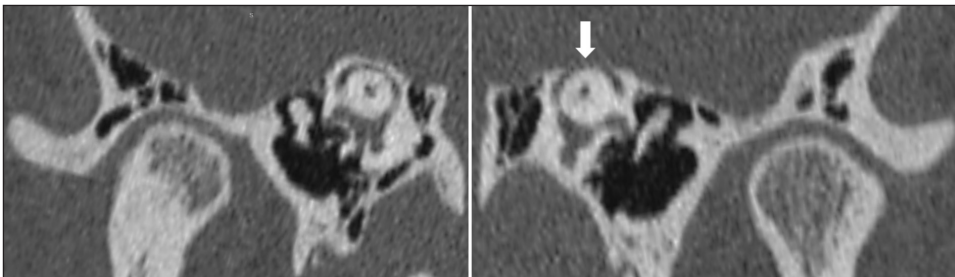
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## Eye Movement Autophony: A Unique Presenting Symptom of Semicircular Canal Dehiscence Syndrome

A 31-year-old woman presented with the very unusual symptom of being able to hear the movement of her eyeballs in her left ear: “I can hear my eyeballs move!” She initially described hearing a recurrent “swishing” sound that would occur intermittently. She eventually realized that its occurrence coincided with eyeball movement. In the eight months’ duration of her symptom, she had been unable to obtain a diagnosis from physicians whom she consulted and had even been referred for psychiatric evaluation and treatment. An otolaryngologist whom she consulted had a standard pure tone audiometric examination done, and this showed normal hearing acuity in both ears. A Magnetic Resonance Imaging (MRI) of the inner ear and brain likewise showed no abnormalities. Due to the peculiarity of the patient’s complaint, the otolaryngologist consulted with a neurotologist who suspected the presence of a semicircular canal dehiscence. A computerized tomographic imaging study of the temporal bone confirmed the presence of a left superior semicircular canal dehiscence syndrome. (Figures 1 & 2)



**Figure 1.** Coronal CT image at the level of the anterior (ampullated) limb of the superior semicircular canal shows the absence of bone that normally caps the left superior semicircular canal (white solid arrow) and separates it from the intracranial contents of the middle cranial fossa.



**Figure 2.** Reformatted CT images in the Pöschl projection, which is an oblique coronal image along the long axis of the superior semicircular canal allows visualization of this canal as a complete ring. The dehiscence left superior semicircular canal is clearly demonstrated (white solid arrow).

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First described by Minor *et al.* in 1998, superior semicircular canal dehiscence syndrome is a neurotologic condition that characteristically presents as vertigo, oscillopsia, and/or disequilibrium induced by sound or changes in middle ear or intracranial pressure.<sup>1</sup> Subsequent clinical studies described the presence of audiologic symptoms, the most prominent of which were conductive hearing loss and autophony with or without vestibular manifestations.<sup>2</sup> Patients described an increased sensitivity to internally generated bone-conducted sounds, such as the heartbeat, chewing, footsteps hitting the ground and eye movements. It is of particular interest that the ability to hear one's own eye movements, a condition known as eye movement autophony, currently appears to have been described as a symptom only in patients with semicircular canal dehiscence syndrome.<sup>3</sup> Anecdotally, although the author of this report has diagnosed quite a number of patients with semicircular canal dehiscence syndrome manifesting primarily with vestibular symptoms, this particular case is the only one that presented with eye movement autophony as the primary and only symptom.

Although the patient was not physically incapacitated by vertigo or chronic disequilibrium, she was significantly bothered by the unrelenting nature of her particular symptom. She subsequently underwent a transmastoid plugging of the superior semicircular canal which completely relieved her of the symptom.

#### REFERENCES

1. Minor LB, Solomon D, Zinreich JS, Zee DS. Sound- and/or pressure-induced vertigo due to bone dehiscence of the superior semicircular canal. *Arch Otolaryngol Head Neck Surg.* 1998 Mar; 124(3): 249–58. DOI: 10.1001/archotol.124.3.249; PMID: 9525507.
2. Zhou G, Gopen Q, Poe DS. Clinical and diagnostic characterization of canal dehiscence syndrome: a great otologic mimicker. *Otol Neurotol.* 2007 Oct; 28(7): 920–6. PMID: 17955609.
3. Bhutta MF. Eye movement autophony in superior semicircular canal dehiscence syndrome may be caused by trans-dural transmission of extraocular muscle contraction. *Int J Audiol.* 2015 Jan; 54(1): 61–2. DOI: 10.3109/14992027.2014.963711; PMID: 25328030.