

most common in Stage I. Our staging system which is classified from point of the cholesteatoma extent is simple and useful.

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## Free Papers (F732)

### ID: 732.3

#### **Incidence of congenital cholesteatoma in persistent unilateral glue ear**

Presenting Author: **Victoria Wilmot**

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#### *Learning Objectives:*

*Introduction:* Early congenital cholesteatoma is often undiagnosed and usually presents only when the tympanic membrane is breached and the ear chronically discharges. Early detection and intervention of congenital cholesteatoma should intuitively allow better surgical outcomes. Otitis media with effusion could be an early indicator of underlying cholesteatoma and children presenting with persistent unilateral effusion should be investigated.

*Method:* Over a 5-year period from 1st March 2009 to 1st March 2014 every child with a persistent unilateral conductive loss, flat tympanometry for 6 months and normal tympanic membrane was listed for insertion of a ventilation tube. At follow up audiological evaluation, any child with persistent hearing loss underwent CT scanning to investigate for cholesteatoma and exploratory mastoid surgery where CT findings were suggestive.

*Results:* 29 patients in total, age range 3 to 12 years (mean 5 years) were listed for ventilation tube insertion. 2 patients were lost to follow up. 10 patients (34%) had persistent conductive loss at 3 months despite ventilating tubes; 6 patients (21%), age range 4 to 8 years (mean 5 years) had CT scans suggestive of congenital cholesteatoma resulting in mastoid exploration; 5 patients (17%), age range 4 to 8 years (mean 5 years) had congenital cholesteatoma and resulted in mastoidectomy/middle ear surgery.

*Conclusion:* Persistent unilateral glue ear in a child should be considered suspicious of congenital cholesteatoma. Insertion of a ventilation tube, audiology follow up and CT scan can screen for this otherwise undetected disease, allowing early intervention. The incidence of congenital cholesteatoma in persistent unilateral glue ear in this series is 17%.

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## Free Papers (F732)

### ID: 732.4

#### **Clinical Incidence and Management of Otitis Media with Effusion in Vietnamese Children**

Presenting Author: **Thuy Tran Le**

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#### *Learning Objectives:*

*Subject:* Researching clinical incidence and active management of Otitis Media with Effusion in Vietnamese children and how OME often occurs together with other diseases of Recurrent Upper Respiratory Infections and Gastro Esophageal Reflux Disease. The diagnosis and treatment of GERD and RURIs sometime is essential in the treatment of OME.

*Study:* Retrospective review study.

*Method:* A clinical study of 300 Vietnamese children of RURIs, ages 6 months to 7 years at Thuy Tran ENT Clinic from 09/2008 to 04/2015. OME was diagnosed by endoscopy of the tympanic membranes and tympanogram. Treatment of OME was carried out by the traditional procedures and adenoidectomy if indicated. Treatment of recurrent nasopharyngitis consisted of daily endoscopic irrigation for 5–7 days of the nasal passage and Eustachian tubes with Natri Chloride 0.9% and topical antibiotic solution.

*Results:* 1/ Incidence of OME/ RURIs is 234/300: 78%. In which OME + Recurrent Nasopharyngitis + Adenoiditis + GERD: 115; OME + RN + Adenoiditis: 49; OME + RN + GERD: 46; OME + RN: 24. 2/ Hearing recovery: 192/234. 3/ Symptoms of RURIs were completely resolved for all patients without tonsillectomy. Follow up period: 6–12 months.

*Conclusion:* 1/ The incidence of OME / RURIs is 234/300. 2/ Management of RN and GERD on the patients of OME is necessary. 3/ RN in all cases of OME treated with the Modified Thuy Tran Technique yields good results without tonsillectomy. 4/ Limited antibiotics.

*Discussion:* 1/ The incidence of OME/RURIs of Vietnamese children is high. 2/ By the Modified Thuy Tran technique, endoscopic nasal irrigation cleans the nasal passage and Eustachian tube. 3/ A national program of OME in the developing countries should be considered. 4/ Public education on OME and GERD in children is necessary.

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## Free Papers (F732)

### ID: 732.5

#### **Type I Tympanoplasty Meta-analysis: A Single Variable Analysis of More Than 26 Thousand Adults and Children From 214 Studies**

Presenting Author: **Hsern Ern Tan**

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*Learning Objectives:*

*Objective:* To determine which independent variables influencing the efficacy of type I tympanoplasty in adult and pediatric populations.

*Data Sources:* A search of the PubMed database and Cochrane Database of Systematic Reviews using the key words “tympanoplasty OR myringoplasty” from January 1966 to July 2014 was performed.

*Study Selection:* Studies reporting outcomes of myringoplasty or Type I tympanoplasty in primary non-cholesteatomatous chronic tympanic membrane perforation were included.

*Data Extraction:* Of 4,698 abstracts reviewed, 214 studies involving 26,097 cases met our inclusion criteria and contributed to meta-analysis.

*Data Synthesis:* The primary outcome of success was defined as closure rate at 12 months. The independent variables analyzed were age, follow-up period, approach, graft material, perforation cause, size, location, ear dryness, and surgical technique. Only those studies providing data on a given parameter of interest could be included when comparing each variable.

*Conclusion:* The weighted average success rate of tympanic closure was 86.6%. Based on this meta-analysis, there is a failure rate of tympanoplasty observed over time (worsened by 4.4% in follow-up periods >12 months). Pediatric surgery has a 5.8% higher failure rate than adults. Other variables associated with improved closure rates include perforation with a size less than 50% of total area (improved by 6.1%) and the use of cartilage as a graft (improved by 2.8% compared to fascia), while ears that were operated on while still discharging, those in different locations of the pars tensa, or using different surgical approaches or techniques did not have significantly different outcomes.

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## New trends in cholesteatoma management (N733)

**ID: 733.1**

**Why does cholesteatoma epithelium behave differently from normal skin? – a c-MYC study with special concern on proper CWD cavity cleaning.**

Presenting Author: **Frigyes Helfferich**

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*Learning Objectives:* Genetics behind cholesteatoma formation.

In our country CWD tympanoplasty has been a widespread surgical technique in the recent decades to remove cholesteatoma. Therefore we meet several patients for regular check-ups, when the proper cleaning of the mastoid cavity is mandatory, otherwise severe inflammation may recur. The gold standard is the use of microscopes which allows good manipulation. However, to examine and clean hidden recesses, rigid or flexible endoscopes may be indispensable. Our technique is presented on a short video.

Uncleaned mastoid cavities filled with desquamation may behave like a cholesteatoma. Our working group tried to explain the genetical background of the different behavior of normal skin compared to the epithelium of the cholesteatoma. Previous studies have found aneuploidy of chromosome 8, copy number variation of c-MYC gene and the presence of elevated c-MYC protein level in cholesteatoma. We compared the expression of c-MYC gene in samples taken from acquired cholesteatomas, atheromas and normal skin samples using RT-qPCR. Significantly elevated c-MYC gene expression was found in cholesteatoma compared to atheroma and to normal skin samples. It implies a more prominent hyperproliferative phenotype that might be due to the presence of inflammation in acquired cholesteatoma.

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## New trends in cholesteatoma management (N733)

**ID: 733.2**

**Subtotal petrosectomy in selected advanced cholesteatoma cases**

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*Learning Objectives:* Subtotal petrosectomy is the basic procedure in skull base surgery. It involves complete exenteration of all air cells of the temporal bone (middle ear and mastoid). It includes the following air tracts: retrosigmoid, retrofacial, antral, retrolabyrinthine, supralabyrinthine, infralabyrinthine, subprattubal and peritubal carotid cells. Only a few cells in the petrous apex left behind. The otic capsule is either removed or left behind. In advanced cholesteatoma cases, where numerous previous middle ear procedures could not reassure dry ear and when there is no possibility of hearing reconstruction and one wishes to attain a dry safe ear this procedure has proved to be the solution. Depending on the bone conduction result the procedure can be combined with the asimultaneous application of round window vibrant soundbridge or BAHA/Bonbridge implants. During the past years we carried out subtotal petrosectomies in 4 cases due to advanced cholesteatomas. The steps of the procedure will be demonstrated and conclusions will be drowed based on our experiences. Further rare indications of this useful procedure will be briefly discussed too.