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Program and Abstracts

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16. A one-stage operation in treatment of patients with chronic otitis (ChO) media

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The objective of the present study is to increase efficiency and quality of treatment in patients suffering ChO with pathology of the nasal cavity by one-stage surgery.
In order to complete the set up goals and follow up the research objective 28 patients with chronic othelcosis accompanied with pathology of nasal cavity and rhynopharynx were examined and treated.
The developed method of simultaneous rhyno-tympano plastics implied carrying out correcting and sanitizing interference in the nasal cavity, paranasal sinus and rhinopharynx and immediately upon its completion carrying out a functional-reconstructive surgery in the middle-ear cavity.
Depending on the grade of pathological changes in the middle-ear the following single-stage sanitizing interference was performed.
The initial results were assessed in a month after surgery.
At the monitoring survey on 12 months after simultaneous surgery the defect of neotympanic membrane was diagnosed in one patient.
The simultaneous rhino-oto-surgery allows obtaining positive social and micro social effect by means of decreasing the number of hospitalizations and reducing the rehabilitation period in patients with ChO.

17. Middle ear risk index and hearing loss

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The goals of successful tympanoplasty are the removal of the underlying pathologic processes and the achievement of a mucosal-lined middle ear cleft with an intact tympanic membrane and sound-conducting mechanism. The prognostic factors can be divided into

intrinsic factors: eustachian tube function, disease severity and status of residual ossicular chain, and extrinsic factors: surgical technique, staging, design and composition of the graft and prosthesis.
We reviewed the middle ear risk index (MERI) by Kartush and Becvarovski and type of surgery in our patients. The risk factors of MERI index are otorrhea, perforation of tympanic membrane, cholesteatoma, ossicular status, granulation or effusion of middle ear, previous surgery and smoking. The aims of this study are to review the effect of MERI on preoperative heating lossthe type and extent of surgery required to reverse the disease and long term hearing results.

Material and methods:

It is retrospective study of 266 patients (157 male and 109 female) with chronic otitis media with or without cholesteatoma in department of Otolaryngology Pardubice between July1996 and December 2004. All patients underwent 310 surgeries, 15 patients were operated on both sides, 18 patients had two surgeries on one side, 4 patients had three surgeries on one side and one patient had four surgeries on one side.
Complete data was found in 155 patients. We distinguished the type of surgery: tympanotomy with resection of retraction pocket (11 cases), atticotympanotomy (51 cases), modified radical mastoidectomy - RO (62 cases), radical mastoidectomy - RO clas (5 cases), revision after mastoidectomy (24 cases) and simple cortical antromastoidectomy (2 cases) The follow-up period ranged from 1 to 9.5 years; mean 3.3 year.

Results:

The risk factors of MER index and risk value were otorrhea: dry ear 33 cases, occasionally wet 157 cases, persistently wet 64 cases; perforation of tympanic membrane: none 121 cases, present 132 cases; cholesteatoma: none 87 cases, present 167 cases; ossicular status: normal 84 cases, defect of incus 79 cases, defect of incus and stapes 28 cases, defect of malleus 28 cases, defect of malleus, incus and stapes 34 cases; middle ear: normal mucosa 141 cases, granulations or effusion 112 cases; previous surgery none 185 cases, revision 64 cases; 196 nonsmokers and 58 smokers. Statistical analysis was performed.

Conclusion:

The MER index was calculated and compared with hearing level before

and after surgery. We concluded patients with higher MER index had worse preoperative and postoperative air-bone gap.

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18. Evaluation of laser vibrometry as diagnostic utility by means of a simulation model of the middle ear

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Laser Doppler Vibrometry has already been used in clinical studies to investigate its potential as a diagnostic utility. It is aimed to distinguish the different pathologies of conductive hearing loss. The purpose of this work is to simulate the different pathologies and their influence on the transfer function in order to show what is possible to distinguish in clinical measurements.

We used a Finite Element Model of the middle ear for the investigations. Calculations were performed accordingly to the clinical measurements to get comparable results. Calculations were done for individual variations of the intact middle ear and for the following pathologies: malleus and incus fixation, chain interruption, stiffening of annular ligament (otosclerosis).

Stiffening of the annular ligament leads to a reduced magnitude in the low frequency range and a change of the overall slope of the transfer function. Malleus and incus fixation reduces the magnitude of the transfer function in the whole frequency range if bone like fixation is assumed.

Results of the simulations are in good agreement with some clinical studies using the laser vibrometry. Ossicular chain interruption and otosclerosis can be clearly distinguished from normal ears by means of the calculated transfer functions.

19. Importance of rupture of round window membrane relating to the course of the clinical symptoms of sudden deafness

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Introduction:

The aim of this study was the investigation of the frequency of membrane ruptures in sudden deafness and the prognosis of the acompanying hearing loss after tympanotomy. The influence of dizziness and tinnitus as well as traumatic events were of additional interest. It should lay down the indication and best time for tympanotomy. The results were found by statistical comparison between groups of just conservative and of additional operative therapy.

Methods:

202 patients from 3 saxon hospitals with an one-sided hearing loss from at least 60% were registrate. A group of 93 patients treated with an exclusive therapy with rheological infusions was statisically compared with a group of 109 patients with additional tymanotomy.

Results and discussion:

A rupture of round window membrane were determined in 29% of the operated patients. Patients with traumatic events as well as patients with dizziness showed a tendency to accumulation of membrane ruptures.

The results of postoperative hearing improvement were significant dependend on the intervall between the time of the sudden hearing loss and the time of tympanotomy. Patients with dizziness before therapy as well as patients with high grading hearing loss showed a significant worse prognosis regarding to the hearing improvement in both groups.

If the tympanotomy was realized within 3 weeks then the hearing improvement in both groups presented approximately similar results.

There is an indication for tympanotomy by high-grading hearing loss also without realising traumatic event, particularly by additional dizziness.

Because of the uncomplicated course of the tympanotomy, this is an