PULSUS SciTechnol
WWW.PULSUS.COM

J Otol Rhinol 2017, 6:5
DOI: 10.4172/2324-8785-C1-003

5th International Conference on

OTORHINOLARYNGOLOGY

August 07-08, 2017 London, UK

## Reorganization of auditory cortex in tinnitus with a normal audiogram

**Hui Wang**
Shanghai Sixth People's Hospital, China

High-density electroencephalogram (EEG) source analysis is used to determine whether there is reorganization of auditory cortex in tinnitus with a normal audiogram. Brain responses from 45 healthy right-handed tinnitus patients and 20 matched controls with normal audiometry (pure tone threshold below 25 dB HL at all frequencies from 0.125 to 8 kHz) were recorded with a 256-channel high-density electroencephalogram (HD-EEG) and auditory brainstem responses. We reported that in human subjects with tinnitus and a normal audiogram, auditory brainstem responses show significantly reduced amplitude of the wave I potential but normal amplitudes of wave V. A marked shift of the cortical representation of the tinnitus frequency into an area adjacent to the expected tonotopic location was observed after source analysis. This provides evidence of hidden hearing loss that manifests as reduced neural output from the cochlea in the absence of elevated hearing thresholds, and consequent cortical reorganization.

wangh2014@163.com

## What is the future of minimally invasive sinus surgery: Computer assisted navigation, marker-based virtual reality simulation, or 3D-surgical planner with remote visualization, 3D-navigation and augmented reality in the operating room?

**Ivica Klapan**[1, 2, 3]
[1]School of Medicine University of Zagreb, Croatia
[2]J. J. Strossmayer University, Croatia
[3]Klapan Medical Group Polyclinic, Croatia

Do we need a new sinus surgery technique in a daily routine practice? Imagine that the perception system in humans could be deceived, creating an impression of another external world where we can replace the true reality with the simulated reality that enables precise/safer and faster diagnosis/surgery. Of course, we tried to understand the new, visualized virtual world (VW) by creating an impression of virtual perception of the given position of all elements in the patient's head, which does not exist in the real world. This approach was aimed at upgrading diagnostic workup and endoscopic surgery by ensuring a faster and safer operative procedure, and represents a basis for realistic simulations, and can create an impression of immersion of a physician in a non-existing virtual environment. Every ENT specialist will be able to provide VR support in implementing surgical procedures, with additional correct control of all risks, without additional trauma, while having an impression of the presence in VW, navigating through it and manipulating with virtual objects (3DCA-navigation). Furthermore, when the 3D-surface with tissues arranged by objects is obtained, it is possible to derive spatial cross-sections at selected cutting planes, thus providing additional insight into the internal regions observed (Osirix/Leap Motion & NES-3D-volume rendering models). Generally speaking, fly-through techniques, which combine the features of endoscopic viewing and cross-sectional volumetric imaging, provide more effective and safer endoscopic procedures (marker-based VR-simulation), and use the corresponding cross-sectional image or multiplanar reconstructions to evaluate anatomical structures during the operation (3D-navigation & augmented reality in the OR).

www.poliklinikaklapan.com