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*Learning Objectives*: To highlight potential approaches to open the semicircular canals while preserving hearing.

*Introduction*: In case of incapacitating symptoms, surgical treatment can be offered to patients with confirmed superior semicircular canal dehiscence syndrome. Plugging and capping of the superior semicircular canal are most effective in terms of symptom relief. Both the middle fossa and the transmastoid approach have been reported to reach the superior semicircular canal. However, the middle fossa approach has potential complications including epidural hematoma, seizures, cerebrospinal fluid leakage, facial palsy, etc. Moreover, plugging through the middle fossa approach has been reported to produce up to 25% of sensorineural hearing loss.

*Aim*: Our aim was to gain insight in the effect of opening and plugging the semicircular canal on postoperative hearing thresholds when using the presented surgical technique.

*Methods*: We performed a retrospective review on hearing outcomes of 16 cases that underwent transmastoid semicircular canal plugging by two surgeons in a tertiary referral center between October 2008 and January 2016. All patients received systemic corticosteroids during and after surgery. The relevant refinements in surgical technique will be presented. We evaluated air conduction (AC) pure-tone averages (PTA) of 0.5 kHz, 1 kHz and 2kHZ and bone conduction (BC) PTA of 1, 2 and 4 kHz before and after surgery.

*Results*: In our case series of 16 patients that underwent transmastoid plugging, none of the patients experienced postoperative sensorineural hearing loss. None of the patients experienced epidural hematoma, seizures, cerebrospinal fluid leakage or facial palsy. Mean BC PTA was 16 dB preoperatively and 18 dB postoperatively. No BC PTA over 15 dB was observed in the individual patients. Mean AC PTA was 28 dB preoperatively and 24 dB postoperatively. All of the patients had resolution of their autophony or hyperacusis of bone-conducted sounds.

We can confirm the high rate of symptom relief reported in earlier studies on superior semicircular canal plugging, which presents a reliable treatment option to the patient that suffers from incapacitating autophony and hyperacusis of bodily sounds.

*Conclusion*: The presented technique for opening (and plugging) of the semicircular canal through a transmastoid approach proves to be safe and effective in preserving hearing. We can confirm the high rate of symptom relief reported in earlier studies. No sensorineural hearing loss was observed in our series.

doi:10.1017/S0022215116004412

## Facial Palsy in CSOM (R841)

### ID: 841.1

### Facial Nerve Monitoring in Cholesteatoma Surgery - Past and Present Trends

Presenting Author: **David Kaylie**

David Kaylie
*Duke University Medical Center*

*Learning Objectives*: At the completion of this talk the attendee will understand the history of facial nerve monitoring, proper use of the facial nerve monitor and requirements for resident training.

Facial nerve integrity monitoring(NIM) using subcutaneous EMG needles has been established as standard of care for neurotologic and skull base surgery for decades. Several studies have shown that facial NIM is cost effective and best practice for otologic surgery. Despite this level of evidence, there are still several points about routine use of facial NIM that remain controversial.

There is no standard to say in which otologic cases it should be used. Controversy exists over who should be doing the monitoring – otologists, neurologists, audiologists or neurophysiologists. This leads to questions about which specialty has the appropriate training to make them most qualified to do facial NIM. The American Clinical Neurophysiology Society has published guidelines on proper training and method for facial NIM. The American Board of Otolaryngology has mandated training in facial NIM as a core requirement for otolaryngology residency, although there is no core curriculum to teach facial NIM in a uniform manner. Yet another controversy exists over billing for facial NIM. Although CPT codes exist for facial nerve monitoring, these codes cannot be billed concurrently with surgery codes.

The American Academy of Otolaryngology has set up a task force to look at these controversies and come up with an educational plan to ensure that all otolaryngology residents are trained appropriately. The task force will also survey residency directors to assess how facial NIM is being taught.

doi:10.1017/S0022215116004424

## Facial Palsy in CSOM (R841)

### ID: 841.2

### Facial Palsy in Cholesteatoma

Presenting Author: **Richard Irving**

Richard Irving
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*Learning Objectives*:

Facial palsy is a presenting feature of approximately 1% of middle ear cholesteatomas but can be present in up to 50% of cases where the disease involves the petrous apex. The risks of apical disease are thus much higher than for disease confined to the middle ear. Despite greater awareness the diagnosis is often delayed and although prompt treatment usually results in a good outcome the prognosis in established facial paralysis can be difficult to predict.

Middle ear cholesteaomas typically cause paralysis by involvement of the horizontal segment of the nerve whereas the labyrinthine segment is the site most frequently involved in apical disease.