The postoperative hearing results showed a gain of 1,7 dB on pure-tone average air-conduction (PTA-AC). (D) Non-echo planar diffusion weighted imaging (non-EP DW MRI) documented the residual (n = 1) and recurrent cholesteatoma (n = 1). The 1 and 5 year Imaging follow-up revealed no other recurrent or residual disease. Conclusions: The CWR-BOT is a safe and very effective option for treatment of problematic unstable canal wall-down mastoid cavities, resulting in dry trouble-free ears.

Objective: To present the long-term surgical outcome of the bony mastoid and epitympanic obliteration technique with canal wall reconstruction (CWR-BOT) in adults with an unstable cavity after previous canal wall-down surgery for extensive cholesteatoma.

Study Design: Retrospective study.

Interventions: Therapeutic.

Setting: Tertiary referral center.

Patients: Fifty consecutive adult patients undergoing a CWR-BOT between 1998 and 2009.

Main Outcome Measure(s): (A) Recurrence and residual rates of cholesteatoma, (B) postoperative hygienic status of the ear, including postoperative aspect of the tympanic membrane and external ear canal integrity (EAC), (C) functional outcome, and (D) long-term safety issues.

Results: (A) The percentage of ears remaining safe without recurrent or residual disease after CWR-BOT was 96% after a mean follow-up time of 101.8 months. Recurrent cholesteatoma occurred in 2% (n = 1) and a residual cholesteatoma was detected in 2% (n = 1) of the patients. (B) A safe dry, and trouble-free graft and selfcleaning EAC was achieved in 94%. (C) The postoperative hearing results showed a gain of 1.7 dB on pure-tone average air-conduction. (D) Nonecho planar diffusion-weighted imaging (non-EP DW magnetic resonance imaging) documented the residual (n 1⁄4 1) and recurrent cholesteatoma (n = 1). The 1 and 5-year imaging follow-up revealed no other recurrent or residual disease. Conclusion: The CWR-BOT is a safe and very effective option for treatment of problematic unstable canal wall- down mastoid cavities, resulting in dry trouble-free ears.

doi:10.1017/S0022215116004862

Various aspects of cholesteatoma surgery (N865)

ID: 865.2

For the Dutch-Flemish Otology Society: Patient Satisfaction in Cholesteatoma Surgery: study set-up and preliminary results

Presenting Author: **Joost van Dinther**

Joost van Dinther[1], Stefan Delrue[2], Valerie Droessaert[2], Sophie Camp[2], Robby Vanspauwen[2], Youri Maryn[2], Andrzej Zarowski[2], Thomas Somers[2], Erwin Offeciers[2]

[1]European Institute for ORL-HNS, Sint Augustinus Hospital Antwerp Belgium, [2]European Institute for ORL-HNS - Sint Augustinus Hospital Antwerp Belgium

Learning Objectives: 1. To test the validity and test-retest reliability of the Dutch translation of the Chronic Otitis Media Questionnaire 12 (COMQ-12). 2. To evaluate the quality of life in cholesteatoma patients after treatment with the bony obliteration technique.

Objective: To test the validity and test-retest reliability of the Dutch translation of the Chronic Otitis Media Questionnaire 12. To evaluate the QOL in cholesteatoma patients after treatment with the bony obliteration technique (BOT).

Materials and Methods: 35 individuals with no history of COM received the questionnaire as well as a group of 35 patients with complaints of COM. The healthy participants had to complete the questionnaire twice (control group 1 and control group 2) to estimate the test-retest reliability, and their scores were compared with those of the patients (group 3) to test the validity. The Dutch GBI and COMQ-12 questionnaires were used in a group of cholesteatoma patients after treatment with the BOT.

Results: The overall COMQ-12 score in control group 1 ranged from 0 to 11, in control group 2 from 0 to 6, and in group 3 from 7 to 46. The mean score in group 1 was 1.43, 1.34 in group 2 and 27.80 in group 3. A comparison of the COMQ-12 scores of the two control groups and the patient group showed a significantly higher COMQ-12 score in patients with COM. The diagnostic accuracy was investigated, and a COMQ-12 cut-off score of 8 was found to have a near-perfect sensitivity and specificity in distinguishing between the presence and absence of COM. The single-measures ICCAA was 0.859 (with a 95% confidence interval from 0.738 to 0.926). This clearly exceeded the ICC threshold for acceptable reliability (ICC ≥ 0.75) and therefore confirmed that there was reasonable test-retest reliability when applying the questionnaire to control subjects. The preliminary results of the GBI and COMQ-12 questionnaires in a group of cholesteatoma patients after treatment with the bony obliteration technique will be discussed.

Conclusion: The Dutch version of the COMQ-12 has good validity, diagnostic accuracy, and test-retest reliability. The preliminary QOL results after the BOT in cholesteatoma patients will be discussed.

doi:10.1017/S0022215116004874

Various aspects of cholesteatoma surgery (N865)

ID: 865.3

Pediatric cholesteatoma behaviour and the role of bony obliteration in its treatment

Presenting Author: **Marc van der Schroeff**

Marc van der Schroeff
Sophia Children's Hospital, Erasmus MC

Learning Objectives: Characteristics of pediatric cholesteatoma Our experience in using a bony obliteration tympanoplasty technique is discussed.

Mastoid obliteration in cholesteatoma surgery symposium, Dutch-Belgian Otology Group.

Pediatric cholesteatoma is a different identity to its adult counterpart. It is more frequently infectious, aggressive, more proliferative and associated with less favorable prognosis. An overview on characteristics and epidemiology of pediatric cholesteatoma is given. Preliminary results on >100 children operated in the Sophia Children's hospital from January 2014 using predominantly a canal wall up approach with bony obliteration of the mastoid and epitympanic space are shown.

doi:10.1017/S0022215116004886

Various aspects of cholesteatoma surgery (N865)

ID: 865.4

Setup of a national multi center RCT to evaluate the cost effectiveness of follow-up with diffusion-weighted MRI versus 2nd look surgery after primary cholesteatoma treatment

Presenting Author: **Robert Jan Pauw**

Robert Jan Pauw[1], Paul Merkus[2]
[1]*Erasmus MC,* [2]*VU University Medical Center Amsterdam*

Learning Objectives: To inform on the setup of a national multi center RCT in The Netherlands that aims to evaluate the cost effectiveness of follow-up with diffusion-weighted MRI versus 2nd look surgery after primary cholesteatoma treatment.

In The Netherlands we have set up a prospective multicenter randomized controlled trial to evaluate the cost effectiveness of follow-up with diffusion-weighted MRI versus 2nd look surgery after primary cholesteatoma treatment. The planned start of the trial is in the 2nd half of 2016. The aims and objectives of the trial as well as the methodology will be discussed.

Research questions:

1. Are the hearing levels after three years of follow-up with annual diffusion-weighted MRI comparable to those after follow-up with second look surgery?
2. Is a diffusion-weighted MRI follow-up strategy cost-effective compared to second look surgery?
3. Are other outcome measures (residual and recurrent cholesteatoma, quality of life and adverse events) comparable between both follow-up strategies?

Hypothesis: Diffusion-weighted MRI is a cost-effective follow-up strategy after primary cholesteatoma surgery compared to the usual care, 2nd look surgery with equal quality of care in terms of hearing, cholesteatoma detection rate, complications and quality of life.

Patients and methods: An economic evaluation alongside a prospective multicenter randomized controlled trial with an intention-to-treat analysis plus additional observational study will be performed. 132 patients of 16 years and older after primary cholesteatoma surgery treatment with normal to mild conductive hearing loss will be included and randomized in either.

'Annual diffusion-weighted MRI during 3 consecutive years, starting 1 year after primary surgery' or 'Second look surgery 1 year after primary surgery and follow-up during 3 consecutive years'.

Outcome measures

1. The degree of hearing loss after 3 thee years of follow-up.
2. The costs of three years follow-up.
3. The number of 2nd look surgeries without cholesteatoma present (unnecessary surgical procedures) and the number of residual and recurrent cholesteatoma, health related quality of life and number of complications.

doi:10.1017/S0022215116004898

Free Papers (F866)

ID: 866.1

Ouabain-Induced Cochlear Nerve Degeneration: Synaptic Loss and Plasticity in a Mouse Model of Auditory Neuropathy

Presenting Author: **Yasheng Yuan**

Yasheng Yuan[1], Fanglu Chi[2]
[1]*EYE & ENT Hospital of Fudan University,* [2]*Fudan University*

Learning Objectives: hair cells, ribbon synapse, neurodegeneration.

Ouabain application to the round window can selectively destroy type-I spiral ganglion cells, producing an animal model of auditory neuropathy. To assess the long-term effects of this deafferentation on synaptic organization in the organ of Corti and cochlear nucleus, and to ask whether surviving cochlear neurons show any post-injury plasticity in the adult, we quantified the peripheral and central synapses of type-I neurons at posttreatment times ranging from 1 to 3 months. Measures of normal DPOAEs and greatly reduced auditory brainstem responses (ABRs) confirmed the neuropathy phenotype. Counts of presynaptic ribbons and postsynaptic glutamate receptor patches in the inner hair cell area decreased with post-exposure time, as did counts of cochlear nerve terminals in the cochlear nucleus. Although these counts provided no evidence of new synapse formation via branching from surviving neurons, the regular appearance of ectopic neurons in the inner hair cell area suggested that neurite extension is not uncommon. Correlations between pathophysiology and histopathology showed that ABR thresholds are very insensitive to even massive neural degeneration, whereas the amplitude of ABR wave 1 is a better metric of synaptic degeneration.