

loss, 4 had mild CDHL secondary to OME and had bilateral grommet insertion for the condition; 1 had a profound unilateral SNHL. On average, children were sensitive to 6 identifiable sound stimuli at presentation (range 1–20). 82% complained of sensitivity to noise from household appliances. 60% had a background history of autistic spectrum disorder (ASD), followed by attention deficit hyperactivity disorder (ADHD) (8%) and other neurodevelopmental problems (3%). In 91%, management comprised behavioural therapy combined with provision of a sound-ball (Puretone relaxation therapy ball) for home use. Of these, 25% did not attend their first review. A further 25% were considered to have sufficient symptom improvement to permit discharge after a single clinic review. Only 2% of children required more than 3 review sessions before achieving resolution of symptoms. Only 1% were referred back to the service.

*Conclusions:* In our series hyperacusis is more common in boys and in children with ASD. A combined treatment approach with behavioural and a sound-ball therapy has a high success rate.

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### Update in ossicular reconstruction: Ossicular Replacement Prostheses (ORP), bone cement and new assembly techniques (N673)

**ID: 673.1**

#### Adhesive Otitis Media and Ossiculoplasty

Presenting Author: **Kadir Serkan Orhan**

Kadir Serkan Orhan  
*Istanbul University*

*Learning Objectives:* To present how to do glass ionomer in ossicular reconstruction.

*Objective:* Eustachian tube dysfunction may deteriorate physiology of middle ear pressure and ventilation that result in ear drum retraction. Cholesteatoma can develop from retraction pocket that may result in ossicular erosion. On the other hand, Ossicular erosion may result from prolonged contact between tympanic membrane and ossicular chain without active infection and cholesteatoma.

Long process of the incus, lenticular process and/or stapes superstructure can be effected and result in complete or partial ossicular discontinuity. In lenticular process erosion, bone cement can be used for reconstruction. Incus interposition, malleus-stapes bone cement or ossicular prosthesis are the reconstruction options in case of incus long process erosion.

*Materials and Methods:* Thirty patients whose underwent ossicular chain reconstruction with bone cement included in the study. Glass ionomer was used for reconstruction by otomicroscope or endoscope. We compared preoperative and postoperative audiogram findings.

*Results:* We found better result of ossicular reconstruction with glass ionomer in lenticular process erosion. Malleus-

stapes bone cement application or incus interposition can be performed in case of incus long process erosion.

*Conclusion:* Glass ionomer can be safely used for ossicular reconstruction in patient with adhesive otitis media that cause ossicular discontinuity.

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### Update in ossicular reconstruction: Ossicular Replacement Prostheses (ORP), bone cement and new assembly techniques (N673)

**ID: 673.2**

#### Surgical Anatomy-Endoscopic Approach

Presenting Author: **Ali Özdek**

Ali Özdek  
*private practice*

*Learning Objectives:* Endoscopic ear surgery gained popularity in the last 10 years. Introduction of endoscopes in otologic surgery has several advantages. It allows fully transcanal surgery in many type of ear diseases. It allows better visualization of hidden areas in middle ear. It also helps better understanding of surgical anatomy of middle ear during education period. Although 3-dimensional anatomy is same in every type of surgery, endoscopic ear surgery needs being familiar to endoscopic view of middle ear. In this presentation endoscopic surgical anatomy will be discussed in details and endoscopic application of several ossiculoplasty techniques will be presented.

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### Update in ossicular reconstruction: Ossicular Replacement Prostheses (ORP), bone cement and new assembly techniques (N673)

**ID: 673.3**

#### Endoscopic Ear Surgery in Different Otologic Procedures

Presenting Author: **Yüksel Olgun**

Enis Alpin Güneri, Yüksel Olgun, Aslı Çakır,  
Mehmet Durmuşoğlu, Pınar Tunçbilek

*Dokuz Eylül University School of Medicine  
Department of Otorhinolaryngology*

*Learning Objectives:*

**Introduction:** Despite the routine use of endoscopes for various operations in the fields of rhinology and later laryngology, endoscopic ear surgery (EES) has gained widespread popularity only over the last ten years. Although EES has some disadvantages such as the inherent feature of being a one handed technique and necessity of frequent cleaning of the instruments it also offers some major advantages like direct illumination and wide field view through ear canal.

In this study we aimed to present our experience in EES procedures.

**Materials:** Charts of 33 patients who underwent various EES in our department were retrospectively reviewed. Patient demographic characteristics, surgery types, hearing results and complications were evaluated

**Results:** Mean follow up time was 8,2 (6–24) months. Endoscopic stapedotomy was performed in 13, endoscopic tympanoplasty and/or ossiculoplasty was performed in 9 patients. Hydroxyapatite bone cement was used to rebridge the defects between incus and stapes in 4 patients and a PORP was used for ossiculoplasty in one case. Inside out mastoidectomy with manubriostapediopexy using hydroxyapatite bone cement was performed in one case. In 10 patients endoscope assisted cochlear implantation was performed due to the difficult access to the round window under direct microscopic vision. Mean pre and postoperative air bone gaps (ABG) for stapedotomy operations were  $29,1 \pm 9,1$  and  $9,4 \pm 6,8$  dB respectively. Mean pre and post operative ABG for endoscopic tympanoplasty and/or ossiculoplasty operations  $27,8 \pm 10,7$  and  $11,3 \pm 7,6$  dB. No graft perforation or deterioration in hearing thresholds were seen in any of the cases.

**Conclusion:** Our results show that EES can safely be performed in the majority of the middle ear procedures with similar or better outcomes to conventional microscopic approach.

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### **Update in ossicular reconstruction: Ossicular Replacement Prostheses (ORP), bone cement and new assembly techniques (N673)**

**ID: 673.4**

#### **Manubriostapedioplasty**

Presenting Author: **Levent Sennaroglu**

Levent Sennaroglu

Hacettepe University School of Medicine

**Learning Objectives:** The author developed a technique called manubrio-stapedioplasty using glass ionomer cement for malleus and incus fixation due to tympanosclerosis and congenital fixation. Method: this method can be used in situations where malleus and incus are fixed but stapes is mobile. Head of the malleus and incus are removed and manubrium is connected to the head of the stapes with glass ionomer cement. In a group of five

patients with conductive hearing loss mean pre-operative air-bone gap of 42.75 dB, and mean post-operative air-bone gap was 5.25 dB. This method can also be used in situations with fixation of all ossicles. Here the stapes is mobilized after removing of all tympanosclerotic plaques but the postoperative hearing results are not as good as situations where stapes is mobile. During this presentation videos of different patients will be provided showing the technique.

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### **Endoscopic Ear Surgery 1 (R674)**

**ID: 674.1**

#### **Transitioning to Endoscopic Ear Surgery and Training the Next Generation**

Presenting Author: **Manuela Fina**

Manuela Fina

Assistant Professor, University of Minnesota

**Objective:** The objective of this presentation is to illustrate the learning curve of a surgeon who transitioned to Endoscopic Ear Surgery and the surgeon's creation of a teaching program in a U.S. residency program.

**Methods:** A 5 minutes educational video with 3 power point slides illustrating learning curve, tips, take home points and conclusions.

**Results:** The surgeon will illustrate the initial difficulties and challenges that can delay the transition and adoption of the primary endoscopic approach, how many cases does it take to fully transition to Endoscopic Ear Surgery, the modifications in OR set up and surgeon's position with time and skill acquisition, utilization of endoscopy in the office setting for chart documentation and patients' education.

The surgeon will present a personal experience in teaching the residents a new surgical technique and creating a structured educational program with goals and skills to achieve according to resident's level of training.