

Conclusions: Currently, no single test or imaging modality can be used to diagnose ET dysfunction, but there is some evidence that diagnostic accuracy can be improved by combining the results of different objective tests and patient-reported outcome measures. Further development of ET function tests is required to facilitate the accurate diagnosis of patients and allow outcome reporting for new interventions.

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Free Papers (F732)

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Surgery of Cholesteatoma in Pediatric Age: Assessment of combined micro-endoscope approach

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Learning Objectives: Use of endoscopy in ear surgery is an interesting technique by offering the possibility to be less invasive.

Introduction: Cholesteatoma in pediatric age is aggressive and necessitates an extensive surgical approach to eradicate the pathology and a long time follow up. Introduction of otoendoscopy lately gave a cue to reconsider certain standardized techniques. The aim of this study is to survey how endoscopy is evolving in our daily practice and the preliminary results obtained.

Methods: Review of medical charts of patients underwent tympanoplasty between January 1995 and December 2014. Data collected included age, sex, features of cholesteatoma, type of tympanoplasty (TPL): trascanal (TC), canal wall up (CWU) or canal wall down (CWD), technique used: microscope and/or endoscope, revision surgery for recidivism. Comparison was done on surgical techniques applied before and after the introduction of endoscopy in our department, 2010.

Results: Ninety-three children, 57 M and 36 F, average age 10 (range 3 to 16) were identified for the study. Seven patients had bilateral cholesteatoma. Tympanoplasties performed were 186 divided as follows: **63%** (63/100) **CWU**, 15 of which underwent a second look CWU and 25 underwent a second look CWD. **20%** (20/100) **CWD** where in 10, 2 and 1 cases underwent a second, third and fourth look, respectively. Finally, **17%** (17/100) underwent **TC** where 7 underwent a second look TC. Three out of the 7 underwent a third look and were converted in 2 cases to CWD and in 1 case to CWU. Before and after the introduction of endoscopy the corresponding 56 and 44 first look procedures were performed as follows: CWU 57% vs 45%, CWD 27% vs 16% and TC 16% vs 39%, respectively.

Conclusions: Otosurgery tends to be less invasive by avoiding mastoidectomy. Endoscopic cholesteatoma removal

should be limited to disease interesting only the tympanic cavity. A long time follow up is necessary in order to compare the real benefit of endoscopy.

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Practicality analysis of JOS staging system for congenital cholesteatoma: Japan Multicenter study (2009–2010)

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Learning Objectives:

Introduction: Potsic classification has been widely used as the classification of congenital cholesteatoma. According to this classification, destruction of ossicles is one of the important points. And the stage will be progressed if the ossicular chain is destructed even in the case of small cholesteatoma which is limited in tympanic cavity. The committee on Nomenclature of the Japan Otological Society (JOS) was appointed in 2004 to create a cholesteatoma staging system widely applicable in Japan and as simple as possible to use in a clinical practice. We introduce our staging system about congenital cholesteatoma.

Methods: A total of 599 ears that underwent surgery for fresh cholesteatoma between 2009 and 2010 at 6 institutions in Japan were recruited and cases with congenital cholesteatoma were selected. In order to know the progress site reliably, we selected strictly the cases which could be obtained surgical records in details. We evaluated the progression of cholesteatoma according to the 2015 JOS cholesteatoma staging and classification system as followed;

Stage I: limited in tympanic cavity (Ia;anterior part, Ib;posterior part, Ic; both of them)

Stage II: beyond tympanic cavity

Stage III: associated with intratemporal complications

Stage IV: associated with intracranial complications

Results: Seventy one ears of 599 ears were diagnosed for congenital cholesteatoma and 37 ears of 71 have been studied. Six ears were classified for Stage Ia, 11 ears for Ib, 1 ear for Ic, 17 ears for II and 2 ears for III. Concerning about the pathology of stapes in Stage I, the missing rate of stapes superstructure was 0%, 54.5% and 100% in Stage Ia, Ib and Ic, respectively.

Conclusions: Congenital cholesteatoma which was limited in tympanic cavity was different in stapes status by the part of existence of cholesteatoma. Especially in this study, Stage Ib was

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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Incidence of congenital cholesteatoma in persistent unilateral glue ear

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

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

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