during ossiculoplasty. A new strategy of IM of hearing threshold (HT) evaluation was developed by a team of engineers and surgeons on the basis of previously performed researches.

Subjects and Methods: Patients (n = 25) underwent two-stage canal wall-up tympanoplasty due to chronic otitis media with cholesteatoma. During the second look surgery performed 12 months later ossiculoplasty was monitored intraoperatively by LDV and round window electrocochleography (RW-ECoChG). Both measures were performed via an enlarged posterior tympanotomy. LDV and RW-ECoChG intraoperative tests recorded simultaneously for the same stimulation set. Intraoperative HT was defined automatically in auditory steady state response (ASSR) option as well as prosthesis vibration by LDV. Using both intraoperative techniques various configurations of prosthesis placement were tested. On the basis of the preoperative tonal audiometry and post-ossiculoplasty RW-ECoChG & LDV thresholds a mini-software calculated an optional ABGC. Prosthesis moveability tested simultaneously by LDV was showed and correlated with RW-ECoChG thresholds.

Results: Postop ABG closure ranged between 15 to 45 dB. HT improvement evaluated intraoperatively correlated with postop ABGC (r > 0.5; p < 0.05). Various prosthesis configurations and placements resulted in measurable changes in the RW-ECoChG thresholds. LDV appeared sensitive mostly to prosthesis position changes manifesting by movability improvement at 0.5- and 1.0kHz.

Conclusions: RW-ECoChG measured in ASSR option was found to be an objective and sensitive technique for IM of HT improvement significantly corresponding with postop ABGC-C. LDV showed their usefulness to confirm the usefulness to control prosthesis position changes by confirming better acoustic energy transfer through the reconstructed ossicular chain.