

REPORT ON OTOLOGY JUBILEE: 150 YEARS OF THE ARCHIVE FÜR OHRENHEILUNDE (PAST–PRESENT–FUTURE IN OTOLOGY & NEUROTOLOGY), HALLE/SAALE, GERMANY, 7–10.05.2014

Mateusz Rusiniak, Agnieszka Pollak, W. Wiktor Jędrzejczak, Maciej Mrowka

World Hearing Center, Institute of Physiology and Pathology of Hearing, Warsaw/Kajetany, Poland

Corresponding author: Mateusz Rusiniak, World Hearing Center, Institute of Physiology and Pathology of Hearing, Mokra 17 Str., Kajetany, 05-830 Nadarzyn, Poland, e-mail: m.rusiniak@ifps.org.pl

The conference in which we took part was a special meeting to mark the 150th anniversary of the foundation of *Archiv für Ohrenheilkunde*, later renamed *European Archives of Oto-Rhino-Laryngology* and still being successfully published today. The meeting was out of the ordinary because lectures also concerned historical aspect of the journal as well as the whole history of otology, reflecting the conference theme: “Where have we come from? – Where are we? – Where are we going?”. The conference chairman was Stefan K. Plontke. During the meeting there were 15 different sessions dedicated to basic science, journal history, diagnostic procedures, surgery, and implantology. There were over 80 lectures and 30 posters, including 6 lectures and 8 posters contributed by the Institute of Physiology and Pathology of Hearing (IPPH).

A particularly interesting subject area was tinnitus and its therapy, and another was cochlear implants, which included a new concept of the auricular implant. During the conference a number of lectures discussed the need for bilateral implantation and the therapeutic possibilities in case of unilateral deafness. Basic science topics were mainly concerned with molecular mechanisms involved in tinnitus and tympanosclerosis.

Prof. R. Probst described the citation history of journal articles during his review entitled “Otoacoustic emissions: a showcase of historic evolution and the specific role of the *Archiv für Ohrenheilkunde*”. He recalled D. T. Kemp’s article from 1979 entitled “Evidence of mechanical non-linearity and frequency selective wave amplification in the cochlea”, where distortion product otoacoustic emissions (DPOAEs) and spontaneous otoacoustic emissions (SOAEs) were first described. It is one of the most cited articles from the journal.

The conference was enriched with many historical lectures and posters presented by Prof. H. Swoboda. Among others he recalled personalities such as Wenzel Leopold Gruber (1814–1890) and Franz Polansky (1810–1887).

One new technology in otology and laryngology is medical imaging. Here worth mentioning is the work by Prof. P. Bird on “MRI inner ear imaging and electrocochleography in the diagnosis of Meniere’s disease”, where he described new methods for diagnosing Meniere’s disease. The technique can be used to observe changes in the inner ear and vestibular nerve, which are detectable in MRI images.



Participants from the IPPH during their speeches: W. Wiktor Jędrzejczak (top left), A. Pollak (top right), M. Rusiniak (bottom left), M. Mrowka (bottom right). In the central picture: the delegation from the IPPH with the Conference Chairman Prof. Stefan K. Plontke (in the middle)

Electrocochleography can also be used to improve the differential diagnosis of Meniere’s disease. Another presentation by C. Guldner concerned the postoperative imaging of cochlear implants using cone beam computed tomography (CBCT). This imaging method allows the shape of the electrode inside the cochlea to be observed in high detail and without artifacts. In contrast, other X-ray based imaging techniques, such as classical computed tomography, has always had to deal with artifacts induced by metal

elements inside the body (such as implant electrodes). One of the winning posters was work presented by the Bioimaging Research Center of the World Hearing Center, Kájetany, IPPH. The poster, on “The tonotopy of the brain: an fMRI study”, was prepared by M. Rusiniak under the direction of T. Wolak and attracted a high level of attention.

The largest group of work not related directly to otology or laryngology concerned various aspects of tinnitus. Tinnitus is a topic of special interest to scientists and clinicians who continue to try to understand its mechanism and to help patients with this burdensome ailment. In work entitled “Possibilities and limits of neuromodulation for tinnitus treatment”, T. Kleinjung reviewed currently available therapeutic methods. Some are magnetic and electric methods of central nervous system stimulation such as repetitive transcranial magnetic stimulation (rTMS) and deep brain stimulation (DBS). Unfortunately, all these methods seem to be ineffective in treating tinnitus. Sometimes early results are promising, but they do not last long. Other therapy methods described by the author included vagus nerve stimulation, auditory stimulation, and neurofeedback. Kleinjung

reported that in many cases tinnitus coexists with moderate hearing loss, and a cochlear implant can often be a good therapy as in most cases it eliminates tinnitus. In providing long-lasting tinnitus treatment, high hopes are presently with neurofeedback and auditory stimulation.

Prof. M. Profant gave a very interesting lecture entitled “Is deafness etiology important for prediction of functional outcomes in pediatric cochlear implantation?”. Predicting the outcome of cochlear implantation before surgery takes place is extremely important; however, scientists have not yet found out why some subjects enjoy very good hearing improvement, while others are completely unhappy with the device. Prof. Profant suggested one of the reasons why this may be so. He pointed to a correlation between cochlear implant benefit and middle ear malformation (common cavity malformation). Additionally his studies have shown that constant rehabilitation during the first 5 years reduces the number of patients who are unhappy with their implant. It is therefore very important to encourage patients and not allow them to give up on the rehabilitation program.