Diagnostic Radiology in Cochlea Implant Surgery: Current Trends and Future Development (Literature Review)

I. V. Ivanova

Moscow State University of Medicine and Dentistry named after A. I. Evdokimov, Ministry of Healthcare of Russia, Department of Radiology

Abstract

In this article is summarized the literature evidence of radiology diagnostics in patients with high rate of hearing loss and profound deafness. Cochlear implantation (CI) is the only effective way to recover auditory function in this group of patients. According to the goal of radiology diagnostics, all methods can be performed at all surgery stages for pre-, intra- and postoperative diagnostics. The candidates for implant surgery should be analyzed for destruction of temporal bone, pneumatization disorders in the middle ear, and possible developmental anomalies in the inner ear. The first examination in nowadays radiology became multislice computed tomography (MSCT) and magnetic resonance tomography (MRI). The new method among otolaryngologists became cone-beam computed tomography (CBCT). Due to low doze exposure and by a very small metal artefact from metal electrodes the CBCT can be recommended as the standard method of diagnostics before and after cochlear implant surgery. The current interest is the neuronavigation in cochlear implant surgery, based on radiology imaging. Imaging procedures and algorithm of their application in cochlear implant surgery are an essential tool for pre-, intra- and postoperative diagnostics, which have an important practical and scientific value.

Key words: Multislice Computed Tomography (MSCT), Magnetic Resonance Imaging (MRI), Cone-Beam Computed Tomography (CBCT), Cochlear Implantology (CI).

References

6. Kosyakov V. V., Lazebny V. V., Korshok E. V., Korshok V. V., Pchelenok E. V. The role of MRI in the preoperative examination and postoperative follow up of the patients presenting with a combi-


Author

Ivanova Irina Vasil'evna, Ph. D. Med., Associate Professor of Department of Radiology of Moscow State Medical University of Medicine and Dentistry named after A. I. Evdokimov, Ministry of Healthcare of Russia. Address: Vuchetichca ul., 9а, Moscow, 127206, Russia. Phone number: +7 (495) 611-01-77. E-mail: ivanovairina74@yandex.ru