

Introduction: Soft tissue preservation using a hydroxyapatite-coated abutment may lead to a reduction in complications in percutaneous bone conduction hearing implant surgery. In this open multi-center, randomized(1:1), controlled clinical trial, eligible subjects were assigned to receive the conventional intervention, a titanium abutment (Cochlear™ Baha® BA300) with soft tissue reduction, or a new intervention, a hydroxyapatite-coated abutment(BA400) with soft tissue preservation. The primary outcome was a combined endpoint which included the secondary outcome measures pain, numbness, peri-abutment dermatitis and skin thickening/overgrowth.

Results: 106 subjects were randomized. The difference between the groups after one year of follow-up as measured by the primary efficacy variable was not statistically significant($p = 0.12$) in the ITT population($n = 103$), but was statistically significant($p = 0.03$) in the Per-protocol population($n = 96$). It showed an advantage for the test group, with over twice as many subjects(29%) with none of these important medical events during the first year compared to the control group(13%). Secondary outcome measures, such as surgical time (15 vs. 25 minutes, $p < 0.01$), numbness(90% vs. 69% of subjects experienced no numbness at one year, $p < 0.01$), neuropathic pain (mean score at 3 months, 1.06 ± 0.25 vs. 1.70 ± 1.53 , $p = 0.015$) and the overall opinion of the esthetic outcome were favourable for the test group. Five abutments with tissue overgrowth had to be changed in the control group versus one in the test group. No significant differences existed in the occurrence of peri-abutment dermatitis(Holgers index). One implant extrusion was recorded in each group.

Conclusion: Soft tissue preservation with a hydroxyapatite-coated abutment leads to a statistically significant and clinically meaningful reduction in numbness, neuropathic pain and surgical time, and improves cosmetic outcomes in comparison to soft tissue reduction surgery with a titanium abutment.

doi:10.1017/S002221511600339X

Free Papers (F762)

ID: 762.2

Findings on 7000 magnetic resonance scans of the internal auditory meatus: To scan or not to scan?

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Learning Objectives: MRI IAM is a useful tool for the Neurotologist to clarify related symptoms or reassure the patient. Although the VS pick up rate is low, the potential risks of misdiagnosis justify the wide utilisation, as do the high rates of incidental and abnormal findings.

Introduction: Vestibular schwannomas (VS) account for up to 10% of intracranial neoplasms. Magnetic resonance imaging (MRI) of the internal auditory meatus (IAM) has been established as the gold standard in VS diagnosis. Numerous guidelines (Sunderland, Charing Cross and

Oxford) advise when to scan, with reported positive results ranging from 0.5% - 4.3%. We reviewed results of MRI IAM for a catchment area of two million over a three year-period.

Methods: Registration with the Caldicott guardian was made and permission given to obtain audit data from the radiology. The information and statistics team provided the MRI IAM episodes. We entered the report for each episode from the electronic patient record. This was coded to six separate outcomes. Normal, VS, Cholesteatoma, Incidental, Other and Incomplete.

Results: A total of 6978 exams were performed. 96% involved adult (>16 years) patients; 55% female and 45% male. In total, 66.5% ($n = 4640$) were reported as normal, a further 15.7% ($n = 1097$) had incidental findings. The number of new diagnosis of VS was 99 (1.6%), while 3.3% ($n = 231$) scans were incomplete. Additionally, 1.2% ($n = 89$) diffusion weighted scans for investigation of cholesteatoma and 10% ($n = 726$) surveillance of known VS were identified. Twenty-five scans were requested for surveillance of other disease such as facial nerve, external and middle ear lesions. We also noted inappropriate requests for morbidly obese or extremely claustrophobic patients.

Conclusions: This is one of the largest reported databases, demonstrating a VS pick up rate of 1.6%. With 66.5% scans reported as normal, the high incidence of abnormal findings, either incidental or not (33.5%) justifies the usage of MRI IAM.

doi:10.1017/S0022215116003406

Free Papers (F762)

ID: 762.3

Congenital Aural Stenosis: Clinical Features and Long-term Outcomes

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Learning Objectives: There was no significant difference among different diameter of stenotic EAC for cholesteatoma formation, and stenosis of EAC (>4 mm) with cholesteatoma may be a special state of EAC, we named it as blockage of EAC.

Introduction: The aim of the present study was to evaluate the clinical features and long-term outcomes of CAS comprehensively.

Methods: It was a retrospective review of patients who underwent meatoplasty for CAS at a tertiary referral hospital, from April 2008 to August 2015. A structured form was used to obtain data from patients' anamneses, PTA, HRCT of the temporal bones, operation notes and videos, pathology reports and postoperative follow-up records.

Results: A total of 246 meatoplasty were performed on 232 patients in our study. There was no significant difference among different age groups for cholesteatoma formation,

$\chi^2 = 1.8$, $p > .05$. Chi square test detected no significant difference among subgroups of stenotic EAC for cholesteatoma formation, $\chi^2 = 2.5$, $p > .05$. Postoperative ABG less than 30 dB occurred in 77.3% (99/128) of the patients, and there was no significant difference between cholesteatoma and no cholesteatoma groups, $p > .05$. The complication rate of CAS was 13.8% (20/144), cholesteatoma group had a higher rate of complications, $\chi^2 = 5.49$, $p < .05$.

Conclusions: Our results indicate that meatoplasty was an effective surgical intervention for CAS, there was a stability hearing outcome with prolonged follow-up. Jahrsdoerfer score was one factor which affected the postoperative hearing, but age was not the crucial factor in surgical indication. There was no significant difference among subgroups of stenotic EAC for cholesteatoma formation, and no significant difference between cholesteatoma and no cholesteatoma groups for hearing outcomes. But cholesteatoma group had a higher rate of complications.

doi:10.1017/S0022215116003418

Free Papers (F762)

ID: 762.4

Middle cranial fossa approach to repair of temporal bone encephaloceles and CSF leaks with over 18 years experience with future implications on driving regulations in the UK

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Learning Objectives: Good hearing outcomes. Minimal risk of epilepsy. DVLA should reconsider band on driving for these patients.

Introduction: This paper details our experience in the management of 40 patients with temporal bone encephaloceles and cerebrospinal fluid (CSF) leaks, with the majority of patients managed via a middle cranial fossa approach (MCF) with bone graft, temporalis fascia and tisseal. DVLA imposes a driving band for 6 months for cars and 2 years for HGV on all patients undergoing craniotomy regardless of indication.

Objective: To investigate the long-term follow-up of patients who had CSF leak repair: looking at effectiveness of repair, intracranial complications specifically seizures and hearing outcomes.

Method: A retrospective chart review of 40 patients undergone middle cranial fossa craniotomy for the treatment tegmen defect in a tertiary referral center from 1997 to 2015 was performed.

Results: Forty patients were identified who had undergone surgical repair of the dural defects through a middle cranial fossa approach. The mean age was 52 years (range 16 to 74) with male to female ratio of 2:3. Defects were

almost equally right and left sided with over 80% were spontaneous leaks. Nearly 90% of patients were treated with MCF approach and 10% with a combination of MCF and transmastoid as the defect also involved the posterior fossa. Majority of patients exhibited an improvement in hearing. A patient developed epilepsy post-operatively with MRI confirmation of temporal lobe inflammation. One other patient with pre-operative epilepsy continued to have seizures.

Conclusion: The MCF approach is an excellent route to effectively repair CSF leaks and encephaloceles due to tegmen tympani and dural defect. It carries an extremely small risk of epilepsy. Therefore, the band on driving enforced by DVLA for patients with no preoperative epilepsy undergoing craniotomy for CSF leak repair should be reconsidered.

doi:10.1017/S002221511600342X

Free Papers (F762)

ID: 762.5

Subtotal Petrosectomy With Blind Sac Closure of the External Auditory Canal – Indications and Results

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Learning Objectives:

Introduction: Subtotal petrosectomy and blind sac closure of the auditory canal (STP) includes a canal wall down mastoidectomy with exenteration of all air cells, obliteration of the middle ear cleft with fat or temporalis muscle or a biocompatible material and closure of the external auditory canal. The indications for STP are weeping mastoid cavities, temporal bone malignancies, CSF leak and lateral base of skull surgeries. Hearing rehabilitation with a bone conduction hearing device or a cochlear implant can be offered. The aim of this study is to review the indications, results and hearing rehabilitation of the patients who underwent STP in our department.

Methods: All charts of patients who underwent STP between October 2011 and December 2015 were reviewed and analyzed.

Results: During this period 20 patients underwent STP. The average age was 46.9(13–81). 6 patients had cholesteatoma of them 5 were deaf in the operated ear. 1 patient had an encephalocele in a previously operated ear. 13 patients had a weeping mastoid cavity with no cholesteatoma. 4 patients had a Bone Anchored Hearing Aid and One patient had a Bonebridge implanted. 2 patients had a cochlear implant in a deaf ear. 1 patient had surgery for external auditory canal carcinoma. One patient with a weeping