

THE 3RD INTERNATIONAL SYMPOSIUM ON OTOSCLEROSIS AND STAPES SURGERY, WITH PARTICIPATION OF REPRESENTATIVES OF THE WORLD HEARING CENTER

Henryk Skarzynski^{1,2}

¹ Oto-Rhino-Laryngology Surgery Clinic, Institute of Physiology and Pathology of Hearing, Warsaw/Kajetany, Poland

² World Hearing Center, Institute of Physiology and Pathology of Hearing, Warsaw/Kajetany, Poland

Corresponding author: Henryk Skarżyński, World Hearing Center, Institute of Physiology and Pathology of Hearing, Mokra 17 Str., Kajetany, 05-830 Nadarzyn, Poland, e-mail: skarzynski.henryk@ifps.org.pl

The 3rd International Symposium on Otosclerosis and Stapes Surgery took place on 24–26 April 2014 in Siofok, Hungary. The event was organized by the president of the Congress, Professor Istvan Sziklai. Experts from Europe, Asia, and South America presented the latest advances in treating progressive and congenital hearing impairments. Otosclerosis has always been a challenge for pioneers in otosurgery, even though therapies have become better with the development of new technologies such as high-quality operating microscopes, microsurgical instruments, and lasers. The surgical skill of otologists has kept pace with advances in new technology.

Undoubtedly, an important breakthrough in otosurgery, especially stapes surgery, is the use of antibiotics during and after surgery. It has helped decrease the number of complications and made new surgical procedures effective.

The conference gathered some of the best otosurgeons in the world who together presented 67 reports. Poland made notable contributions to the conference. Participants from the World Hearing Center presented 12 papers from clinical material based on 15,500 operated ears. Maciej Mrowka, M.D., Professor Henryk Skarzynski, M.D., Ph.D., Roman Barylyak, M.D., and Bartłomiej Krol, M.D. from the Institute of Physiology and Pathology of Hearing gave presentations on the causes of failure in otosclerosis surgery, anatomical and physiological reconstruction of the incudo-stapedial joint in children, and stapedotomy in advanced pathology of the middle ear. The team presented long-term results which showed, based on wide material (over 400 ears), that it is possible to successfully perform surgery on the single remaining hearing ear. According to these specialists, such operations are safe and in fact are the only possible option for preventing hearing loss from progressive otosclerosis.

The team from the Institute also presented material comprising children 5–18 years of age who had early otosclerosis. The findings attracted wide interest. The team outlined the advantages of performing screening tests on school-age children, a unique program conducted by the National Network of Teleaudiology.

A round-table debate on the causes of revision surgery in otosclerosis was organized by the team from the Institute of Physiology and Pathology of Hearing and the Institute of Sensory Organs. The moderator was Professor Henryk

Skarzynski, who also delivered a talk on various aspects of revision surgery. The Polish team coordinated a session in which they outlined recent effects of the use of the CODACS middle-ear implant in advanced otosclerosis.

The conference also hosted another Polish team from the Otolaryngology Clinic at the Medical University of Gdansk.

Other interesting presentations included:

1. Otosclerosis: a misnomer? Kenneth Brooker, Mayo Clinic, Arizona, USA.
2. The pioneers of stapes surgery. Rinze Tange, University Medical Center Utrecht, The Netherlands.
3. Clinical experience with a new optimized nitinol prosthesis for stapes replacement – NiTiBOND. Rudolf Probst and Alexander Huber, Switzerland.
4. The importance of imaging in the pre-operative work-up of conductive hearing loss with an intact tympanic membrane. Erwin Offeciers and J. W. Casselman, Belgium. The message here was that state-of-the-art imaging can provide vital information prior to functional middle ear surgery, adding significantly to the information available from conventional diagnostic methods (personal and family history, otoscopy, audiology, imaging, surgical inspection). Surgical inspection should only be performed as a last resort, when all diagnostic methods have failed to yield a coherent pre-operative diagnosis.
5. Cochlear implantation in advanced otosclerosis and after stapes surgery. Mohan Kameswaran, India.
6. Comparison between endoscopic and microscopic stapes surgery. Hiromi Kojima and Kazuhisa Yamamoto, Japan. Here the authors explained that endoscopic surgery is particularly suitable for treating stapedial disease and can also be done in patients with a curved and narrow external auditory canal.
7. Transcanal endoscopic stapedotomy: what are the benefits? Lela Migirov, Israel. The author explained that TES can be beneficial in improving the visibility and accessibility of the stapes and the OWN, avoiding manipulation of the CNT and blind fracture of the stapedial crurae. In cases of excessive bleeding, a CSF gusher, floating footplate, difficulties with prosthesis placing, and other obstacles it could be better to switch to a microscope. The TES can be utilized in patients with unfavorable external or middle ear anatomy, in candidates for revision or bilateral stapedotomy,

- in patients with already impaired taste sensation, on those with food-, smell-, or taste-related occupations, and in subjects for whom the taste of food contributes appreciably to their quality of life.
8. The role of osteoprotegerin, bone remodelling, time, and stochastic bone cell behaviour in the pathogenesis of otosclerosis: an osteo-dynamic concept. Mads Solvsten Sorensen and Sune Land Bloch, Denmark. This study presented computer simulations of stochastic bone cell behavior which demonstrated how perilymphatic clustering of dead osteocytes may occasionally develop simply by chance. Because the anti-resorptive OPG signal is lost inside such voids but preserved in the surrounding bone, abnormal bone remodeling may develop and proceed until the OPG signal is eventually re-established by newly formed bone.
 9. Surgical treatment and genetic analysis of proximal symphalangism with conductive hearing loss: case report and a review of the literature. Zhaoyan Wang, Huan Jia, Xiuhong Pang, Tao Yang, Hao Wu, China. The purpose of this study was to describe the otologic and radiologic features, surgical findings, results of stapes surgery, and genetic analysis of proximal symphalangism with conductive hearing loss. The study was based on a patient with symphalangism who was referred for evaluation and intervention of his hearing impairment.
 10. Comparison of CT findings and postoperative outcomes on Japanese otosclerosis patients. Kazuhisa Yamamoto, Masahiro Rikitake, Yuichiro Yaguchi, Yashiro Tanaka, Hiromi Kojima, Japan. Clinical data were obtained in 81 ears from 67 patients (29 men, 38 women) who underwent initial stapes surgery and were examined by CT scanning of the temporal bone and other examinations. CT scans are useful to confirm otosclerotic foci and to diagnose otosclerosis. The rate of positive CT findings for otosclerosis in our series was about 69%. The extent of the hypodense lesion did not correlate with preoperative hearing levels or influence the surgical outcomes.
 11. Sensorineural hearing loss in otosclerosis: hearing aids vs AMEI vs CI. Maurizio Barbara, Italy.
 12. Stapes surgery, vibrant soundbridge, vibroplasty, or bonebridge in otosclerosis. Wolf Dieter Baumgartner, Austria.
 13. Revision stapes surgery due to incus lysis: malleovestibulopexy or incus reconstruction with bone cement? Erwin Frans Offeciers, S. Strobbe, T. Somers, A. Zarowski, Belgium.
 14. Analysis of personal statistics in revision stapes surgery of the past 15 years. Roberto Filipo, Italy.
 15. Revision – stapedotomy: a review of 79 cases. Rinze Tange, The Netherlands.
 16. Mechanisms of sensorineural hearing loss due to otosclerosis. Konstantina Stankovic et al., USA. Sensorineural hearing loss observed in otosclerosis is often thought to be secondary to pathologic remodeling of the otic capsule, due to diffusion of inflammatory cytokines into the cochlear soft tissue. The authors explored the possibility of an additional, direct mechanism due to degeneration of the auditory nerve.
 17. How to prevent adverse effects in otosclerosis surgery. Jacques Magnan, France.
 18. Revision stapes surgery. Rudolf Hausler, Switzerland.
 19. Outcomes of cochlear implantation in patients with far advanced otosclerosis. Michal Luntz, Ayman Makhouh, Talma Shpak, Noam Yehudai, Israel. The study included 9 patients (11 ears) with advanced otosclerosis. Cochlear implantation in candidates in this group was both feasible and beneficial. Hearing outcomes were comparable to non-otosclerosis age-matched candidates. Fitting issues were manageable via mapping manipulation.
 20. Translation medical considerations in quality of life determinants in stapes fixation. Kenneth Brooker, Arizona, USA. The chances of useful and usable hearing as a result of stapes surgery are quite high. Two adverse clinical presentations may occur, one before and one after stapes surgery. This presentation showed that these occurrences can affect the quality of life in coping with continuing hearing loss and can be preventable.
 21. Quality of sound and AMA scores after stapes surgery. Rinze Tange, The Netherlands. The primary objective of the study was to integrate internet-based case reports into the hospital's electronic patient record (EPR) system in compliance with existing regulatory requirements on electronic data capture (EDC) and clinical data management systems (CDMS).
 22. Quality assurance for a sustained prospective observational study in stapes surgery. Vincent Van Rompaey, Matthew Yung, Paul Van de Heyning, Belgium and UK. The outcome of stapes fixation surgery is often described by audiometric improvement in the PTA and a smaller air-bone gap. Only a few studies on quality of life after ear surgery are available. For otosclerosis surgery, audiometric improvement does not always mean an improvement in perceived sound. Patients often wonder what percentage hearing gain they can expect of stapes surgery, and the monaural hearing and impairment evaluation as described by the AMA in their guide to the evaluation of permanent impairment can be of help in calculating these percentages.
 23. Reversal step stapedotomy: is it ideal for training residents? Maurizio Barbara, Italy. Reversal step stapedotomy (RSS) is one surgical technique that can be chosen for otosclerosis surgery. The main factor in its favour is minimal manipulation of the ossicular chain before the footplate hole is created and the prosthesis put in place. The author suggests using the RSS technique for training young otologists, especially in view of the worldwide decrease in the number of affected subjects.
 24. KTP laser stapedotomy with a self-crimping, thermal shape memory nitinol piston: follow-up study reporting intermediate-term hearing. I. Gerlinger, P. Bako, Z. Piski, P. Revesz, G. Rath, T. Karosi, L. Lujber, Hungary. The aim of the study was to evaluate mid-term hearing after implantation of a self-crimping heat memory nitinol piston in stapes surgery. The 12-month postoperative results were compared with those at a minimum of 3 years (maximum 6.7, average 4.4 years). The authors observed that elimination of manual crimping and the use of a “non-touch” hand-held laser had a positive impact on the mid-term audiometric results. Most previous studies have presented only relatively short-term (6 weeks up to 6–12 months) audiometric evaluations. Although complications are rare, a longer follow-up is needed to establish long-term stability.

25. Otosclerosis and stapes surgery in China: evolution and current situation. Hao Wu, China. The prevalence of otosclerosis appears to be lower in the Chinese population, but stapes surgery is progressively growing. This study reviewed the evolution of stapes surgery and otosclerosis in China and discussed the current situation. The analysis was based on representative papers from various Chinese otolaryngology departments from various regions, mainly published in the past decade.
26. Stapedotomy in a residency training program: HUB-UnB experience. Vítor Soares, Paulo Lial, Lucas Viana, Andre Sampaio, Carlos Oliveira, Fayez Junior, Brazil. This work analyzed the postoperative hearing of patients with otosclerosis who underwent stapedotomy within a residency program. Improvement in the surgical outcomes of doctors in training is essential for the maintenance of teaching stapes surgery during medical residency.
27. Malleostapedotomy: why the prosthesis is crimped at the neck of the malleus. Sun O Chang, Mi Na Park, Seung Ha Oh, Chong Sun Kim, Korea. This study examined the surgical results of neck-malleostapedotomy (neck-MS) compared to handle-malleostapedotomy (handle-MS) and determined the dimensions of the malleus pertinent to malleostapedotomy (MS). Results of both surgical techniques were comparable, indicating there was no benefit relating to dimensions.
28. CI and otosclerosis: long term outcomes and complications. Roberto Filipo, Italy.

At the end of the conference, participants approved the choice of future organizers of the 4th and 5th conferences: Professor R. Tange (Utrecht, The Netherlands) in 2016 and Professor H. Skarzynski (Warsaw, Poland) in 2018. The announcement was cordially acclaimed.