

International Conference on

# Medical Devices

September 21-22, 2015 Orlando, USA



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### Recent breakthroughs on surgically implanted hearing devices: Cochlear implants and bone anchored hearing systems

Hearing loss is a common disability that can affect people of any age. Over the history people with hearing loss suffered from the social isolation and did not have good options for hearing rehabilitation. The development of hearing aids helped most of the people with moderate or severe hearing loss to improve their hearing.

Over the last 30 years, cochlear implants have become standard treatment for adults and children with severe-to-profound bilateral sensorineural hearing loss. More recently the criteria for indications for cochlear implants have expanded and several electrodes were developed and refined in order to cause the least possible damage to the cochlear structures, thereby preserving residual hearing and allowing the electroacoustic stimulation which is an excellent option for people with residual hearing in the low frequencies, who obtain insufficient benefit with hearing aids.

In the last decades bone anchored hearing systems (BAHS) were also developed to improve the sound conduction to the cochlea in order to help people with conductive or mixed hearing loss that cannot use conventional hearing aids or have unsatisfactory benefit with them. BAHS are also an option for patients with unilateral profound sensorineural hearing loss, who underwent radical mastoidectomy or had middle ear malformations.

Nowadays there are many options to treat patients with hearing loss using new devices that can improve the hearing and allow a better quality of life for these patients.

### Biography

Alexandre Caixeta Guimaraes, M.D., graduated in 2009 from the University of Campinas (UNICAMP), Brazil, received his title of specialist in otolaryngology from UNICAMP and concluded his fellowship in neurotology and otological surgery from UNICAMP. He is currently concluding his Ph.D. in medical sciences at UNICAMP, is a member of the Division of Otolaryngology Head and Neck Surgery at the University of Campinas, has published more than 45 papers in reputable journals and has been serving as an editorial board member and reviewer of several international journals.

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