decompression surgery within 2 weeks after trauma reached 92.9%, resulting in a significantly better outcome than later decompression surgery. The ideal time for decompression surgery for the traumatic facial nerve paralysis was the first 2 weeks in patients with severe, immediate-onset paralysis. Recently, we modified the later decompression surgery using bFGF in a gelatin hydrogel to promote the regeneration of denervated nerves. Our experimental study suggested that bFGF-impregnated biodegradable hydrogel facilitates regeneration of the facial nerve in guinea pigs due to the sustained release of bFGF. Clinically, this therapeutic regimen may be useful for facial nerve decompression surgery, which is indicated for severe facial nerve paralysis. The efficacy of the novel decompression surgery will be presented.

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Free Papers (F833)

ID: 833.6

Surgical management of Petrous Bone Cholesteatoma and facial nerve function restoration

Presenting Author: **Wei ju Han**

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Learning Objectives:

Objective: To analyze the clinical manifestations, classification, surgical approachs of Petrous Bone cholesteatoma(PBC) and restoration of facial nerve function.

Methods: From 2000 to 2014, 91 cases of petrous bone cholesteatoma underwent operations in the Chinese PLA general hospital. Clinical, audiological, and radiological findings, surgical approach with respect to the classification and facial nerve function were analyzed retrospectively.

Results: The most common symptoms were hearing loss and FN paralysis. All patients had petrous bone erosion with high resolution temporal bone CT scan. Out of the 91 PBC cases, 45 (45/91、49.45%) were supralabyrinthine, 7(7/91、7.69%) were infralabyrinthine, 12(12/91、13.19%) were infralabyrinthine-apical, and 27(27/91、29.67%) were massive with respect to Sanna's classification. All patients were radically removed the lesion. And 5 patients underwent transmastoid approach, 41patients underwent middle fossa approach, 34 patients were performed by translabyrinthine approach, 10 patients were performed by combined transmastoid and middle fossa approach, one patient was perfomed by combined translabyrinthine and sphenoid sinus approach. The most common affected section of facial nerve is labyrinth segment. Facial nerve decompression, primary end-to-end anastomosis, great auricular nerve graft and nerve substitution of facial-hypoglossal anastomosis were applied to restore the facial nerve function.

Conclusions: The most common symptoms of Petrous bone cholesteatoma were hearing loss and FN paralysis. The high resolution temporal bone CT scan has important value in finding PBC. The classification of PBC is fundamental to choose the appropriate surgical approach, and middle fossa approach is most common approach. Radical removal lesions should be prioritized over hearing preservation. Restoration of facial nerve (FN) function is achievable by reanimation procedures.

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Free Papers (F833)

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Primary tumors of the facial nerve misdiagnosed many years prior: What is the appropriate treatment?

Presenting Author: **Hj Yi**

Hj Yi

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Learning Objectives: This paper was to determine the characteristics of facial nerve primary tumors misdiagnosed as tumor-free conditions many years prior, and to identify appropriate treatments.The cases of five Chinese patients with misdiagnosed primary tumors of the facial nerve were reviewed; in each case, the condition had been misdiagnosed more than 8 years prior. All patients presented with progressive or complete facial paralysis and hearing loss, with or without vertigo. We reviewed pre- and post-operative images (including CT scans of the temporal bone) and MRI data. After review, all tumors were completely resected using the translabyrinthine or transmastoid approach and were confirmed to be primary tumors of the facial nerve.All tumors were totally resected. Facial-hypoglossal nerve anastomosis failed in one patient whom we sought to manage in two stages, because fibrosis developed at the end of the facial nerve. One patient accepted two-stage facial-hypoglossal nerve anastomosis and patient status improved to House-Brackmann (H-B) grade V from H-B grade VI. The other three patients chose not to undergo reconstruction. All patients recovered well, with no other complications evident after follow-up periods of 0.5–3 years.Unusual primary tumors of the facial nerve should be considered in patients with progressive facial paralysis, especially if this is accompanied by hearing loss or vertigo. Misdiagnosis creates operative difficulties, diminishes the chance of facial nerve reconstruction, and increases the likelihood of poor reconstructive outcomes.

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Bone conduction hearing devices in single sided deafness (R834)

ID: 834.1

Baha Attract System: 6-month results of a multicentre, open, prospective clinical investigation

Presenting Author: **Myrthe Hol**

Peter Monksfield[2], Piotr Skarzynski[6], Kevin Green[3], Christina Runge[4], Stina Wigren[7], Johan Ivarsson Blechert[7], Mark Flynn[7], Arjan Bosman[1], Emmanuel Mylanus[1]

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Learning Objectives:

Objectives: Present the 6 months results of a multicentre, prospective investigation on the Cochlear™ Baha® Attract™ System.

Design: Fifty-four adult patients with hearing impairment, were included and underwent surgery in the current prospective cohort study. Follow-up visits were scheduled at 10 days, 4, 6 and 12 weeks, and 6 months. Main outcome measures are hearing performance (free-field audiometry, speech in quiet, adaptive speech in noise) with the Baha Attract System compared to the unaided situation and compared to a pre-operative test situation using the sound processor on a softband, safety of the Baha Attract System, hearing related quality of life, surgical information, sound processor magnet strength and magnetic retention force over time, and information on postoperative pain, discomfort, numbness and soft tissue status.

Results: The 6 months results of the multicentre will be presented for the main outcome measures.

Conclusions: The objective is to present data regarding the usability and clinical performance of the Baha Attract System in subjects with hearing impairment that are candidates for Baha surgery.

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Bone conduction hearing devices in single sided deafness (R834)

ID: 834.2

Transcutaneous BAHA Attract Implants – Interim results at two years

Presenting Author: **Jaydip Ray**

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Learning Objectives: Transcutaneous bone conduction implants produce less soft tissue complications. Interim results show high patient satisfaction. Percutaneous devices can be converted to transcutaneous devices.

Introduction: Many soft tissue problems in bone anchored hearing solutions are related to their percutaneous nature. Tissue preservation and non skin penetration techniques help address these issues.

Methods: Prospective longitudinal study of 80 consecutive BAHA Attract patients (Sept 2013 and Feb 2016.) Data included indications, audiology, incision, surgery, skin thickness, fixture and postoperative follow up (including audiological , soft tissue, magnet types and usage).

Results: Total 80 patients implanted. Age range 4 – 86yrs. Male : Female ratio 47:33. Fifty six were adults and 24 paediatric. Indications were Conductive deafness (56%), Mixed hearing loss (16%) and Single Sided Sensorineural loss (28%). 22% were conversions from percutaneous devices. 10% cases were performed under local anaesthesia only. The incision in all cases was inferiorly facing "C". Average surgical time 40 min. All had 4 mm fixtures. Average skin thickness at midpoint was 6.2 mm for adults and 4 mm for children. Minimal post operative nursing care was required as the wound healed neatly by 1 week without hair loss and minimal surrounding numbness. No wound complications reported. Four (5%) reported pain after a month but settled conservatively. Two (2.6%) reported surrounding oedema after prolonged continuous use. One reported skin tenderness. Majority loaded with processors at 6 weeks. Commonest magnet strength 4 (range 2 to 5). 89% reported good to excellent device retention. Majority were fitted with the BAHA 4 or BAHA 5 processors. Few had BP110. All patients reported good to very good sound quality with average use of 6hrs /day.

Conclusion: The interim experience with the transcutaneous BAHA Attract system is positive with negligible post operative care requirement.

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Bone conduction hearing devices in single sided deafness (R834)

ID: 834.3

Which device - when and why? The controversial role of bone conduction hearing devices in the rehabilitation of unilateral sensorineural hearing loss