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Closing the Gap: Stapes Surgery Outcome and Operative Time Analysis by Body Mass Index

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ear: β=4.4dB [95% CI, 2.7-6.1], left ear: β=2.8dB [95% CI, 0.7-4.9]) but not with tinnitus.

Conclusion: The US population prevalence of any cerumen impaction was found to be high and to have a disproportionate impact across sociodemographic groups. Cerumen impaction was significantly associated with hearing loss. These findings emphasize the need to implement and disseminate best practices for ear hygiene and cerumen management broadly and equitably.

Chronic Facial Nerve Paralysis, Initially Diagnosed as Bell Palsy, Found to be a Paraganglioma of the Facial Nerve

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Introduction: We present the case of a paraganglioma of the facial nerve found in a patient with a 7-year history of facial paralysis diagnosed as Bell palsy. This report discusses the clinical presentation and diagnosis of this rare tumor including imaging and histopathologic findings.

Method: This is a clinical case report including a literature review conducted using the PubMed database for terms "facial nerve paraganglioma" and "facial nerve mass."

Results: Twenty-two histologically confirmed facial nerve paraganglioma cases were identified in the literature. Females were 3 times more affected than males. Age at presentation ranged from 20 to 74 years. The most common presenting symptom was facial dysfunction (on average a House-Brackmann III/VI) in almost 75% of patients. Less commonly present was tinnitus or hearing loss. At least 5 patients had an obstructing mass in the external auditory canal, 4 had a visible mass in the middle ear, and 2 had palpable parotid masses. Positive imaging findings were present in all cases and included expansion of the descending facial canal on computed tomography (CT) and an enhancing mass in the mastoid on contrasted magnetic resonance imaging (MRI).

Conclusion: Facial nerve paraganglioma is a rare indolent tumor that may present as isolated facial nerve dysfunction. This tumor often has characteristic findings that may be identified on CT and MRI. Management can vary by patient and severity of symptoms. Surgical management involves a combined mastoid and parotid approach to the nerve for resection with subsequent facial reanimation.

Clinical and Audiological Outcomes After Transcutaneous Osseointegrated Steady-State Implant

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Introduction: The purpose of this study is to examine audiologic and subjective outcomes in patients who underwent implantation of the Cochlear Osseointegrated Steady-State Implant Bone Anchored Hearing Device (Osia).

Method: A retrospective study was conducted at a single institution. Surgery was performed by 1 surgeon on adult patients who met criteria for bone-anchored hearing device, with mixed hearing loss (MHL) or single-sided deafness (SSD). Thirty patients (age range 27–86 years) have been implanted since Osia became available in January 2020. One-tailed *t* tests were used to evaluate pre- and postoperative speech testing (consonant-nucleus-consonant [CNC], AzBio in quiet, AzBio in noise). Glasgow Benefit Index surveys were collected to quantify self-perceived benefit. Chart review was conducted to evaluate issues with the external device.

Results: Both SSD and MHL patients had significant improvement in hearing after Osia implantation. Preoperative unaided CNC average of 9% improved to 82% with Osia; AzBio in quiet improved from 18% to 95%; AzBio in noise improved from 30% to 92% ($P<.05$). Preoperative CNC and AzBio testing with headband predicted audiologic benefit with the Osia. Preoperative headband CNC average of 80% corresponded with CNC 80% with Osia; AzBio in quiet average of 92% corresponded with 94% with Osia; AzBio in noise average of 86% corresponded with 87% with Osia. On the Glasgow Benefit Index, patients perceived benefit from the Osia (+52.5 [range +16 to +79]. The main complaints with the device included magnet strength and durability of the processor. The external device had to be replaced in 10 patients after the device fell from a height. One patient with medical comorbidities had extrusion of the device requiring surgical removal.

Conclusion: Patients with SSD and MHL received significant benefit from the Osia device. The Glasgow Benefit Index demonstrated significant perceived benefit from the Osia. The main complaints with the external device included magnet strength and durability. Overall, the Osia significantly improved hearing and quality of life in patients with SSD and MHL.

Closing the Gap: Stapes Surgery Outcome and Operative Time Analysis by Body Mass Index

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Introduction: Both stapedectomy and stapedotomy have proven to be extremely effective in correcting conductive hearing loss. However, patients with higher body mass index (BMI) could make the surgery more challenging due to their larger shoulder forcing the surgeon to adjust their hand position or posture. By the same token, right stapes surgery can be more challenging for right-handed surgeons. We investigate

the impact BMI and the side of operated ear have on postoperative air-bone gap (ABG), complication rates, and operative time.

Method: A retrospective chart review was performed on patients undergoing stapedectomy or stapedotomy for otosclerosis at a tertiary referral center from January 2015 to December 2020. To normalize for differences in operative time, stapes surgeries performed by a single, right-handed surgeon were selected (n=132). Inclusion criteria were age ≥18 years and complete postoperative follow-up note. Of the 117 patients included, 95 had both pre- and postoperative audiometric results. Patients were divided into underweight/normal weight (BMI <25; n=42) and overweight/obese (BMI ≥25; n=75) for 2-group analysis, with the latter group being further subdivided into overweight (BMI ≥25 to 29.9; n=35) and obese (BMI ≥30; n=40) for 3-group analysis.

Results: There was no significant difference in operating time based on BMI according to 2-group analysis (44.1±12.6 minutes [mean±SD] vs 45.7±15.9, P=.583; t test) and 3-group analysis (44.1±12.6 vs. 46.5±17.0 vs. 45.0±15.0, P=.780; analysis of variance). This was also the case, regardless of side of the ear operated on, for patients with low BMI (P=.789) and high BMI (P=.764). Complication rate was also similar among BMI groups, with the most common complaint being transient dizziness (13 of 42, 31.0% vs 30 of 75, 40.0%, P=.330; χ^2 test) and transient mild taste disturbance (5 of 32, 11.9% vs 9 of 75, 12.0%, P=.988). Moreover, ABG improvement was similar when comparing BMI categories (16.5±11.4 dB vs 18.2±10.9, P=.455).

Conclusion: BMI and side of operated ear do not appear to affect operative time, complication frequency, or hearing outcomes.

Cochlear Implants in Social Media: A Natural Language Processing Analysis of the Online Perspective

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Introduction: Social media in medicine has increased over the past decade, with use by doctors, hospitals, and patients. Natural language processing (NLP) algorithms can be used to assess social media data and output a depiction of a topic's online presence. The purpose of this study was to use NLP to analyze how cochlear implant devices are depicted on Twitter. Results from this study can be used to inform ENT surgeons about how these devices are being represented online.

Method: Posts were pulled from January to December 2021 using Twitter's application programming interface (API) based on the hashtag #cochlearimplant. NLP in Python was used to assign tone values to each post. Assessment of content was also performed using Python-based computational text analysis methods. NLP defines tones on a scale of –1.0 to 1.0, with positive posts generally being accepted as those with a tone >0.5 and negative posts with tone <–0.5.

Results: In total, 5121 tweets were collected. The average NLP-assigned tone value was 0.35±0.36. Of posts, 59.2% were neutral, 39.6% positive, and 1.2% negative. Of the positive tweets, content was mainly focused on educational material about cochlear implants and personal patient stories. The content of the negative tweets focused on negative experiences related to implants or their lack of availability. The neutral tweets were mostly focused on new research, technological product developments, and professional organizations sharing either educational information or patient stories.

Conclusion: The vast majority of posts classified as positive or neutral could indicate that Twitter is largely not a forum where people go to complain or speak negatively about cochlear implants. The devices instead receive a sizable percentage of positive discourse. Twitter seems to mostly be used for factual-based content about cochlear implants, such as patient education, new research, and technology updates. This supports the use of Twitter as an educational outlet for cochlear implant patient information as well as a tool to globally share new cochlear implant research.

Comparison of Spiral Ganglion Neuronal Counts in Human Temporal Bones Harboring Vestibular Schwannomas

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Introduction: Vestibular schwannomas are benign Schwann cell tumors of the vestibular nerve and are frequently associated with progressive sensorineural hearing loss (SNHL). Tumors can be caused by sporadic mutations in the *NF2* gene or by congenital loss of *NF2*, which is associated with neurofibromatosis type 2. Our previous work in a mouse model of *NF2* demonstrated that SNHL was associated with a cochlear phenotype, which could in part explain the sensorineural hearing loss in patients with vestibular schwannomas. In this preliminary human temporal bone study, we compared numbers of spiral ganglion neurons (SGNs) in human temporal bone specimens associated with sporadic vestibular schwannomas and *NF2*-associated vestibular schwannomas.

Method: We scanned our National Temporal Bone Registry for cases of vestibular schwannomas without additional cochlear or retrocochlear pathology. A total of 28 schwannoma cases were identified. We selected 5 cases of sporadic schwannomas and 3 cases of *NF2* that had sufficient hematoxylin and eosin imaging for quantification as well as