

Results: In 20 of the children the ear was dry prior to their referral for 6–12 months, in 10 there was a very large or enlarging perforation, and or high tendency to develop otorrhea with organism typical to chronic otitis media and not to acute otitis media and or bone conduction loss. 10 of the perforations were anterior perforations with overhanging anterior canal wall. In a follow up of 6 months–3 years after surgery, in 27 of the children the tympanic membrane was intact; in 3 children a tiny residual perforation was left. None of the children experienced an event of otitis media after surgery.

Conclusion: The success rate of tympanoplasty in children is relatively high, provided cases are properly selected and technic is carefully chosen (addition of canaloplasty whenever needed). The 10–15% of partial success or even failure (need for revision surgery) does not justify postponing tympanoplasty in all young children, exposing them to the consequences of a long standing tympanic membrane perforation.

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Does the quality of the material in the ventilation tube can affect the extrusion rate?

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Learning Objectives:

Objective: The aim of this study is to assess relationship between the material of ventilation tubes (VTs) and VTs extrusion time, among various factors affecting the extrusion rate of ventilation tubes.

Study Design: A prospective, clinical trial.

Method: This clinical trial was conducted in 39 patients, 78 ears with VTs insertion. The 1.02 sized VT was placed in one ear, the 1.14 sized VT was placed in contralateral ear. The patients was evaluated about VTs extrusion history following every month. The extrusion time of VTs in the ears was compared with the contralateral ears. Data included ventilation tube type, discharge characters (scanty, serous, mucoid, glue), multiple intubation (first, multiple), comorbidities, passive smoking, early occlusion, otorrhea or inflammation findings, and age. To minimize additional complicating factors, patients undergoing concurrent tonsillitis, adenoid hypertrophy, sinusitis, and allergic rhinitis were excluded from this study.

Result: There were 41 patients in this study, with a median age of 3.5 years. The mean extrusion time of 1.02 sized ventilation type was 7.94 months, whereas 1.14 sized ventilation type was 6.33 months. In the 1.02 sized VTs, average extrusion time was significantly longer ($p = 0.02$). When the mean extrusion rate associated with age, discharge character, multiple intubation, comorbidities, and otorrhea was compared with ventilation tubes respectively, there were no significant differences.

In addition, it seemed early occlusion and passive smoking affected slightly extrusion time, but no statistical significance.

Conclusion: There was a small but statistically significant increase in the extrusion rate of VTs in patients with the 1.02 sized ventilation tube type. Compared with the 1.02 sized VT and the 1.14 sized VT, the quality of material in ventilation tube was significantly related to the VTs extrusion time. Thus, It would need to consider why the nature of the material affected extrusion rate.

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Identification of novel potential biomarkers and signaling pathways related to otitis media induced by diesel exhaust particle in in vivo system via transcriptomic analysis

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Learning Objectives: The aim of the present study was to discover potential molecular biomarkers and pathways triggered by DEP exposure in rodent model. Here, we conducted transcriptomic analysis to identify novel potential biomarkers in middle ears of DEP-exposed mice.

Introduction: Association between air pollutants and inflammatory diseases such as Otitis Media (OM) has been shown in recent studies. Diesel exhaust particle (DEP), one of major components among diverse air pollutants, is characterized by a carbonic mixture composed of polycyclic aromatic hydrocarbons (PAHs), nitro-PAHs, small amounts of sulfate, nitrate, metals, and other trace elements. The exposure to DEP as a risk factor for inflammatory diseases has been reported in several recent investigations. In line with these, our previous study identified potential biomarkers in *in vitro* system through gene expression microarray and pathway analysis. Although investigations in *in vitro* system have been conducted to elucidate plausible biomarkers and molecular mechanisms related with DEP, it is necessary to carry out *in vivo* study to identify exact biological relevance regarding incidence of OM caused by DEP exposure.

Methods: We conducted transcriptomic analysis to identify novel potential biomarkers in middle ears of DEP-exposed mice.

Results: A total of 697 genes were differentially expressed in the DEP-exposed mice; 424 genes and 273 genes were up- and down-regulated, respectively. In addition, signaling pathways among differentially expressed genes mediated by DEP exposure were predicted from different two point

of view. Subsequently, we identified several key molecular biomarkers, CHRM1, EPO, SOS1, ESR1, CD4, and IFNA1.

Conclusions: In conclusion, our results might ascertain related cell process and signaling interacted genes underlying DEP exposure and its effects. Moreover, the discovered biomarkers can be recognized as potential candidates for developing early diagnosis and effective treatment strategies of DEP-mediated disorders.

Learning Objectives: We discovered potential molecular biomarkers and pathways triggered by DEP exposure in rodent model.

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Do we always need gelfoam packing in the middle ear cavity during tympanoplasty?

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Learning Objectives:

Objectives: A modified overlay tympanoplasty, also known as a lift and repositioning tympanoplasty, has been developed to overcome the disadvantages of the conventional technique. Since fascia is placed over the annulus in this technique, a novel hypothesis that a support of gelfoam in the middle ear cavity would not be necessary has been formed.

Methods: We retrospectively analyzed the surgical outcomes of our modified overlay tympanoplasty to prove whether the outcomes depend on middle ear gelfoam packing during the surgery. A total of 227 chronic otitis media patients who underwent modified overlay tympanoplasty (Type I) with sandwich technique by a single surgeon were included in this study.

Results: The mean age was 49.0 years and the male: female ratio was 76:151. The mean follow up period was 26.3 months (6–94 months). Patients were divided into two groups according to whether or not gelfoam packing was performed in the middle ear cavity; the gelfoam (GG, N = 105) and no-gelfoam groups (NG, N = 122). Graft uptake rates, postoperative hearing levels, and complication rates were compared as the measures of surgical outcomes. The graft uptake rates of each group were up to 99.1% in GG (104/105) and 99.2% in NG (121/122). The air-bone gap significantly decreased after surgery without statistical difference between the groups. Postoperative complications such as epithelial cyst and lateralization occurred very rarely in both groups, and the rates showed no significant differences between two groups.

Conclusions: In conclusion, we suggest that gelfoam packing in the middle ear is not a mandatory procedure during a modified overlay tympanoplasty. Further investigation to find the

clinical advantages of no-gelfoam technique during tympanoplasty is needed in a prospectively designed clinical trial.

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Paediatric transcanal endoscopic ear surgery

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Learning Objectives: TEES is safe and effective for treating children with middle ear disease.

Introduction: Recent advances in endoscopy have led to the development of transcanal endoscopic ear surgery (TEES). In the last decade, TEES usage has increased dramatically worldwide as a minimally invasive surgery with excellent middle ear visualisation and optical surgical manipulation. TEES may be suitable for treating children with middle ear disease. In this study, clinical futures and postoperative results in paediatric TEES cases were investigated to understand the feasibility of TEES in children with middle ear disease.

Materials and Methods: Medical records of 28 paediatric patients (age:

Results: of the 16 male and 12 female patients (mean age: 7.3 years; range: 1–17 years), 8 had left ear disease, 19 had right ear disease, and 1 had bilateral congenital cholesteatoma. They included 20 cholesteatoma, 5 ossicular disruptions, 2 chronic otitis media, and 1 perilymphatic fistula. Tympanoplasty types included 18 type I, 3 type III, and 6 type IV. For three cholesteatoma cases, staged-operations were performed. In an ossicular disruption case, re-operation was needed because of remaining air-bone gap. There was no recurrence of cholesteatoma until now. The diameter of narrowest portion of ear canal (anterior-posterior) on the axial computed tomography was 5.6 mm (mean). Postoperative hearing results were acceptable, with no surgical complications.

Conclusions: Our results suggest TEES as a safe, effective treatment for children with middle ear disease, notably, paediatric chronic otitis media without a mastoid lesion, ossicular disruption, or early-stage congenital cholesteatoma.

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Usefulness of Anterior-Based Periosteal(Palva) Flap for Obliteration of Mastoid Cavity in Canal Wall Down Mastoidectomy

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