New Concepts in Electrical Stimulation in Vestibular Dysfunction

I am very pleased to introduce in this special issue of *Audiology & Neurotology* a compilation of articles focused on “New concepts in electrical stimulation in vestibular dysfunction” edited by Professors Angel Ramos, Sharon Cushing, and Nicolás Pérez. It was in 1790 that the idea of electrical stimulation of the inner ear was first proposed and attempted by Alessandro Volta. After coming to from unconsciousness he described the experience as if an explosion was felt in his head, spinning and hearing the sound of “boiling tenacious matter.” While this was a demonstration of Volta’s newly created battery and its application was not presumably intended for medical use, from that time on, we have known that the vestibular system is sensitive to electrical stimulation. Surprisingly though, it has taken many centuries to understand under what circumstances and conditions electrical stimulation might be delivered to the vestibular system in order to best modulate the response in a therapeutic manner. Just as when cochlear implants were in their infancy, we are now embarking on the important research efforts of electrically pacing the injured vestibular system and learning how the body reacts to it. In time, it is hoped to be able to treat patients with chronic vestibulopathies such as vestibular neuronitis, labyrinthitis, bilateral vestibular hypofunction, and perhaps even acute Ménière episodes in a manner similar to an on-demand defibrillator.

I commend the editors and the European Consortium research group under the auspices of the European Commission (Horizon 2020 Fet Open: Project: European Development of Bionic Vestibular Implant for Bilateral Vestibular Dysfunction) for bringing us the latest research on this important topic.

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