

broncho pulmonary pathology revealed a deviation from the norm of Ig E in 73% of cases, which may indicate a high degree of sensitization of the child's body in response to a fungal infection of the oropharynx on the background of respiratory

AUDITORY IMPLANTS – CONTEMPORARY POSSIBILITIES

Skarzynski P., Skarzynski H.

The Society of Polish Otorhinolaryngologists, Phoniatrists and Audiologists,
Warsaw, Poland

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

Institute of Sensory Organs, Kajetany, Poland

Introduction. Contemporary possibilities of hearing implant applications in the treatment of different kinds of hearing disorders affect the many years of research and scientific programs conducted in multiple centers around the world. Since 1992, the hearing implant program initiated by H. Skarzynski in the Institute of Physiology and Pathology of Hearing (IPPH) introduced in Poland practically all newest achievements in hearing implant surgery. The first implemented devices were cochlear implants for patients with nearly total deafness – adults and children. The program of auditory brainstem implants started in 1998; 10 years later, in the World Hearing Center, the first in the world patient received auditory brainstem implants bilaterally. Since 1997, H. Skarzynski has begun developing an innovative minimally invasive ear surgery concept (“Skarzynski’s 6 step technique”), enabling preservation of preoperative low-frequency residual hearing and inner ear structures. In 2002, the first surgery where electric hearing through the cochlear implant complemented existing normal hearing below 500 Hz, performed by H. Skarzynski, has shown a new direction in the treatment of partial deafness. With time, H. Skarzynski et al. have elaborated the concept of qualification of homogenous groups of patients with different hearing disorders. Combined with further development of the partial deafness treatment method (PDT), it has led to a broadening of the target groups of patients. These new methods and approaches were implemented internationally, which today enables conducting multicenter meta-analyses.

Research objectives. This presentation aims to introduce the present possibilities of treating different kinds of hearing disorders, with particular attention given to the PDT method. It will also present an overview of hearing implants applied in adults and children in the IPPH, including present indications for each implant system and patient inclusion criteria.

Materials and methods. The material comprises documents of the IPPH's World Hearing Center – one of the largest medical databases of patients with different types of hearing implants, including the partial deafness treatment.

Results. In the years 1992–2020, the program of hearing implants in the IPPH encompassed more than 10 thousand ears; the whole otosurgery program involves 15 thousand procedures per year, comprising various hearing improving surgeries. Before 2020, the IPPH has introduced to clinical practice all hearing implant systems: cochlear implants (since 1992) with different types and lengths of electrodes, bone conduction implants such as BAHA Connect (since 1997) and BAHA Attract (since 2003), OSIA100 (since 2018), middle ear implants like Vibrant Soundbridge (since 2003), Bonebridge BCI601 (since 2012) and BCI602 (since 2020), CODACS (since 2012), MET (since 2014), as well as auditory brainstem implants. Patients were from 8 months to 85 years old.

Direct and indirect effects of the IPPH's hearing implant program and related activities are diverse and were especially noticeable in the development and directions of global ear and implant surgery. These effects include elaboration by H. Skarzynski et al., a novel concept of qualification of homogenous groups of patients. Another effect is the development of methods and possibilities of assessment of hearing in the program of partial deafness treatment – hearing preservation qualification according to Skarzynski et al. is a hearing assessment method in all surgical cases with preserved preoperative residual hearing and inner ear structures. The system is independent of the implant user's level of hearing before implantation and considers the relative change of hearing threshold, which is vital in assessing different patient groups. The development of the PDT method has shown that the benefits of electric-acoustic stimulation of the hearing receptor are higher than the benefits of using only electric stimulation with a cochlear implant, or only acoustic, with a hearing aid.

Further development of the program of partial deafness treatment involved refining the surgical method and expanding indications for cochlear implantation in further, wider target patient groups. These activities significantly impacted new technology development, such as the design of thin, very flexible cochlear implant electrodes. Consequently, it is presently possible to use an appropriate, limited electric stimulation for each patient group, with 19-20 mm or 24-25 mm electrodes as complementation of normal hearing preserved up to 0.5 kHz, 0.75 kHz, 1 kHz, and kHz. The newest approach involves deeper insertion (up to 28 mm) and preservation of existing hearing up to 250 Hz, which creates a real chance for its effective amplification during postoperative rehabilitation with acoustic stimulation with a Duet or Hybrid speech processor. One of the electrodes thus applied, designed by H. Skarżyński, was a Cochlear manufacture model (SRA, CI422, CI522, CI622). The Med-El company offers the widest selection: flexible electrodes Flex20, Flex24, Fleks26, Flex28, and special electrodes. Recently, flexible electrodes HiFocusTMSlimJ are produced by Advanced Bionics, and NeuroZti EVO electrodes by Oticon.

Conclusions. Contemporary progress of audiology, otology, ear surgery, and modern technologies enable providing effective help to practically any patient with a hearing problem.

CALCULAR CANALITIES – DIFFICULTIES OF DIAGNOSTICS

Solodovnikova N., Karpovich N.

Grodno State Medical University, Grodno, Belarus

Introduction. Canaliculitis is an inflammatory disease of the lacrimal tubules, which accounts for about 2.4% of cases among ophthalmic pathology. Patients are sent to the hospital with complications after prolonged inadequate treatment and late diagnosis.

Purpose of the study. To focus the attention of practical ophthalmologists on the problem of canaliculitis.

Material and methods. 6 patients with diagnoses of chronic dacryocystitis, neoplasm of the lacrimal opening, neoplasm of the upper eyelid were sent to the eye microsurgery department of the Grodno University Clinic. No patient was diagnosed with canaliculitis at the outpatient stage. The terms of outpatient treatment at the place of residence ranged from 4 months to 1 year. The average age is 59.5 years. Men – 2, women – 4.

Results and discussion. Clinical manifestations were accompanied by constant lacrimation, purulent discharge, hyperemia, edema in the area of the lacrimal tubules, lacrimal opening and conjunctiva on one side. The protracted course of the inflammatory process, not amenable to treatment, led to edema and deformation of the position of the eyelid and lacrimal opening. In a hospital patients underwent standard ophthalmic examination and diagnostic lavage lacrimal system.

There was no obstruction of the nasolacrimal canal. All patients were diagnosed with canaliculitis and underwent surgical treatment. During canaliculotomy, dacryolites of dense consistency of various sizes were removed from the tubule, which were localized in the tubule and in the lacrimal opening with purulent and mucopurulent contents. The number of calculi varied (from 1 to 8). The size ranged from 1-2 mm to 6 mm. The tubules and the lacrimal opening were distended. Patients have achieved complete recovery after surgical treatment. Actinomycetes were isolated among the pathogens in 82% of cases.

Conclusions. Canaliculitis is a rare disease and requires correct diagnosis by an ophthalmologist in the early stages of the disease. In the presence of calculi in the lacrimal tubules and chronic inflammation, the only effective treatment is surgery.