

ABSTRACTBOOK

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O01

Evaluation de la performance auditive chez les patients porteurs d'un implant cochléo-vestibulaire (CVI)

Sonia Macario, Angelica Perez Fornos, Julie Corre, Maurizio Ranieri, Samuel Cavuscens, Nils Guinand
HUG Genève

Introduction :

L'AMP (Audio-Motion Processor) est le nouveau processeur portable de l'implant cochléo-vestibulaire (CVI) qui se profile comme une option thérapeutique pour les patients avec un déficit vestibulaire bilatéral (DVB). Le but de cette étude est d'évaluer les possibles interférences entre la stimulation électrique vestibulaire et les performances auditives.

Méthode :

Nous incluons 4 patients avec DVB, porteurs d'un CVI (3f-1h/60-75ans/7mois-14ans post op) contrôlé par l'AMP ou par un processeur standard (SP) d'implant cochléaire. Le but est d'évaluer la performance auditive, en champ libre, avec un audiogramme tonal (PTA) et un audiogramme vocal (% de compréhension à 65 dB) dans plusieurs conditions de réhabilitation auditive : pas de réhabilitation, SP seul, appareil auditif controlatéral (AAc) seul, SP + AAc, AMP seul, AMP + AAc, AMP + Vestibulaire (V), AMP + V + AAc, V + AAc, ainsi que la qualité du son entre AMP et SP.

Résultats :

Les résultats montrent un gain significatif de la performance auditive avec l'AMP et le SP sans différence significative entre les 2 types de processeurs. La stimulation vestibulaire en mode baseline n'affecte pas significativement la performance auditive. Il n'y a pas de différence significative entre la qualité de la perception auditive avec l'AMP et le SP.

Conclusion :

Les résultats sont prometteurs, en effet ils indiquent que l'AMP est équivalent au SP en terme de performance auditive et de qualité subjective et que la stimulation vestibulaire concomitante n'affecte pas les performance auditive de façon significative.

O02

Video-oculography ‘HINTS’ in acute vestibular syndrome: a prospective study

Diego Rodriguez, Athanasia Korda, Wilhelm Wimmer, Ewa Zamaro, Franca Wanger, Thomas Sauter, Marco Domenico Caversaccio, Georgios Mantokoudis
Inselspital Bern; Zentrum für HNO – Hals- & Gesichtschirurgie Burgdorf

Objective:

A three-step bedside test (‘HINTS’:Head Impulse-Nystagmus-Test of Skew), is a well-established way to differentiate peripheral from central causes in patients with acute vestibular syndrome (AVS). Nowadays, the use of videooculography (VOG) gives the physicians the possibility to quantify all these eye movements. Goal of this study is to compare the accuracy of the VOG “HINTS” to an expert evaluation.

Methods:

We performed a prospective study from February 2015 until September 2020 on all patients presenting at the emergency department (ED) with signs of an AVS. All patients underwent clinical and VOG ‘HINTS’ followed by a delayed MRI, which served as a gold standard for stroke confirmation.

Results:

We assessed 46 AVS patients, 35 acute unilateral vestibulopathy patients (AUVP) and 11 stroke patients. The overall accuracy of VOG ‘HINTS’ to detect a central pathology was 94% with 100% sensitivity and 88.9% specificity. Experts, however, assessed ‘HINTS’ clinically with a lower accuracy of 88%, 90.9% sensitivity and 85.7% specificity. The agreement between clinical and VOG head impulse test was good, whereas for nystagmus direction was fair.

Conclusions:

VOG ‘HINTS’ proved to be very accurate in detecting strokes in AVS patients, with 9 %points better sensitivity than the expert. The evaluation of nystagmus direction was the most difficult part of HINTS.

O03

Vestibular Schwannoma Volumetry

Alex Vils, Christof Rööfli, Alexander Huber, Lorenz Epprecht
Universitätsspital Zürich & Universität Zürich

Objectives:

Volumetry assesses the tumor as a whole as opposed to linear tumor diameter measurement. Current manual volumetry, however, is time consuming and is therefore not widely used. We therefore developed a new volumetry method and tested the algorithm in this study.

Material and methods:

We compared three different volumetry methods on magnetic resonance images with VS that were acquired during the regular follow up of VS patients. Manual segmentation on T1-weighted contrast enhanced images and highly T2-weighted images was performed in 3D slicer (slicer.org). A novel intensity based approach was used for the determination of tumor volume. Inputs to the algorithm were the mean intensity of a region of interest around the VS and the peritumoral area as well as the mean intensity of the VS itself. The tumor volumes from the three different methods were compared.

Results:

We analyzed 41 VS (6 neurofibromatosis type II VS). Mean tumor volume on high resolution, highly T2-weighted images was 1.7 cm³ +/- 2.8cm³. The correlation between tumor volume on high resolution, highly T2-weighted images (e.g. CISS) and the semi-automated method was very good ($r=0.96$, $p < 0.001$).

Conclusions:

In our analysis, we tested a new intensity based volumetry method that correlated well with manual segmentation. This approach can help to adopt volumetry for every day clinical use.

O04

Preliminary study on the effectiveness of the Geneva Balance Test (GBT) on children with bilateral vestibulopathy

Emile G. Monin, Céline Bahim, Maurizio Ranieri, Jean-François Cugnot, Lou Baussand, Nils Guinand, Hélène Cao Van, Angélica Pérez Fornos
HUG Hôpitaux Universitaires Genève

Background:

Vestibular deficits are rare in children. The few studies made on this topic demonstrated that chronic vestibular dysfunction impacts the development. To this purpose, we have developed a screening test to quantify the balance capacity of children over a broad age range, the Geneva Balance Test (GBT).

Methods:

The aim of the study was to determine the possibility of quantifying balance deficits in children with bilateral vestibulopathy (BV) using the GBT. We conducted an observational prospective study in a population of 11 children with BV, with two age-matched control groups: (1) 15 healthy children without vestibular nor auditory disorder (HS) and (2) 11 pediatric cochlear implant recipients (CI) without vestibular disorders. Results of the three populations have been compared in 3 age groups (3-5 years, 6-9 years, ≥ 10 years), and with results of the BOT-2.

Results:

Statistical analyses demonstrated significant differences in the GBT scores between 3-5 and ≥ 10 years children with BV and both control populations. A similar tendency was observed in the 6-9 years group, but results did not reach significance for this smaller group. Children in the 3-5 years CI group showed intermediate balance capacities, that normalize in the 6-9 years group.

Conclusions:

The results were of the GBT were comparable with the results of the BOT-2. The GBT showed potential to be a useful tool to monitor the development of balance, and as such could be used in the follow-up of children with BV. Interestingly, we observed a significant difference in balance capacities in very young CI children which normalized by 6-9 years, potentially due to hearing rehabilitation.

O05

Strahlungsfreie Schätzung der Elektrodeneinführtiefe von Cochlea-Implantaten mittels Impedanz-Telemetrie: Vorläufige Ergebnisse zu intraoperativer Genauigkeit und langfristiger Stabilität

Stephan Schraivogel, Philipp Aebischer, Georgios Mantokoudis, Stefan Weder, Marco Caversaccio, Wilhelm Wimmer

Hearing Research Laboratory, ARTORG Center for Biomedical Engineering Research, University of Bern, Switzerland; Department for Otolaryngology, Head and Neck Surgery, Inselspital, University Hospital Bern, Switzerland

Ziele:

Das primäre Ziel dieser retrospektiven Analyse ist die Validierung einer zuvor veröffentlichten und Impedanz basierten Methode zur Schätzung der Elektrodeneinführtiefe. Das sekundäre Ziel besteht darin, die Stabilität der Schätzmethode über einen längeren Zeitraum zu bewerten.

Material und Methoden:

In 70 Fällen mit lateralen Wandelektroden wurde die Ground-Truth Einführtiefe anhand von Computertomographie-Bildern gemessen. Für jeden dieser Fälle wurden Impedanz-Telemetrie Aufzeichnungen am Implantationsdatum bis zu einem Beobachtungszeitraum von mindestens 1 Jahr abgerufen. Anhand dieser Aufzeichnungen wurden die linearen und angulären Elektrodeneinführtiefen mit einem phänomenologischen Modell geschätzt. Die Genauigkeit der erhaltenen Schätzungen wurde im Vergleich mit Ground Truth Werten berechnet.

Resultate:

Die intraoperative Genauigkeit wurde vorläufig für 57 vollständig inserierte Fälle berechnet. Die Einführtiefen aller Elektroden wurden mit einem mittleren absoluten linearen Fehler von $0,78 \pm 0,63$ mm und einem Winkelfehler von $20,52 \pm 17,39^\circ$ (Mittelwert plus/minus Standardabweichung) im Vergleich zur postoperativen Ground Truth geschätzt. Die Stabilität der Schätzmethode wurde anhand von 52 Fällen über einen Zeitraum von 14 bis 86 Monaten analysiert. Die Berechnungen ergaben einen mittleren absoluten linearen Fehler von 0,89 mm und einen Winkelfehler von $22,84^\circ$.

Schlussfolgerungen:

Die vorgestellte strahlungsfreie Methode zur Schätzung der Elektrodeneinführtiefen liefert stabile Schätzungen während und nach der CI-Insertion. Unsere Methode könnte neue und klinisch relevante Anwendungen wie zum Beispiel anatomiebasierte Anpassungsstrategien ermöglichen.

O06

Audiological Outcome and Subjective Benefit of Cochlear Implant in Single Sided Deafness (SSD): The LUKS Experience

Claudia Candreia, Armina Kreuzer, Susana Castellanos

Luzerner Kantonsspital; Luzerner Kantonsspital (LUKS); Kantonsspital Luzern

Single sided deafness is the most recent audiological indication for Cochlea Implantation in Switzerland. In Literature audiological benefit, especially in noise and directional hearing and subjective benefit on tinnitus suppression are well documented. For our own patient population in the LUKS we aim to verify this beneficial outcome and critically reconsider the diagnostic and therapeutic work-up in a retrospective chart review, combined with questionnaires and, where available, electrophysiological measurements of electrically evoked cortical auditory potentials (e-CAEP).

Up to 12/2021 a total of 18 adults received a unilateral CI for SSD. Subjective benefit, rehabilitation and use of CI in daily live, audiological outcome, and - in a subgroup -correlation of audiological and subjective benefit with CAEP-Results are presented. Results are compared to outcomes found in literature and conclusions are drawn for optimizing diagnostic algorithms and rehabilitation.

O07

Treatment of acute otitis media with inner ear complications in adults.

Soner Dogan, Christof Röösl, Alexander Huber

UniversitätsSpital Zürich, Klinik für Ohren-, Nasen-, Hals- und Gesichtschirurgie

Aim:

The treatment of complicated acute otitis media(OMA) is a matter of debate, especially in case of labyrinthitis with sensorineural hearing loss. The aim of this study is to analyze the outcome of different treatment modalities with a focus on hearing.

Methods:

A retrospective single-center study included 116 patients with complicated OMA between 2000 and 2020. Complications were defined as hearing loss with a pure tone average of >15dB in at least two frequencies or vestibular symptoms. Pre- and post-treatment cochleo-vestibular symptoms and audiograms were compared. According to the treatment modality a patient was subdivided into three groups: conservative(antibiotics), paracentesis, operative(antrotomy).

Results:

A total of 25 patients were assigned to the antibiotics group, 36 to the paracentesis group and 55 to the antrotomy group. The antibiotics group improved from 27 dB to 18 dB, the paracentesis group from 27 dB to 18 dB and the antrotomy group from 33 dB to 21 dB. Vestibular symptoms were described in 5 patients(20%) of the antibiotics group, in 16 patients(44%) of the paracentesis group and in 25 patients(45%) in the antrotomy group.

Conclusion:

An improvement of hearing threshold was seen in all three groups. The patient treated with antrotomy tended to have higher hearing loss compared to the other two groups. Patients with initial vestibular symptoms were more likely to undergo intervention/operative treatment.

O08

Health-related quality of life in patients after endoscopic and microscopic cholesteatoma surgery

Yannik Raemy, David Bächinger, Nicole Peter, Christof Rööfli
Department of Otorhinolaryngology, Head and Neck Surgery, University Hospital Zurich, University of Zurich, Switzerland

Aim:

Different surgical techniques exist for the treatment of cholesteatoma, such as microscopical or transcanal endoscopic ear surgery (TEES). This study aims to compare these surgical techniques with a focus on health-related quality of life (HRQoL).

Methods:

This retrospective single-center study included 255 cholesteatoma patients who underwent surgery between April 2016 and June 2021. The primary outcome was the assessment of HRQoL (using the Zurich Chronic Middle Ear Inventory, ZCMEI-21) preoperatively, 3 and 12 months postoperatively regarding surgical technique and intraoperative staging of the cholesteatoma (ChOLE classification). Secondary outcomes included hearing measured preoperatively, 3 and 12 months postoperatively, complications assessed 3 months postoperatively and recidivism.

Results:

A total of 37 patients (14.5%) underwent TEES. Overall, 76 (29.7%) patients completed the preoperative, 50 the 3 months and 25 the 12 months postoperative ZCMEI-21. The ZCMEI-21 total scores preoperatively were not significantly different between the two groups ($p=0.17$). An improvement in HRQoL one year postoperatively was observed in both groups to a comparable extent. In the TEES group, the cholesteatoma tended to be smaller (lower ChOLE stage) and hearing was better. While the complication rate was similar in both groups, the recurrence rate was lower in the TEES group ($n=1$ (2.7%) vs. $n=44$ (19.5%)).

Conclusion:

TEES is a valuable alternative to the traditional microscopic technique, at least for small cholesteatoma. The better postoperative hearing and lower rate of recidivism in the TEES group may be related to the smaller extent of the cholesteatoma.

O09

Validierung eines Einführungswerkzeugs zur Reduzierung von Kraft- und Druckspitzen bei der konventionellen Cochlea-Implantation

Philipp Aebischer, Marco Caversaccio, Wilhelm Wimmer

ARTORG Center for Biomedical Engineering, University of Bern; Inselspital - Universitätsspital Bern

Bei der Cochlea-Implantation wird das Einführen des Elektrodenträgers in der Regel manuell mit herkömmlichen chirurgischen Instrumenten durchgeführt. In diesem Beitrag stellen wir ein Konzept für eine Einführhilfe vor, die es ermöglicht, die intracochleäre Ausrichtung über anatomische Beschränkungen hinaus zu optimieren und den Elektrodenträger zu stabilisieren. Es handelt sich um eine dünne, bogenförmige Hülse, welche durch die Rundfensternische verläuft und ihre Stabilität nur durch die Interaktion mit der innenliegenden Elektrode erhält – vergleichbar mit einer aufblasbaren Struktur. Dadurch ist das Instrument während der Positionierung potenziell schonend gegenüber der intracochleären Anatomie. Durch einfaches Zurückziehen nach dem Einführen des Elektrodenträgers breitet sich ein Einschnitt entlang der Hülse aus, wodurch diese sich öffnet und entfernen lässt.

Ein Vergleich mit konventionellen Einführungen in einem Schläfenbeinmodell zeigt eine signifikante Reduzierung der maximalen Einführkräfte, der Kraftschwankungen und der Transversalbewegung des Elektrodenträgers, was sich auch in einer Reduktion der Druckspitzen um 29 dB niederschlägt.

Das Einführungswerkzeug ist für die manuelle Cochlea-Implantation ausgelegt, das Konzept lässt sich jedoch auch auf motorisierte und robotergestützte Einführungen sowie auf bildgesteuerte Verfahren übertragen.

O10

Sind Smartwatches ein geeignetes Instrument zur Überwachung von Lärmbelastung?

Wilhelm Wimmer, Tim Fischer, Stephan Schraivogel, Marco Caversaccio
Hearing Research Laboratory, Inselspital Bern und Universität Bern

Einführung:

Lärmschwerhörigkeit und Tinnitus sind weitverbreitete Probleme, die durch Gehörschutzmassnahmen verhindert werden können. Schallpegelmesser und Lärmdosimeter ermöglichen die Überwachung von gesundheitsgefährdendem Arbeits- oder Freizeitlärm, sind aber in ihrer täglichen Anwendung eingeschränkt, da sie in der Regel schwer zu bedienen, sperrig und teuer sind. Smartwatches, die zunehmend beliebter werden, könnten eine wertvolle Alternative sein. Ziel dieser Studie war es daher, die Anwendbarkeit von Smartwatches für die genaue Überwachung von Umgebungslärm zu bewerten.

Methoden:

Im Rahmen der Studie wurde die Lärmbelastung in 13 unterschiedlichen Arbeits- und Freizeitumgebungen gemessen und zwischen einem professionellen Schallpegelmesser und einer Smartwatch verglichen. Die Messumgebungen deckten einen grossen Bereich von Schalldruckpegeln zwischen 35 und 110 dBA ab. Die Messübereinstimmung wurden mittels Bland-Altman-Diagramm und Intraklassen-Korrelationskoeffizient (ICC) bewertet.

Resultate:

Insgesamt unterschätzte die Smartwatch die Messungen des Schallpegelmessers um 0,5 dBA (95% CI [0,2, 0,8]). Der ICC zeigte eine ausgezeichnete Übereinstimmung zwischen den beiden Geräten (ICC = 0,99).

Fazit:

Die Bewertung des Umgebungslärms mit der getesteten Smartwatch ist ausreichend genau und zuverlässig, um das Bewusstsein für gefährliche Lärmpegel in der persönlichen Umgebung zu verbessern und um explorative klinische Forschung durchzuführen. Für rechtsverbindliche Messungen empfehlen wir spezielle Schallpegelmesser oder Lärmdosimeter. In Zukunft können Smartwatches eine wichtige Rolle bei der Überwachung der persönlichen Lärmbelastung spielen.

O11

New Developed Microphone Technology for a Fully Implantable Cochlear Implant

Flurin Pfiffner, Lukas Prochazka, Adrian Dalbert, Christof Röösl, Alexander Huber
Department of Otorhinolaryngology, Head&Neck Surgery, University Hospital Zurich,
University of Zurich, Switzerland

The goal of this project is to develop and validate a new microphone technology for a totally implantable cochlear implant (TICI) system. This new microphone concept is based on an acoustic receiver situated within the cochlea. Such a device records the intracochlear sound pressure (ICSP) and makes use of the natural amplification and directivity of sound from the outer to the inner. Existing devices to measure ICSP are not suitable for our application, mainly because of limitations of the sensor's performance. Low power consumption and biocompatibility are additional requirements for our intracochlear acoustic receiver (ICAR) concept.

Our ICAR concept is based on a commercial MEMS condenser microphone customized with a protective diaphragm that provides a seal and an optimized geometry for accessing the liquid filled inner ear. Two design configurations of the ICAR were developed and fabricated: (1) a sensor for laboratory use on cadaver samples with sophisticated positioning capabilities and adaptive sensor head geometry and (2) an implantable version of the ICAR that can be simply plugged into the cochlear duct during in-vivo experiments in sheep.

The two types of the ICAR have been successfully fabricated and tested. The ICSP measurements in a human cadaver temporal bone and in sheep yielded data in agreement with the literature. The surgeons reported high levels of ease of use and satisfaction with the system design.

Our results confirm that the presented ICAR's can be used for measuring ICSP in human temporal bones and acute large animal experiments. The concept has potential as an acoustic receiver in totally implantable cochlear implants.

O12

Rate der durch FDG-PET-CT/MRI erkannten Tumorrezidive nach initial negativem 3-Monats PET-Scan bei kurativ therapierten Patienten mit fortgeschrittenem HNSCC

Oliver Sutter, Alexander Maurer, Thomas Stadler, Martin Lanzer, Martin Hüllner, Martina Broglie Däppen

Universität Zürich, Unispital Zürich; UniSpital Zürich

Ziele:

Die neuen NCCN Guidelines zur Nachsorgebildung empfehlen nun bei fortgeschrittenem HNSCC keine weiteren PET-Scans, sollte der 3-Monatsscan negativ ausfallen. Dies wollen wir durch eine Analyse von Rezidiven unserer Patientenkohorte verifizieren.

Material und Methoden:

Wir führten eine retrospektive Studie aller fortgeschrittenen HNSCC (T3/4, N+) durch, welche zwischen dem 01.04.2010 und dem 31.12.2020 am Universitätsspital Zürich behandelt wurden. Wir quantifizierten die Rezidivrate der verschiedenen Lokalisationen, die Zeit welche bis zur Entdeckung der Rezidive verging sowie die Modalität mit welcher die Rezidive detektiert wurden (PET vs. klinisch vs. Sonographie vs. CT/MRI).

Resultate:

327 Patienten wurden eingeschlossen, das mittlere Alter lag bei 63 Jahren und 71% waren männlich. Die Rezidivrate nach initial negativem 3-Monats PET betrug 18%. In 64% wurden diese Rezidive primär durch PET-CT/MRI erkannt. Die durch PET-CT/MRI erkannten Rezidive traten in 59% beim 9-Monats Scan, in 23% im 15/18-Monats Scan und in 16% im 24-Monats Scan auf. Die häufigste betroffene Tumorlokalisierung war der Hypopharynx mit 32%, gefolgt von der Mundhöhle und Oropharynx mit 20% bzw. 13%. Bei T-4 Tumoren traten mit 24% am häufigsten spätere Rezidive auf, gefolgt von 14% bei T-3 Tumoren.

Schlussfolgerung:

Rezidive zeigten sich bei 18% der Patienten auch nach negativem 3-Monats PET-CT/MRI und in 64% wurden diese durch geplante PET-CT/MRI detektiert. Insbesondere bei T-4 Tumoren des Hypo-, Oropharynx und Mundhöhle erscheint eine routinemässige Nachsorge mittels PET-CT/MRI sinnvoll.

O13

Can Markers of Systemic Inflammation in Addition to Parameters of Tumor Metabolism Predict Survival in Head and Neck Cancer Patients Undergoing Radiotherapy?

Jonas Werner, Klaus Strobel, Dirk Lehnick, Gunesh Rajan
Luzerner Kantonsspital; Universität Luzern

Aims:

The aim of the study is to offer a comprehensive investigation of pretherapeutic markers of systemic host immune response and metabolic tumor parameters from 18-fluorodeoxyglucose positron emission tomography (FDG-PET/CT) imaging and evaluate if they could predict treatment response and survival in head and neck cancer patients prior to primary chemoradiation.

Methodology:

Systemic inflammatory markers such as platelet-to-lymphocyte ratio (PLR), neutrophil-to-lymphocyte ratio (NLR), lymphocyte-to-monocyte ratio (LMR), systemic inflammation response index (SIRI), systemic immune-inflammation index (SII), and metabolic parameters of primary tumor and nodal metastases including maximum standardized uptake value (SUVmax), metabolic tumor volume (MTV), and total lesion glycolysis (TLG) were retrospectively assessed in a consecutive cohort of head and neck squamous cell cancer patients undergoing primary chemoradiation. The main outcome measure was survival.

Results:

The study included 110 patients with a median follow-up of 32.5 months (IQR 14.3-52). The results from multivariate analysis are pending.

Conclusion:

Depending on the results from multivariate analysis, parameters of tumor metabolism and systemic inflammation may be used in combination to prognosticate radiotherapy resistance and survival in head and neck cancer on top of the TNM staging system.

O14

Pronostic oncologique du rendement et ratio des évidements ganglionnaires sélectifs et radicaux avant ou après radiothérapie des cancers de la tête et du cou

Sean Sheppard, Lukas Frech, Roland Giger, Lluís Nisa
Inselspital - Universitätsspital Bern

Objectifs:

Identifier le retentissement de la (chimio)radiothérapie (CRT) sur le rendement et le ratio des ganglions du cou chez des patients souffrant de carcinomes épidermoïdes de la tête et du cou. Analyser le retentissement pronostique du rendement et du ratio ganglionnaire.

Matériel/méthode:

Nous avons effectué une étude rétrospective incluant 252 patients atteints de carcinome épidermoïde de la tête et du cou ayant bénéficié d'un évidement ganglionnaire (EG) de janvier 2014 à juin 2019 à l'hôpital universitaire de Berne, en Suisse. Le rendement et le ratio ganglionnaire ont été comparés chez les patients recevant un EG avant ou après la CRT. Au total, 137 et 115 patients ont subi un EG radical (niveaux I à V) et 115 un EG sélectif. Les caractéristiques pronostiques sur la survie et le contrôle locoregional ont été évalués.

Résultats:

Parmi les patients inclus, 170 étaient des hommes et 82 des femmes. Les tumeurs primaires provenaient de la cavité orale (141), de l'oropharynx (55) et du larynx (28). Les échantillons d'EG ont montré un stade pN0 chez 105 patients et pN+ chez 147. Le taux de rendement ganglionnaire était significativement inférieur après (chimio)radiothérapie (médiane : 22 vs 38, $p < 0,0001$). La régression de Cox a montré qu'un ratio ganglionnaire $\geq 6,5$ % était corrélé à une faible survie (HR 2,42, CI 1,12-4,89, $p = 0,014$) et le contrôle régional (HR 3,416, CI 1,54-754, $p = 0,003$) dans le cas des EG radicaux.

Conclusion:

L'EG après CRT entraîne une réduction significative du rendement ganglionnaire. Un ratio ganglionnaire ≥ 6.5 % est un facteur de risque indépendant de diminution de la survie globale, du contrôle locoregional concernant les EG radicaux.

O15

Profunda Artery Perforator Flap Tongue Reconstruction: An Effective and Safe Alternative to the Anterolateral Thigh Flap

Laurent Muller, Tarek Ismail, Pablo Padilla, David Kurlander, Joseph Corkum, Jun Liu, Matthew Hanasono, Patrick Garvey, Edward Chang, Peirong Yu, René Largo
University Hospital of Basel; University Hospital Basel; The University of Texas Medical Branch; The University of Texas MD Anderson Cancer Center

Background

The anterolateral thigh perforator (ALT) flap is a workhorse for tongue reconstruction. The authors present an alternative method using the profunda artery perforator (PAP) flap and compare its volume change over time, functional outcomes, donor morbidity, and recipient site complications with those of the anterolateral thigh perforator flap.

Methods

A retrospective review was conducted of 78 patients who underwent tongue reconstruction between 2016 and 2020, including 54 ALT and 24 PAP flaps. The volume was assessed with CT scans at 2 different time points. Quality of life and speech and swallow function was measured by the MD Anderson Symptom Inventory for head and neck cancer (MDASI-HN).

Results

The mean flap volume loss 7 months after surgery was 35.8 % for ALT and 29.9% for PAP flaps ($p = 0.931$), respectively. Radiation and Chemotherapy did not have an effect on volume change over time. BMI in patients reconstructed with PAP flaps was significantly lower than in patients reconstructed with ALT flaps (25.78 ± 5.1 vs. 22.65 ± 4.96 ; $P = 0.014$). Donor site and recipient site complications were not significantly different between ALT and PAP patients. The most frequently reported high-severity items in MDASI-HN were swallowing/chewing and voice/speech.

Conclusion

PAP and ALT flaps are both safe and effective for subtotal and total tongue reconstruction. Flap selection should be guided by examination of each patient's donor site and the post-resection defect encountered.

O16

Association between preoperative sarcopenia and clinical outcomes in patients undergoing total laryngectomies for cancer

Victoria Salati, Katerina Mandralis, Fabio Becce, Karma Lambercy, Christian Simon, François Gorostidi

CHUV Centre Hospitalier Universitaire Vaudois (CHUV)

Objectives

Sarcopenia is characterized by a loss of skeletal muscle mass and strength, which is common in surgical oncology. The study aim was to assess the role of preoperative CT-based sarcopenia on postoperative outcomes in patients undergoing total laryngectomy for cancer.

Material and Method

This retrospective study included patients operated between 01/2011 and 03/2020. Skeletal muscle index (SMI) was measured at the level of the third lumbar vertebra on preoperative CT scans. Sarcopenia was defined based on pre-established cut-offs, and its impact on postoperative morbidity and length of stay (LOS) was assessed. Independent risk factors for fistulas were identified by uni- and multi-variate analysis.

Results

This is a preliminary report of 49 patients over 100 included, and 13 (27%) had preoperative sarcopenia. There was no difference in age (61 vs 65, $p=0.346$) and sex (85 vs 69% male sex, $p=0.467$), but patients with sarcopenia had lower BMI (18.9 vs 24.6 kg/m², $p < 0.001$). The rate of postoperative fistula (31 vs 31%, $p=1.000$), cutaneous cervical dehiscence (15 vs 8%, $p=0.598$) and reoperation (39 vs 36%, $p=1.000$) were comparable between the 2 groups, while cutaneous infections were more frequent in the group with sarcopenia (31 vs 3%, $p=0.014$). No difference in median LOS was observed (28 vs 29 days, $p=0.982$).

Conclusion

About a third of patients undergoing total laryngectomy had preoperative sarcopenia. However, no associations were observed between preoperative sarcopenia and postoperative clinical outcomes, except for local infectious complications. Sarcopenia may be accurately and easily assessed on CT imaging and may be useful as a prognostic parameter.

O17

Early Management of External Laryngotracheal Trauma : What You Must Know

Laurence Pincet, Nicola Glasson, François Gorostidi, Kishore Sandu
CHUV Centre Hospitalier Universitaire Vaudois (CHUV)

Introduction :

External laryngeal trauma, blunt or penetrating, is a rare but potentially life-threatening injury. Immediate care in the emergency department can be challenging because it requires managing potentially unstable airway or vascular damages with massive bleeding. ENT surgeons are often implicated, as members of DART (Difficult Airway Response Team) and for handling cervical injuries.

Material and Results :

In this presentation, we aim to propose a practical approach that specifies the role of the ENT surgeon in the emergency resuscitation room during the “ABCDE” evaluation. We built an easily applied decisional protocol. Then we present an overview of the early surgical management, with the main principles of the surgery and each lesion’s specificity.

As an illustration, we present a retrospective review of 22 patients with laryngeal trauma, treated in the CHUV from 2005 to 2020. Two were treated endoscopically, twelve with an open surgery, and eight conservatively.

Conclusion :

The success of managing external laryngeal trauma relies on fast decisions leading to correct evaluation and control of upper airways and hemodynamical stability. Close collaboration between them and ENT surgeons is crucial, and everyone must know the role, the resources and the limits of each team.

O18

Congenital anomalies of the cricoid cartilage: upper airway obstruction and treatment strategy

Edwige Gombert, Kishore Sandu
CHUV - Hôpital universitaire

O:

Endoscopic evaluation of the various types of congenital cricoid cartilage malformation causing upper airway obstruction and determine the most suitable treatment option.

M&M:

Retrospective case series in a tertiary care pediatric referral center. We reviewed 27 patients under 18 years old with an endoscopic diagnosis of congenital cricoid malformation treated at the CHUV Lausanne between 1985 and 2020. Patients were grouped according to the type of cricoid malformation, airway symptoms and the treatment offered. Decannulation was the primary endpoint. We studied treatment complications and additional airway procedures that were subsequently required to achieve an age-appropriate airway.

R:

23 of the 27 patient cohort underwent surgery. Mean age at surgery ranged from 10 days to 17 years (M=34.4 month, SD=52.2 month). 7 patients had an elliptic cricoid malformation-3 of them underwent a partial crico-tracheal resection (PCTR); 3 had laryngo-tracheal reconstruction with rib grafts (LTR) and 1 had an endoscopic posterior cricoid split (EPCS). 6 patients had a prominent V shape posterior cricoid plate (1 LTR, 2 EPCS, 3 no surgery (NS)). 9 patients had a hypoplastic malformation (5 PCTR, 2 LTR, 2 slide trancheoplasty). 4 patients had a V shape posterior cricoid with anterior cricoid arch thickening (1 PCTR, 1 EPCTR, 1 LTR, 1 NS) and 1 had V shape posterior cricoid, anterior arch thickening and a minor laryngeal web, underwent a LTR.

C:

The type of cricoid cartilage anomaly has a strong influence on the preferred surgical procedure to correct the associated airway compromise. Patient comorbidities and experience of the treating team influence the decision-making

O19

Congenital laryngo-tracheo-oesophageal clefts: updates from a quaternary care paediatric airway unit

Alessandro Ishii, Kishore Sandu
CHUV - Hôpital universitaire

Objectives:

In this study focusing on laryngo-tracheo-oesophageal cleft (LTEC) we underline the patient population, surgical techniques, outcomes, and complications. We discuss surgical approaches to address short and long clefts and previous complete or near-complete breakdown of a long cleft.

Material and methods:

This is the third report on LTEC from our unit since 2006. Twenty-five patients underwent surgical repair for LTEC from March 2012 to November 2021 at our hospital. Every patient underwent a diagnostic endoscopy under general anaesthesia and spontaneous ventilation to assess the LTEC as well as other aerodigestive comorbidities/malformations. Following an endoscopic repair, the patients were transferred at paediatric intensive care unit or paediatric intermediate care unit. All the patients underwent a control endoscopy under general anaesthesia and spontaneous respiration at one-week post-surgery.

Results:

This population featured multiple other malformations, specifically gastrointestinal, airways or cardiac. In the preoperative setting, most of the patients (n=18, 72%) needed a feeding assistance. After the LTEC correction, feeding assistance could be weaned in 13 out of 18 patients, this was a 72% improvement in comparison to pre-operative condition. Similarly, some patients (n= 10, 40%) needed ventilation assistance before the surgery. In the post-operative setting, ventilatory assistance could be weaned in 7 out of 10 patients meaning a 70% improvement in comparison to previous condition.

Conclusion:

LTEC are rare malformations, and their management needs precise diagnosis, appropriate surgical planning, execution, and dedicated post-operative care.

O20

Night-to-night variability in obstructive sleep apnea using peripheral arterial tonometry: a case for multiple night testing

Samuel Tschopp, Wilhelm Wimmer, Marco Caversaccio, Urs Borner, Kurt Tschopp
Department of Otorhinolaryngology, Head and Neck Surgery, Kantonsspital Baselland, Liestal, Switzerland; Hearing Research Laboratory, ARTORG Center for Biomedical Engineering Research, University of Bern, Switzerland; Department of Otorhinolaryngology, Head and Neck Surgery, Inselspital, University Hospital and University of Bern, Bern, Switzerland

Aim:

Night-to-night variability of obstructive sleep apnea (OSA) severity is considerable and may depend on the diagnostic modality used. We investigated the night-to-night variability using peripheral arterial tonometry (PAT) as a novel home sleep apnea test.

Methods:

Home sleep apnea testing was performed in 51 patients during three consecutive nights using PAT. Patients referred to our sleep clinic were screened and prospectively recruited for this study. All recordings were automatically and manually scored according to the PAT scoring guidelines.

Results:

No systematic differences in any sleep parameter were found between the nights. PAT-derived apnea-hypopnea index (pAHI) varied in 35% of patients more than 10/h between the nights. The OSA severity of 24% of patients was misclassified when using one night compared to the average of all nights. On average, pAHI varied by 57% from night-to-night. The variability of pAHI could partially be explained by the variability of time spent in the supine position with more time supine leading to a higher pAHI. On measuring a subsequent night, 12-14% of patients spontaneously fulfilled the commonly accepted criteria for treatment success without any intervention.

Conclusions:

With repeated recordings of PAT, we found no systematic difference between nights. However, there is considerable night-to-night variability similar to values found for polysomnography, which can partially be explained by the variability of time spent in the supine position. OSA severity was frequently misclassified due to the night-to-night variability. Our findings make a strong case for multiple testing in the diagnostic work-up of OSA patients.

O21

Relationship between patient-rated chronic rhinosinusitis disease control and quality of life burden

Marlene M. Speth, Katie M. Phillips, Ahmad R Sedaghat
Basel University Hospital; University of Cincinnati College of Medicine

Background:

Disease control is a global assessment of disease status. This study seeks to determine how patients' ratings of their chronic rhinosinusitis (CRS) translate to disease-specific and general health-related quality of life (QOL).

Methods:

Total of 309 adult CRS patients were recruited. All were asked to rate their overall CRS disease control as "controlled", "partly controlled" and "uncontrolled", consistent with EPOS disease recommendations. All participants also completed the 22-item Sinonasal Outcome Test (SNOT-22) as reflection of disease-specific QOL and 5-dimension EuroQOL questionnaire from which the visual analog scale (EQ-5D VAS) was used as a reflection of general health-related QOL.

Results:

Mean SNOT-22 score was 15.8 (SD:16.7) for patients reporting "controlled", 39.6 (SD:19.7) for patients reporting "partly controlled"; 55.6 (SD:22.4) for patients reporting "uncontrolled" as their CRS disease control. SNOT-22 score of >21 identified patients reporting "partly controlled" or "uncontrolled" CRS with sensitivity of 88.2% and specificity of 76.4%. Mean EQ-5D VAS score was 81.7 (SD:16.5) for patients reporting "controlled", 71.8 (SD:18.5) for patients reporting "partly controlled" and 62.8 (SD:21.8) for patients reporting "uncontrolled" as their CRS disease control. EQ-5D-VAS score of <79 identified patients reporting "partly controlled" or "uncontrolled" CRS with sensitivity of 60.6% and specificity of 74.5%.

Conclusions:

Patients notice loss of control over their CRS at mild to moderate levels of QOL burden. QOL thresholds, SNOT-22 >21 and EQ-5D VAS <79 , correspond to previously described minimal criteria for candidacy for sinus surgery and general low QOL.

O22

Objective measurements in treatment-refractory chronic nasal obstruction

Julien, Wen Hsieh, Marianne Hugentobler, Basile Nicolas Landis
Geneva University Hospitals

Background:

Treatment-refractory chronic nasal obstruction is challenging in the absence of obvious anatomical abnormalities. Little is known about performance of objective tests in this context. The aim of this study is to compare rhinomanometry, trigeminal lateralization test (TLT), and peak nasal inspiratory flow (PNIF) to determine their ability to corroborate these patient's perception of lateralized nasal obstruction.

Methods:

We performed a retrospective study based on n=311 patients complaining of nasal obstruction, for which no straightforward explanation was found after nasal endoscopic examination and trials of topical corticosteroid. Out of these 311 patients, n=202 had one or more nasal surgery. They were divided into 3 groups: bilateral obstruction (n=112); predominantly on the right (n=107); predominantly on the left (n=92). We performed rhinomanometry, TLT, PNIF and analyzed their right-left difference scores at the Rhinology-Olfactology Unit in Geneva University Hospitals between 2014 - 2022.

Results:

For patients complaining of bilateral nasal obstruction, the differences in score between right and left nostrils was the closest to 0 for rhinomanometry and PNIF. For patients complaining predominantly of right or left nasal obstruction, TLT, rhinomanometry and PNIF scores showed higher resistance, lower inspiratory flow or lateralization score for the worse side. A statistically significant difference in scores between groups was observed for rhinomanometry and PNIF ($p < 0.05$; One-way ANOVA with Tukey's multicomparison test) but not for TLT.

Conclusion:

Rhinomanometry and PNIF could be useful to evaluate treatment-refractory chronic nasal obstruction

O23

BOS-free survival and lung-related infectious complications after lung transplantation with and without sinus surgery

Manuel Meier, David Holzmann, Michael Soyka, Macé Schuurmans
KSSG Kantonsspital St. Gallen; Universitätsspital Zürich

Aim:

The aim of this study is to critically review the Zurich-Protocol which intends sinus surgery as soon as possible postoperatively for all cystic fibrosis patients undergoing lung transplantation.

Methods/Material:

Retrospective analysis of clinical data from 71 patients with cystic fibrosis who underwent bilateral lung transplantation at the USZ between 01.01.2009 and 01.01.2020. We analyzed the overall survival, the rejection free time of the donor organ (BOS free survival, “bronchiolitis obliterans syndrome”) as well as infectious complications (pneumonia, tracheobronchitis and viral infections of the lower- and upper respiratory tract) compared in patients undergoing sinus surgery versus no sinus surgery after lung transplantation.

Results:

There is no benefit in the long term overall survival in lung transplant recipients who did have sinus surgery pre- or post-lung transplantation (69%) compared to those without sinus surgery (64%) ($p= 0.18$). There seems to be no significant difference in BOS events comparing the groups (sinus surgery group 65%, no sinus surgery group 64%, $p= 0.91$). Comparing the infectious complications there is a significant difference in mild infectious ($p=0.04$) and a trend concerning severe infections ($p=0.06$) in favor of the sinus surgery group.

Conclusion:

There is mild evidence of a decreased infection rate without affecting BOS free survival in this highly selected group of lung transplant patients undergoing sinus surgery.

O24

Utilisation de l'endoscopie flexible avec canal de travail dans la chirurgie sinusale endoscopique

Yann Litzistorf
CHUV

Objectifs :

Evaluer les indications, les bénéfices, les limitations et la sécurité de l'utilisation de l'endoscopie souple avec canal de travail dans la chirurgie sinusale endoscopique (CSE).

Matériel et méthode :

Une série de cas effectués au CHUV depuis janvier 2021 pour lesquels nous avons utilisé un bronchoscope souple 4.2mm pour traiter des pathologies localisées au niveau des récessus des sinus frontaux, sphénoïdaux et maxillaires non visualisables et non accessibles avec des optiques et des instruments rigides angulés.

Résultats:

14 patients dont 6 présentaient une sinusite fongique (2 frontales, 2 sphénoïdales, 2 maxillaires). On notait une persistance de fungus ball chez les 6 patients dont le traitement a pu être complété grâce au canal de travail bronchoscope souple. 4 patients présentaient une limitation symptomatique du drainage du sinus frontal (2 cellules fronto-éthmoïdales, 2 mucocèles). Les 4 patients ont pu être traité grâce à la pince à biopsie du bronchoscope à travers un Draf IIa uniquement. 4 patients présentaient un papillome inversé. Le pied d'implantation a pu être identifié chez tous les patients et a permis de choisir la procédure la plus adaptée à son exérèse complète. Cette technique, nous a permis d'éviter ou de confirmer la nécessité d'effectuer des voies d'abord endoscopiques étendues (Draf IIb/III, voie pré-lacrurale) afin de traiter les pathologies.

Conclusion:

L'utilisation du bronchoscope souple dans la CSE permet, en toute sécurité, de visualiser et parfois de traiter par abord minimalement invasif des pathologies sinusales habituellement non accessibles sans un abord étendu.

O25

Does repeated surgery have an influence on intranasal trigeminal function ?

Basile Landis, Marianne Hugentobler, Julien Hsieh

Hôpitaux Universitaire de Genève HUG; Hôpitaux Universitaires de Genève (HUG)

Aim of the study

To investigate whether repeated intranasal surgery has an influence on intranasal trigeminal perception.

Introduction

Treatment-refractory, chronic nasal obstruction is frequent. It is characterized by failure of standard medical treatment. Endoscopic examination shows either a clear anatomic deformity which is mostly solved by surgery or is ambiguous with no major anatomic explanation for the complaint. The latter group of patients are a clinical challenge since surgery not necessarily leads to successful outcome. It has been hypothesized that such paradoxical nasal obstruction may be due to low intranasal trigeminal function and thus airflow perception.

Methods

We included 314 patients complaining of chronic nasal obstruction. The common feature they shared was that the endoscopic examination did not clearly showed an anatomical deformity that would explain the complaint. One hundred eleven patient did never had any nasal surgery whereas the remaining ones had one, two or more previous nasal surgeries. All patients underwent intranasal trigeminal function testing, rhinomanometry and PINF testing.

Results

Compared to normal values established for the trigeminal intranasal function according to the literature, all included patients showed lower mean intranasal trigeminal function. There was no difference in intranasal trigeminal function between patients without, after one, or after 2 and more intranasal surgical procedures.

Conclusion

The results suggest that the number of intranasal surgeries does not have a major effect on intranasal trigeminal function.

O26

Evaluation of Active Middle Ear Implants using an Acoustic-mechanical Middle Ear Model

Nathan Hürzeler, Lucas Wey, Lukas Graf, Jonas Lochner, Hamidreza Mojallal, Andreas Arnold, Christof Stieger

ENT Department, University Hospital Basel, Switzerland; Department of Biomedical Engineering, University of Basel, Switzerland; MED-EL, Business Unit Vibrant, Innsbruck, Austria; ENT Department, Inselspital Bern, Switzerland

We compared the vibratory output of the Floating-Mass Transducer (FMT) of the Vibrant Soundbridge (VSB) with two different couplers (short- (SP) and long process (LP)) in an acoustic-mechanical middle ear model (AMEM).

The AMEM consists of real size ossicles which have a physiologic weight. The acoustical output transfer function can be tuned by a single nitrile membrane as the oval window membrane.

We implanted the FMT on the AMEM either using LP or SP couplers of the VSB system. For each coupler, we measured the motion of the stapes using laser Doppler vibrometry. We applied 50 sinus tones ranging from 100 to 8'000 Hz. Additionally, we simulated two potential implantation failures of the FMT (contact to a solid structure and impaired coupling to the ossicles) and measured the impact on the output.

The tested AMEM showed a good reproducibility with an average deviation of 2.8 dB between three measurement time points. The output of the SP coupler showed less variation than the LP coupler. A contact of a solid structure to the FMT attached to the LP coupler resulted in a damping of approximately 20 dB for frequencies between 300-900 Hz while virtually no damping was observed for the SP. Additionally, the output of the LP coupler deteriorated more with an impaired coupling of the FMT to the ossicles than with the SP coupler. Especially for cases of surgical misplacement, the SP coupler had less output deterioration than the LP coupler.

The SP coupler shows favorable transfer characteristics compared to the LP coupler in the AMEM, which is consistent with findings in human temporal bones. The AMEM allows parametric studies of VSB middle ear couplers.

O27

Reappraisal of Grading in Intestinal-Type Sinonasal Adenocarcinoma: Tumor Budding as an Independent Prognostic Parameter

Christian Meerwein, Muriel Brada, Michael Soyka, David Holzmann, Niels Rupp
Universität Zürich, Unispital Zürich

Since sinonasal intestinal-type adenocarcinomas (ITAC) show resemblance to colorectal adenocarcinomas, we aimed to investigate novel prognostic factors of outcome, with particular focus on the role of tumor budding (TB). Retrospective clinico-pathological single-institution study on consecutive ITAC patients between 1996 and 2020. Histopathological parameters including conventional subtypes and TB features (low, intermediate, high) were evaluated with the aid of pancytokeratin (AE1/AE3) immunohistochemical staining. Parameters were correlated to clinical data and outcome. A total of 31 ITAC patients were included. Overall, 19/31 patients (61.3%) presented with stage III/IV disease. Presence of lymph node or distant metastases was rare (1/31 patient, 3.2%). Treatment protocols consisted of tumor resection in 30/31 patients (96.8%) and primary radiochemotherapy in 1/31 patient (3.2%). Adjuvant radiation therapy was conducted in 20/30 surgically treated patients (66.7%). The 3- and 5-year overall survival (OS) was 83.9% and 78.3% and the 3- and 5-years disease-specific survival (DSS) 83.7% % and 78.5%, respectively. The presence of intermediate/high TB (defined as ≥ 5 buds) was associated with both, worse DSS (log rank $p = 0.03$) and OS (log rank $p = 0.006$). No patient with low TB revealed progressive disease or died of the disease. No association between TB and tumor stage or conventional tumor subtype was found. Tumor budding seems to be an independent prognostic factor of worse outcome in ITAC.

O28

Traktographie des Nervus trigeminus in der Schädelbasis

Letizia Meier, Gunesh Rajan
Luzerner Kantonsspital (LUKS)

Ziele

Die Traktographie zeigt Nervenstrukturen in vivo auf. Sie beruht auf der Acquisition von diffusionsgewichteten MR-Sequenzen in verschiedenen Orientierungen. Die Hirnnerventraktdarstellung in der Schädelbasis ist bisher limitiert, insbesondere bei pathologischen Veränderungen. In dieser Pilotstudie haben wir die DTI-Darstellung des N. Trigeminus untersucht.

Material und Methoden

Aus unserem Patientengut haben wir Traktographien von ausgewählten Patienten mit Vestibularisschwannomen oder infiltrierenden Schädelbasistumoren durchgeführt. Die Sequenzen erfolgten durch Siemens Vida3Tesla Geräte in 20 Orientierungen und eine Voxeldicke von 1.2 bis 1.6 mm. Die Traktographien wurden mit dem Programm Slicer 3D Version 4.10.2 mittels UKF-2-Tensor-Methode angefertigt.

Resultate

Es wurden 10 Traktographien bei 5 Schädelbasispathologien durchgeführt. In 3 Fällen handelte es sich um ein Vestibularisschwannom, 1 Patient mit perineural-wachsendem infiltrierendem Spinaliom, 1 Patient mit lokal infiltrierendem Rezidiv eines Nasopharynxkarzinoms. Traktographisch liess sich der Nerv in den intrakranielle Segmente darstellen. Teilweise konnte der N. mandibularis noch in die Fossa infratemporalis verfolgt werden.

Schlussfolgerungen

Die Traktographie des N. trigeminus in der Schädelbasis bleibt eine Herausforderung. Es besteht eine hohe Anfälligkeit für Artefakte, einerseits treffen verschiedene Medien (Gewebe, Knochen, Luft, Liquor) mit unterschiedlichen physikalischen und chemischen Eigenschaften aufeinander, andererseits haben wir viele neuronale Strukturen auf engem Raum. Trotzdem lässt sich in gewissen Regionen der Schädelbasis die Traktographie des N.Trigeminus gut durchführen.

P01

In-office eustachian tube balloon dilation under local anesthesia: surgical protocol and preliminary results

Sean Sheppard, Marco Caversaccio, Lukas Anschütz
Inselspital - Universitätsspital Bern

Aim:

To evaluate the role of local anesthesia for eustachian tube balloon dilation as an in-office procedure for the treatment of eustachian tube dysfunction.

Material and Methods:

Patients with eustachian tube dysfunction assessed with the ETDQ-7 score and refractory to medical management with nasal steroids were prospectively enrolled. Patients underwent clinical examination, tympanometry and audiometry. Eustachian tube balloon dilation was performed in local anaesthesia in the office. Procedural details along with subjective patient's feedback were collected. Follow-up was performed using ETDQ-7 score and mucosal grading scores.

Results:

We included 32 patients with 49 tubes dilated, out of which 24 patients had a 3 months follow-up. The procedure was well tolerated in local anaesthesia. The mean Discomfort visual analogue scale was of 5.9 (1,10; IQR 4). Mean ETDQ-7 score was of 21.66 (9-91; IQR 12) preoperative and of 15.8 (7-33; IQR 8) at 3-months follow-up. Thirty (93.75%) patients had subjective Valsalva problem, which was improved to 50% of the patients at 3 months follow-up. Most patients (53.57%) had eustachian tube mucosal inflammation Grade III preoperative and 60% of the patients had Grade I mucosal inflammation at 3 months. Complications were mild, such as minor self-limited mucosal bleeding (26%) and 1 self-limited emphysema. No major complications occurred.

Conclusions:

Eustachian tube balloon dilation can be performed in local anaesthesia and is well tolerated by most patients. Subjective and objective symptoms were improved over a follow-up of 3 months. No major complication occurred.

P02

The correlation between the tinnitus-specific and quality of life questionnaires to assess the impact on the quality of life in tinnitus patients

Lauren Van Hoof, Christian Thüring, Tobias Kleinjung, Emilie Cardon, Vincent Van Rompaey, Nicole Peter

Department of Otorhinolaryngology, Head & Neck Surgery, University Hospital Zurich, University of Zurich; Department of Translational Neuroscience, Faculty of Medicine and Health Science, University of Antwerp; University Department of Otorhinolaryngology and Head and Neck Surgery, Antwerp University Hospital, Edegem

Introduction:

This study examines the correlation between tinnitus-specific and quality of life (QOL) questionnaires to investigate the added value of the QOL questionnaires.

Material and Method:

Eighty-five patients with tinnitus as primary complaint completed the following questionnaires: Tinnitus Functional Index (TFI), Tinnitus Handicap Inventory (THI), short version of World Health Organization Quality-of-Life (WHOQOL-BREF), and the eight-item Short-form (SF-8). Four simple linear regression models were used to analyze the relationship between the THI and TFI and the WHOQOL-BREF and SF-8.

Results:

A negative and strong regression was found between the tinnitus questionnaires and the SF-8. More than half of the variability in the SF-8 scores could be explained by the TFI and THI (all $p < 0.001$). The weakest correlation (regression coefficient of 0.628, $p < 0.001$) was observed between the WHOQOL-BREF and the TFI, indicating that the WHOQOL-BREF mean score explained for 39.4% by the TFI. In contrast, a strong correlation was observed between the QOL subdomain of the TFI and a combination of the physical and psychological subdomain of the WHOQOL-BREF ($r = -0.627$, $p < 0.001$).

Conclusion:

The QOL subdomain of the TFI gives good information about the physical and psychological health. Thus, the TFI is suitable to assess both tinnitus severity and the HRQOL. A slight decrease in the determination coefficient of the WHOQOL-BREF is noticed compared to the SF-8 questionnaire, indicating the WHOQOL-BREF gives more specific information about the HRQOL than SF-8.

P03

Establishing a Mouse Model of Extra- and Intracochlear Electrocochleography Recordings during Cochlear Implantation

David Bächinger, Merlin Schär, Andreas Eckhard, Adrian Dalbert

Universitätsspital Zürich; Otopathology Laboratory, Department of Otolaryngology, Massachusetts Eye and Ear Infirmary, Harvard Medical School

Background:

Electrocochleography (ECoChG) is a promising tool to monitor structure/function-preservation during cochlear implant (CI) surgery. However, interpretation of ECoChG signals remains controversial. We conducted a proof-of-principle study to evaluate the C57BL/6 mice as a model to perform ECoChG and correlate ECoChG patterns during CI surgery to cochlear trauma.

Methods:

In adult C57BL/6 mice (n = 7), extra - and intracochlear ECoChG recordings were conducted using tones at 4–8 kHz, resembling low-frequency ECoChG recordings in humans. Hair cell contributions to the ECoChG signal was investigated by abolishing the neural response using the neurotoxin kainic acid (KA). In intracochlear recordings, the recording electrode was inserted in a stepwise manner until an amplitude drop in ECoChG recordings was detectable. Specimens were investigated using micro-computed tomography and histologic processing.

Results:

ECoChG recordings revealed similar response patterns as in humans. KA induced amplitude and phase changes. In animals with ECoChG amplitude drops after electrode insertion, micro-computed tomography and histology revealed displacement or rupture of the basilar membrane. Phase changes preceded amplitude drops in 57% (4/7) animals.

Conclusions:

ECoChG recordings were successfully established in mice. Amplitude drops in intracochlear recordings are associated with cochlear trauma in the electrode tip region. Preceding phase changes may indicate displacement of the basilar membrane. C57BL/6 mice are well suited to study ECoChG patterns and isolated ECoChG components, as well as to investigate morphologic correlates of ECoChG pattern changes during CI surgery.

P04

Audio-visual speech processing task to assess speech understanding on a cortical level using fNIRS

András Bálint, Wilhelm Wimmer, Marco Caversaccio, Stefan Weder

ARTORG Center for Biomedical Engineering, University of Bern; ENT Department, Inselspital Bern, Switzerland

Aims:

Our aim is to set-up an audio-visual speech processing task which enables us to measure brain activity in response to speech stimuli in prefrontal, temporal and occipital cortical regions using functional near infrared spectroscopy (fNIRS).

Materials and Methods:

We recruited 20 normal hearing participants to evaluate our protocol. The protocol consists of a resting state (5 minutes) and two stimulation periods (2x12 minutes). During the stimulation period, we present 13 seconds long video-recordings of the Oldenburg Sentence Test (OLSA). The stimulations were presented in 4 different modalities: speech-alone, speech-in-noise, visual-alone (i.e., lip reading) or audio-visual. Each stimulation type was repeated 10 times in a counter-balanced block design. At random time points, interactive questions were asked about the content.

Results:

Our proposed protocol was successfully tested in 20 normal hearing subjects. During the stimulation periods, we were able to measure activation patterns temporally and occipitally. After auditory stimulation (speech with and without noise), we observed an increase in the oxygenated hemoglobin (HbO) concentration temporally, with baseline activity occipitally. Contrary, after visual stimulation we measured activation in the visual cortex, but no increase in the auditory cortex. Following the audiovisual condition, cortical activation in both regions was observable.

Conclusion:

We demonstrated the feasibility of an OLSA-based audio-visual speech processing task by measuring functional brain activity in normal hearing subjects. In a next step, we will also include hearing impaired patients and cochlear implant users.

P05

Three-dimensional temporal bone and middle ear computer model based on high-resolution cone beam computed tomography

Ayhan Irem, Alexander Huber, Christof Roeoesli, Lorenz Epprecht
UniversitaetsSpital Zuerich; USZ

Objectives:

The aim of this project is to create a three-dimensional (3D) temporal bone computer model with possible virtual reality interaction to facilitate teaching and understanding of temporal bone and middle ear anatomy.

Material and methods:

We used high-resolution (150 μ m) cone beam computed tomography (CBCT) of an ex-vivo right human temporal bone scanned at our institution. The images were further processed on the 3D slicer imaging platform (v. 4.11.20210226). All relevant structures were segmented slice-by-slice in the editor module of the software and reconstructed in 3D.

Results:

The high resolution 3D computer model accurately represented even very small middle ear structures, e.g. the stapes crura. First attempts showed the usefulness of the model for endoscopic simulations.

Conclusions:

High-resolution CBCT allows the 3D reconstruction of a temporal bone and middle ear computer model. It permits an immediate and easy assessment of the spatial relationships of the different anatomical landmarks. The tool can be easily accessed by medical students or physicians to better understand or simulate the complex anatomical environment. This will possibly also help institutions where cadaveric specimens are not readily available due to technical or ethical constraints.

P06

Intracochlear pressure for stimulation at the skull bone and intracranial fluid

Ivo Dobrev, Tahmine Farahmandi, Flurin Pfiffner, Christof Rösli
UniversitätsSpital & Universität Zürich

Background:

The frequency dependent contributions of the various bone conduction (BC) pathways are poorly understood, especially the fluid pathway. The aim of this work is to measure and investigate sound pressure propagation from the cerebrospinal fluid (CSF) to the cochlear fluid in order to estimate stimulation location dependent performance of BC stimulators.

Methods:

Stimulation was provided sequentially to the bone (BC) or directly to the intracranial contents (hydrodynamic conduction, or HC) in four cadaver heads. Each ear was tested individually, for a total of 8 samples. Intracranial pressure was generated and monitored via commercial hydrophones, while the intracochlear sound pressure levels (ISPL) were monitored via custom-made intracochlear acoustic receivers (ICAR). In parallel, measurements of the 3D motion of the cochlear promontory and stapes were made via 3D Laser Doppler Vibrometer (3D LDV).

Results:

Regardless of the significant differences in absolute stapes and promontory motion, the ratios between the otic capsule velocity, the stapes volume velocity (relative to the cochlea), and the intracochlear pressure were very similar under BC and HC stimulus. Under HC, the cochlear fluid appears to be activated by an osseous pathway, rather than a direct non-osseous pathway from the CSF. However, the osseous pathway itself is activated by the CSF pressure.

Conclusions:

The findings indicate that the skull bone plays a role in the interaction between the CSF and cochlea for BC and HC stimulation at high frequencies. At low frequencies, inertia is the dominant factor for activation of the cochlea.

P07

Preload Effects in Ossiculoplasty with PORP

Merlin Schär, Ivo Dobrev, Christof Rööfli, Jae Hoon Sim, Alexander Huber
Department of Otorhinolaryngology, Head & Neck Surgery, University Hospital Zurich,
University of Zurich, Switzerland

Goals:

The aim of this study was to investigate preload effects of different partial ossicular replacement prostheses (PORPs) on middle-ear sound transmission, with and without simultaneous application of stapedial muscle tension.

Methods:

Experiments were conducted in human cadaveric temporal bones using different PORP designs. PORP preloads were imposed on an isolated stapes along four different directions (along the long and short axis of the stapes footplate and towards the medial and lateral direction). Additionally, the combined effect of stapedial muscle-pulling forces with simultaneous PORP preloads towards the medial direction was assessed. For each condition, the middle-ear transfer function (METF) was measured with a laser-Doppler vibrometer.

Results:

PORP preloads attenuated the METF between 0.5 and 4 kHz, with the largest attenuation for preloads in medial direction. Compared to the PORP with a fixed shaft, the ball joint primarily reduced the attenuation for preloads in postero-anterior direction. The ability of the stapedial muscle to attenuate the METF was reduced under simultaneous application of PORP preloads in medial direction.

Conclusions:

The results indicate a direction-dependent attenuation of the METF under PORP preloads. The ball joint offers tolerance for angular positioning with the preloads in medial direction while the clip interface prevents PORP dislocations under the preload in lateral direction. For large preloads, the attenuation of the METF with stapedial muscle tension becomes lower, which may result in abnormal postoperative acoustic reflex tests.

P09

Vergleich der beiden validierten deutschsprachigen Versionen des “Tinnitus Funktional Index” für die Schweiz und für Deutschland

Nicole Peter, Tobias Kleinjung, Ricarda Lippuner, Benjamin Böcking, Brüggemann Petra, Birgit Mazurek

Klinik für Ohren-Nasen-Hals und Gesichtschirurgie, UniversitätsSpital Zürich, Universität Zürich; Charité, Tinnituszentrum

Ziele:

Der TFI gilt als möglicher neuer Standard-Fragebogen für die Evaluation eines Tinnitus-Schweregrades und einer Tinnitus-Therapie. Es existieren zwei deutschsprachige, validierte Versionen des Tinnitus Functional Index (TFI), eine für die Schweiz und eine für Deutschland. In Anbetracht der stattfindenden Standardisierung bei der Tinnitus-Evaluation, war es unser Ziel, die beiden TFI-Versionen miteinander zu vergleichen und im deutschsprachigem Raum nur eine TFI-Version zu empfehlen.

Material und Methoden:

Die beiden deutschsprachigen TFI-Versionen wurden in einer multizentrischen, randomisierten Online-Fragebogenstudie im Cross-Over-Design miteinander verglichen.

Ergebnisse:

Der Gesamtscore der beiden TFI-Versionen unterschied sich in der gesamten Population nicht. Bei weiterer Aufschlüsselung in Bezug auf die Population und Reihenfolge der abgegebenen TFI-Versionen zeigten sich allerdings teilweise signifikante Unterschiede mit jedoch nur moderaten Effektstärken. Dies deutet darauf hin, dass sich die beiden Versionen leicht unterscheiden aber trotzdem miteinander vergleichbar sind. Bei der Faktoranalyse konnte bei der TFI-Version für Deutschland in der gesamten Population, wie auch für die schweizerische Population 6 Faktoren extrahiert werden. Hingegen konnten bei der deutschen Population in der deutschen und schweizerischen TFI-Versionen und bei der schweizerischen Population in der schweizerischen TFI-Version nur 5 Faktoren extrahiert werden.

Diskussion:

Die beiden deutschsprachigen Versionen des TFI sind gut miteinander vergleichbar. Jedoch spricht die Faktoranalyse eher für die Verwendung der TFI-Version für Deutschland im gesamten deutschsprachigen Raum.

P10

Objectifying Intra-Cochlear Electrocochleography Recordings

Klaus Schuerch, Wilhelm Wimmer, Adrian Dalbert, Christian Rummel, Marco Caversaccio, Georgios Mantokoudis, Stefan Weder

Hearing Research Laboratory, ARTORG Center for Biomedical Engineering Research, University of Bern, Switzerland; Department of Otorhinolaryngology, Head&Neck Surgery, University Hospital Zurich, University of Zurich, Switzerland; Support Center for Advanced Neuroimaging (SCAN), University Institute for Diagnostic and Interventional Neuroradiology, Inselspital Bern, University of Bern, Switzerland; Department of Otorhinolaryngology, Head and Neck Surgery, Inselspital Bern, Bern University Hospital, University of Bern, Switzerland

Introduction

Electrocochleography (ECoChG) measures inner ear potentials in response to acoustic stimulation. These potentials reflect the residual function of the cochlea and can be measured during and after cochlear implantation. However, the signals are in the microvolt range and may have a poor signal-to-noise ratio (SNR). The analysis of the signals is currently performed visually and requires an expertise in this field. The goal of this project is twofold: i) to improve the SNR and, therefore, to increase the number of subjects where ECoChG measurements can be analyzed, and ii) to objectify the detection of ECoChG signals, to make the analysis independent of the examiner.

Methods

Prospective cohort study of 38 cochlear implant (CI) recipients with preserved residual hearing. ECoChG measurements were performed immediately after implantation or at follow-up visits. In total, we use more than 8000 ECoChG measurements to validate our methods. To increase the SNR we employed a method using Gaussian weighted averaging, bandpass filtering, and correlation analysis. To objectify the detection of ECoChG signals, we compared three different methods: correlation analysis, Hotelling's T2 test, and deep learning. These methods were benchmarked against our visual analysis.

Preliminary Results

We could increase the SNR of our measured responses by 4.9 dB. Our method for objectifying ECoChG signals showed that the signal could be detected with comparable accuracy compared to visual analysis.

Conclusions

The use of an objective data analysis allows interpretation independent of the investigator's experience and thus also a comparison between different studies and implant centers.

P11

Cochlear Implant Electrode Impedance as Potential Biomarker for Residual Hearing

Wilhelm Wimmer, Luca Valerio Sclabas, Marco Caversaccio, Stefan Weder

Hearing Research Laboratory, ARTORG Center for Biomedical Engineering Research, University of Bern, 3008 Bern, Switzerland, Department of ENT - Head and Neck Surgery, Inselspital, Bern University Hospital, University of Bern, 3010 Bern, Switzerland; Department of ENT - Head and Neck Surgery, Inselspital, Bern University Hospital, University of Bern, 3010 Bern, Switzerland

Aim

Among cochlear implant candidates, an increasing number of patients have residual acoustic hearing. To monitor the residual function of the inner ear after the insertion of the electrode array, a reliable objective biomarker would be desirable. The aim of our study was to investigate the postoperative course of i) residual hearing, ii) clinical impedances, and iii) to explore the potential of impedance telemetry for residual hearing monitoring by assessing the association between both factors.

Materials and Methods

We performed a retrospective analysis on 23 cochlear implant recipients with residual hearing. The median postoperative follow-up was 20 month. We used a linear mixed-effects model to estimate the relation between electrode impedance and residual hearing. The follow-up time, side of implantation, gender, and age were included as control variables.

Results

Reduction of residual hearing occurred either during surgery or in the first three months after implantation. More apically inserted electrode contacts showed higher impedances, regardless of residual hearing. The highest impedance values were measured 1 month postoperatively and then decreased over time. Basal electrodes were more likely to retain higher impedance over time. Independent of time, we found that an increase in clinical impedance by 1 kOhm was associated with residual hearing worsening by 5.3 dB HL ($p < .001$).

Conclusions

The pure tone audiogram remains the current gold standard for monitoring postoperative residual hearing. However, the association of clinical impedances with residual hearing could potentially be exploited for objective monitoring using impedance telemetry.

P12

Monitoring residual hearing during cochlear implantation using electrocochleography

Leanne Sijgers, Adrian Dalbert, Flurin Pfiffner, Norbert Dillier, Christof Rösli, Alexander Huber
Department of Otorhinolaryngology-Head and Neck Surgery, University Hospital Zurich,
University of Zurich, Switzerland

Objective:

To compare simultaneously recorded intra- and extracochlear electrocochleographic (ECoChG) measurements obtained during cochlear implant (CI) insertions.

Methods:

Simultaneous intra- and extracochlear ECoChG measurements were conducted during CI insertions in human CI recipients (n=10). Intracochlear recordings were made from the CI's most apical electrode; extracochlear recordings were made using a needle electrode placed on the promontory. The CI's electrode array was inserted in a stepwise manner, and the insertion depths during ECoChG recordings were marked. Responses to 500 Hz tone bursts at 110 to 120 dB SPL were measured.

Results:

Abrupt, near 180-degree (5/10) or slowly progressing phase changes (5/10) in intracochlear recordings were observed in the cochlear microphonic responses of all subjects, without corresponding phase changes in extracochlear recordings. Amplitude decreases with associated phase shift and harmonic distortion in the intracochlear signal during the first half of insertion were not accompanied by a decrease in the extracochlear response amplitude; intracochlear amplitude decreases near full insertion did correspond to extracochlear amplitude decreases.

Conclusion:

Phase shifts and amplitude decreases in intracochlear ECoChG recordings can be caused by movement of the recording electrode with respect to the different signal generators. Comparison of intracochlear ECoChG recordings with simultaneous extracochlear recordings could enhance the interpretation of ECoChG changes and potentially allow for differentiation between traumatic and atraumatic changes in intracochlear recordings.

P13

Retrograde Cochlear Implantation in a Patient with Fibrosis of the Scala Tympani

Hannes Brandt, Patrick Dörig, Christof Stieger, Daniel Bodmer
University Hospital of Basel

We present the case of a 43 y/o patient, who underwent cochlear implantation at our institution. He had turned deaf after a prolonged episode of mastoiditis 2 years back, which was likely associated with granulomatosis with polyangiitis from which he suffered. Chronic inflammation of the middle ear likely caused fibrosis to the neighboring structures including the entire basal cochlea.

Due to the comorbidity mentioned, a subtotal petrosectomy was executed. Efforts to perform a cochleostomy at the level of the round window then failed, as neither the scala tympani nor the scala vestibuli had an identifiable lumen. Eventually, penetration in to the scala vestibuli was successful at the apical cochlea. The electrode array was readily inserted in advanced-off-the-stylet technique in a retrograde fashion. The common cavity after subtotal petrosectomy was occluded with an abdominal fat pad.

Intraoperative impedance measurements demonstrated fully functional electrodes (Implant Status A). Identification of electrically evoked stapedius reflex thresholds (eSRT) was not feasible due the situation mentioned above, however neural response telemetry showed auditory potentials.

Postoperative CT scan confirmed the retrograde insertion. It is known that retrograde insertion leads to inversed tonotopy. This was also subjectively confirmed during the initial postoperative fitting sessions. Reversed allocation of the electrodes frequency stimulation bands resulted in spontaneous improved sound perception. This case represents the versatility of the cochlear implant and its ability to provide adequate hearing recovery - even in challenging situations.

P14

Retrospektive Kohortenanalyse der Erfolgsrate nach Myringoplastik

Stefan König, Sandro Stöckli

Kantonsspital St. Gallen; HNO-Klinik, Kantonsspital St. Gallen

Ziel

Die Myringoplastik wird bei Otitis media chronica simplex zum Verschluss einer Trommelfellperforation durchgeführt. Ziel der Studie war es die Erfolgsrate an einer retrospektiven Kohorte des Kantonsspitals St. Gallen zu evaluieren.

Material und Methoden

Retrospektive Analyse von Patientenakten mit Einschluss aller Patienten, welche von 2012 bis 2021 am Kantonsspital St. Gallen aufgrund einer Otitis media chronica simplex mittels Myringoplastik versorgt wurden. Endpunkte waren die Rate des erfolgreichen Perforationsverschlusses und die Verbesserung des mittleren Air-Bone-Gaps. Subgruppenanalyse betreffend Ätiologie, Material des Trommelfellersatzes, Operationszugang, und Erfahrung des Operateurs.

Resultate

Es wurden insgesamt 204 Operationen an 199 Patienten evaluiert. Der mittlere Follow-up betrug 11 Monate. Insgesamt wurde ein Perforationsverschluss in 75% der Ohren erreicht. Die Erfolgsrate betrug bei erfahrenen Operateuren im Mittel 85%, bei unerfahrenen 67%. Der mittlere Air-Bone-Gap reduzierte sich um 9 dB. Der Perforationsverschluss wurde bei traumatischer Aetiologie vs. entzündlicher in 92% vs. 73%, bei Verwendung von Faszie vs Knorpel in 65% vs 85% und bei endauralem vs retroaurikulärem Zugang in 89% vs 70% erreicht. Die Reperforationen traten in 60% innert 3 Monaten, in 12% innert 6 Monaten, und in 8% innert 12 Monaten, und in 20% nach einem Jahr auf.

Schlussfolgerungen

Die Erfolgsrate der Myringoplastik liegt im Bereiche der Literatur ist bei erfahrenen Operateuren aber deutlich höher als bei Unerfahrenen.

P15

Wie telefonieren Cochleaimplantat-Trägerinnen und -Träger?

Armina Kreuzer, Susana Castellanos, Claudia Candreia, Christoph Schlegel-Wagner
Luzerner Kantonsspital, Klinik für Hals-Nasen-Ohren- und Gesichtschirurgie

Ziele:

Telefongespräche sind auch für CI-Trägerinnen und -Träger eine angestrebte und wichtige Kommunikationsform und korrelieren mit der Lebensqualität. Es interessiert deshalb, ob, wie und wie häufig CI-Trägerinnen und -Träger im praktischen Alltag mit dem CI-Ohr telefonieren können. Dieses Wissen ist wichtig für die prätherapeutische Beratung und die Rehabilitationsmassnahmen.

Material und Methode:

In einer retrospektiven Kohortenstudie wurden alle an der Klinik für Hals-, Nasen-, Ohren- und Gesichtschirurgie am Luzerner Kantonsspital implantierten erwachsenen CI-Trägerinnen und -Träger mit einer Einsilberverschämlichkeit von mindestens 50% mittels Fragebogen bezüglich Telefongewohnheiten evaluiert. Grundlage für unsere Daten sind die eigene Ohrdatenbank (ENTstatistics) und die CICH Datenbank.

Es konnten 558 CI-Trägerinnen und -Träger identifiziert werden. Die Resultate der Befragung werden an der Frühjahrsversammlung in Lausanne als Poster präsentiert.

Durch das Einbeziehen der Telefonie in die Rehabilitation wird einerseits die Lebensqualität gesteigert, andererseits hilft das Wissen über die praktischen Anwendungsmöglichkeiten bei der prätherapeutischen Beratung.

P16

Otogene Manifestation einer Granulomatose mit Polyangiitis – eine Fallvorstellung

Lukas Meier, Raffaella Fürer, Nader Ahmad, Frank Metternich
Kantonsspital Aarau

Ziele:

Fallvorstellung einer seltenen Entität im HNO-Bereich mit Diskussion der einzelnen Therapieoptionen unter Einbezug der aktuellen Literatur.

Material und Methoden:

Eine 67-jährige Patientin wird wegen seit 2 Tagen bestehender Fazialisparese und progredienter Schalleitungsschwerhörigkeit bei chronischer Otitis media links zugewiesen. Im Verlauf entwickelte die Patientin eine beidseitige Innenohrschwerhörigkeit, welche sich nach einer intravenösen mit anschließender oraler Kortikosteroid Therapie nicht besserte. Laborchemisch konnte ein Anstieg der PR3-ANCA festgestellt werden, ein PET-CT zeigte starke Anreicherungen im Bereich des Sinus maxillaris, laryngeal sowie pulmonal. Die histologische Aufarbeitung der Biopsie des Sinus maxillaris ergab eine mit einer Granulomatose mit Polyangiitis (GPA) vereinbare Gewebsveränderung.

Resultate:

Eine immunsupprimierende Therapie mit Rituximab und Spiricort brachte eine rasche Besserung des Allgemeinzustands. Ein Monat nach Beginn der Therapie zeigte sich eine Regredienz sowohl der klinischen als auch der laborchemischen Erkrankungsaktivität. Eine audiometrische Kontrolle ergab eine deutliche Besserung des Hörvermögens.

Schlussfolgerungen:

Nasale Manifestation einer GPA im HNO-Bereich sind häufig, otogene Manifestationen sind deutlich seltener, treten jedoch bei bis zu 25% der Patienten auf. Die laborchemische und histologische Sicherung führt zur definitiven Diagnose.

Das PET-CT zeigt keine GPA spezifische Befunde, kann jedoch für die Lokalisation der Biopsien wegweisend sein.

Bei therapierefraktären (beidseitige) Otitiden mit Allgemeinsymptome sollte an immunologischen Ursachen gedacht werden.

P17

Postoperative recommendations after ear surgery: a national survey

Eva Novoa, Christoph Schlegel-Wagner, Thomas Linder

Luzerner Kantonsspital, Klinik für Hals-Nasen-Ohren- und Gesichtschirurgie

1. Ziele

Display current views and reevaluation of concepts regarding postoperative recommendations after ear surgery.

2. Material und Methoden

A questionnaire based on 24 multiple-choice questions dealing with postoperative recommendations after common ear surgical procedures was sent to all known otologist practicing in both private and public institutions in Switzerland.

3. Resultate

Data obtained from the survey was statistically analyzed. We will present definitive results in the upcoming ENT Meeting

4. Schlussfolgerungen

Postoperative recommendations can be quite diverse, probably due to individual or institutional experience and the type of surgery performed. In the absence of guidelines, reevaluation of concepts regarding postoperative care may be needed

P18

Sprachverstehen im Störlärm mit dem SAMBA 2 bei Bonebridge Patienten mit einseitiger Taubheit

Marina Leimbacher, Wilhelm Wimmer, Michael Zbinden, Marco Caversaccio, Alexander Huber, Martin Kompis

Universitätsklinik für Hals-, Nasen- und Ohrenkrankheiten, Hals- und Gesichtschirurgie, Inselspital, Universitätsspital Bern, Universität Bern, Schweiz; Hearing Research Laboratory, ARTORG Center for Biomedical Engineering Research, University of Bern, 3008 Bern, Switzerland, Department of ENT - Head and Neck Surgery, Inselspital, Bern University Hospital, University of Bern, 3010 Bern, Switzerland; Klinik für Ohren-Nasen-Hals und Gesichtschirurgie, Universitätsspital Zürich, Universität Zürich

Ziele:

Die Bonebridge ist ein teilimplantierbares Knochenleitungshörsystem für Patienten mit Schalleitungs- oder kombiniertem Hörverlust und einseitiger Taubheit. In dieser klinischen Studie wurde untersucht, ob Bonebridge-Implantatträger mit einseitiger sensorineuraler Taubheit von einem neuen Audioprozessor (SAMBA 2), welcher im Gegensatz zum Vorgänger (SAMBA) eine verbesserte Störgeräuschunterdrückung bietet, profitieren.

Material und Methoden:

Insgesamt 6 Patienten mit Bonebridge testeten jeweils den SAMBA und den SAMBA 2 Audioprozessor für 2 Wochen. Ausgewertet wurden die Hörschwellen im Freifeld, das Sprachverstehen in Ruhe (Freiburger Einsilber) und im Störlärm (Oldenburger Satztest), sowie Fragebögen zur subjektiven Zufriedenheit (Bern Benefit in Single-sided-Deafness).

Resultate:

Der SAMBA 2 zeigte im Vergleich zum SAMBA bessere Ergebnisse beim Sprachverstehen in Ruhe (+18%), beim Sprachverstehen im Störlärm (+1.5 dB SNR) und bei der subjektiven Zufriedenheit.

Schlussfolgerungen:

In dieser kleinen Stichprobe von Bonebridge-Benutzern zeigte der SAMBA 2-Audioprozessor eine verbesserte Leistung im Vergleich zu seinem Vorgänger SAMBA.

P19

Pediatric Hearing Outcomes Following Tympanostomy Tube Placement

Kristin Drew, Celeste Yergin, Adam Snoop, Thomas Schrepfer
University of Florida College of Medicine

For patients with hearing loss secondary to middle ear effusion, tympanostomy tube (TT) placement allows for evacuation of fluid and improvement in hearing. Different types of TTs are available for surgeons. The authors noted that audiograms following tube placement often demonstrated a persistent air bone gap in low hearing frequencies, possibly more common with titanium tubes. We aim to compare hearing outcomes in patients before and after the placement of TTs, specifically for 1.14 mm Armstrong fluoroplastic tubes, 1.14mm Paparella silicone tubes, and 1.27mm Tytan titanium tubes. Out of a database of 235 patients, audiograms were examined before and after TT placement. 152 patients were excluded from the study (Reasons: incomplete chart, lack of preoperative audiograms or history of congenital hearing disorder). Out of 83 patients, 48 received Armstrong fluoroplastic tubes, 24 received Tytan Titanium tubes, and 11 received Paparella silicone tubes. Only 51 had measurements at 250 Hz. Gender, age, diagnosis, history of previous tubes and average preop pure tone average (PTA) was not different between the 3 groups with median age being 5.17 years. The PTA was reduced by 11.5 dB, 9.446 dB, and 12.3 dB for Armstrong, Tytan, and Paparella, respectively. The air bone gap (ABG) at 250 Hz was reduced by 5.438 dB, 4.509 dB, and 5.089 dB for Armstrong, Tytan, and Paparella, respectively, and by 11.47 dB, 5.238 dB, and 10.68 dB at 500Hz. While all tubes improved hearing outcomes, titanium tubes seemed to present with milder improvements in hearing with a greater persistent ABG at both 250 Hz and 500Hz in comparison to the fluoroplastic and silicone counterparts.

P20

Acute Unilateral Peripheral Vestibulopathy After COVID-19 Vaccination: Initial Series of Cases

Marc Schmid, Julia Duglaiczky, Dominik Straumann

ORL Klinik Zürich, USZ; Universitätsspital Zürich, Klinik für Neurologie

Objective:

To identify patients who developed acute peripheral unilateral vestibulopathy (AUVP) within 30 days after COVID-19 vaccination.

Methods:

For this study, we reviewed the medical records of patients with AUVP who had presented to our neurotology center between June and December 2021. Inclusion criteria: (1) diagnosis of AUVP and (2) onset of symptoms within 30 days after COVID-19 vaccination. Exclusion criteria: (1) a positive history of COVID-19 infection, (2) onset of acute vestibular symptoms before vaccination, or (3) better explanation of symptoms by another vestibular disorder. Following a clinical diagnosis of AUVP on initial presentation, vHIT, o-/cVEMPs and VOG were performed on average four weeks later.

Results:

26 patients were diagnosed with AUVP in the given time period. Of those, N=8 (30.7%; average age: 46 years +/-11.7 SD) developed acute vestibular symptoms between 4 and 20 days after COVID-19 vaccination. vHIT revealed ipsilateral semicircular canal hypofunction in seven patients, four patients presented with additional ipsilateral utricular and/or saccular hypofunctions.

Discussion and Conclusion:

The present study should raise clinicians' awareness for the occurrence of AUVP in close temporal relationship with COVID-19 vaccinations. The relatively high fraction of such cases among our AUVP patients (almost 1/3) may be due to a selection bias associated with tertiary referral centers. Nevertheless, patients with AUVP should be actively questioned about their COVID-19 vaccination status. Moreover, AUVP cases occurring shortly after a vaccination should be reported to the health authorities in order to determine possible causal relationships.

P21

Microtie : une mise à jour de la prise en charge actuelle

Michael Liu, Sophie Fries

CHUV Centre hospitalier universitaire vaudois

Contexte :

La microtie est une malformation concernant l'oreille externe et a une prévalence de 1-10/10000 naissances. Présente de manière unilatérale (en grande majorité) ou bilatérale, elle est responsable d'une surdit  de transmission. Elle est pr sente dans certains syndromes mais est le plus fr quemment isol e. Elle est associ e   une atr sie du conduit auditif externe dans 75 % des cas ainsi que des atteintes de l'oreille moyenne et interne. Si l'atteinte esth tique semble  tre au premier plan dans la pr occupation des parents lors du diagnostic, l'adaptation fonctionnelle audiolgique est primordiale pour une audition st r ophonique chez les enfants.

Objectifs :

Une mise   jour de la prise en charge de la microtie chez l'enfant. Nous rappellerons sa physiopathologie, et ses diff rents syndromes associ s ainsi que sa prise en charge initiale avec le bilan diagnostique requis. Nous nous concentrerons ensuite sur les possibilit s de prise en charge au niveau audiolgique provisoire puis d finitive, notamment avec les nouveaux appareils   ancrage osseux propos s. Les diff rentes techniques de reconstruction esth tique seront  galement pass es en revue.

Mat riel et m thode :

Revue de la litt rature permettant une synth se de la prise en charge des microties. Les articles seront recherch s datant de 2010   ce jour sur une base de donn es bibliographique MEDLINE.

R sultats :

Une guideline de la prise en charge actuelle de la microtie avec une attention particuli re qui sera mis sur le 'timing' des prises en charge audiolgique d finitive et esth tique.

Conclusion :

Guideline propos e sur la prise en charge de la microtie.

P22

Aesthetic evaluation of cosmetic results after auricular reconstructive surgery for congenital aural atresia with microtia

Njima Schläpfer, Livia Papp, Meike Harder, Daniel Simmen, Thomas Linder
Luzerner Kantonsspital; Universität Luzern; Hirslanden Clinic

Aim:

The reconstruction of congenital aural atresia with microtia (CAA) is surgically challenging regarding form and function. At our center the microtia repair involves the insertion of a rib cartilage framework in 2-3 surgical procedures, often combined with hearing reconstructive surgery. The aim of this study was to analyze our results and to develop a rating scale.

Materials&Methods:

Between 2001 and 2020 a total of 25 patients with CAA were consulted and complete photo documentation of all surgical steps and patient's consent was obtained in 17 patients. Based on existing rating scales weighting anatomical landmarks, we also included other items such as the alignment and protection of the ear. In addition, the cartilage framework was assessed to determine possible correlations towards the final outcome. The overall result was also rated using a visual analogue scale (VAS). Nine independent raters performed the scoring.

Results:

Statistical comparison between former published grading systems and the Lucerne Scale will be presented. Analyzing these results, further improvements towards an overall rating scale can be made and suggested. Complete and optimal documentation of each surgical step is mandatory but great variability between malformations do exist and therefore limit a standardized reconstruction of cartilage framework and soft tissue handling.

Conclusion:

Cosmetic and functional reconstruction of CAA remain challenging. Thorough analysis of the final outcome, retrospective review of each surgical step and a score result will help the surgical team to constantly improve. The close collaboration between the otologist and the plastic ENT surgeon is inevitable.

P23

Long-term results of a multimodal therapy concept for auricular keloids

Daniel Häussler, Stefanie Hüttemann, Jörn Brom, Nicole Rotter, Haneen Sadick
Universitätsklinikum Mannheim; Inselspital - Universitätsspital Bern; Brom Epithetik

Purpose:

Due to high recurrence rates, especially after monotherapy and the lack of standardized therapeutic concepts, the treatment of keloids remains challenging. The aim of this study was to investigate long-term results including the Quality of Life (QoL) of patients with auricular keloids (AK), who received a multimodal therapy (MT).

Methods:

A total of 56 patients with 68 AK were included. All patients had undergone a MT approach at the Department of Otorhinolaryngology, Head and Neck Surgery at the University Hospital Mannheim, Germany. The therapy consisted of an intramarginal keloid excision, intralesional injections of triamcinolone acetonide (TAC) and the consecutive application of a customized pressure splint. For assessment of the QoL, the Keloid Intervention Benefit Inventory 21 (KIBI-21) was used. Only patients with a follow-up (FU) period of at least six months were included into the further analysis.

Results:

Out of the 68 keloids, 50 showed a FU more than 6 months with a mean FU of 59 month (range 6-137 months). 9 Keloids recurred during the observation period, leading to a recurrence rate of 18%. In regard of the recurrence rate, there was no correlation found for the number of TAC injections and the adherence to compression therapy. QoL measured by the KIBI-21 differed significantly ($p=0.04$) between recurrence-free patients and patients with a recurrence of the keloid after treatment.

Conclusion:

The presented MT concept shows good results concerning the recurrence rate in patients with AK in the long-term. The treatment seems to have a positive impact on the QoL of the individual patient even in the long-term.

P24

Antibiotic bathing of cartilage grafts in septorhinoplasty prevents infection

Nathalie Gstrein, Abel-Jan Tasman, Ben Hunter

UniversitätsSpital & Universität Zürich; Kantonsspital St. Gallen

Aim:

The controversy regarding the prophylactic administration of systemic antibiotics in nasal surgery is ongoing. This study investigates whether routine Ciprofloxacin bathing of cartilage grafts prevents infection after septorhinoplasty and obviates the need for systemic perioperative antibiotics.

Methods:

A retrospective analysis of a cohort of consecutive septoplasty and septorhinoplasty patients, who were treated between January 2018 and January 2020. Variables investigated included the use of autologous cartilage grafts, the use of permanent sutures, topical ciprofloxacin or other antibiotic prophylaxis, patient comorbidities and smoking. The presence of a postoperative infection was judged based on the patient chart entry, typically one week after surgery

Results:

In 116 (24%) of 488 patients that were included grafts had been impregnated in Ciprofloxacin solution (2mg/l). The infection rate in patients without antibiotic prophylaxis and with ciprofloxacin treated grafts was 6.46% and 1.72% respectively. Two (7.7%) of 26 patients who had developed an infection had received impregnated grafts. Overall, 25% of patients admitted to being smokers, however 62% of patients with infections were smokers. A chi squared test showed the use of ciprofloxacin significantly reduced infection. Chi Squared (1, N=488) = 3.198, p value = 0.04777, significant at < .05.

Conclusion:

This study suggests that systemic antibiotics may be unnecessary and that bathing cartilage grafts in ciprofloxacin solution may be sufficiently effective in preventing infection. This interpretation contrasts with the widespread assumption that antibiotics should be given when grafts are inserted, especially in conjunction with non-resorbable sutures.

P25

Internal or External Nasal Valve stabilization or both? Indications and surgical technique

Daniel à Wengen

ORL

Nasal obstruction has many causes. At least 50% of nasal resistance is caused by the soft lateral nasal walls. This part is often underdiagnosed and undertreated. Understanding the functional anatomy and their individual instability in inspiration will help in patient-tailored surgery.

The internal nasal valve (INV) is the most narrow part of any nose. The most important part of it is within the lower edge of the Upper Lateral Cartilage. Starting in 2003 we have helped close to 1500 patients with the Titanium Breathe Implant which is implanted in a closed or open Rhinoplasty.

The external nasal valve (ENV) comprises the entire soft lateral nasal wall inferior to the internal nasal valve. This part becomes softer and less stable when we age. Pulling away the skin sideways from the nose (Cottle sign) mainly opens the ENV. For 6 years we have been actively widening the lateral nasal wall with the Titanium Breathe Implant in an off-label use as Batten Grafts. This implant works like a spring pulling lateral the skin sideways. Cartilage Batten Grafts are not able to provide this spring effect over a lifetime.

In the last years we learned to better differentiate between the INV and the ENV. These diagnostic tools will be demonstrated. In some patients we need to stabilize both valves at the same time. Functional results will be shown.

P26

Experimental comparison of Cone Beam Computed Tomography (CBCT) and Multislice Computed Tomography (MSCT) radiation exposure in the preoperative diagnosis of the paranasal sinuses and temporal bone.

Eva Novoa, Thiago Lima, Thomas Treumann, Christoph Schlegel-Wagner

Luzerner Kantonsspital, Klinik für Hals-Nasen-Ohren- und Gesichtschirurgie; Luzerner Kantonsspital, Institut für Radiologie

BACKGROUND

Because of its availability, improved resolution, relatively low costs and also its application in the office, CBCT has increasingly found its way into preoperative diagnostics in sinus and ear surgeries. The main argument of lower radiation exposure must be critically reviewed. Two years ago, we were already able to present our data and show that the dose exposure for CBCT and MSCT calculated on the basis of the device specifications showed no relevant differences with comparable image quality. In an experimental study with dosimeters we want to further investigate this question in more detail.

METHODS

The dose exposure for our standard preoperative protocol for the paranasal sinuses and the temporal bone was collected on our latest generation CBCT Newton 5GXL and MSCT Siemens Definition Force devices. An Alderson phantom, that mimics human densities, with dosimeters at sensitive locations was used.

RESULTS

The measurements could be carried out as planned with dosimeters on a phantom head. We will show the exact values in our poster.

CONCLUSION

With comparable image quality, this experimental study found lower dose exposure for a paranasal sinus imaging for MSCT and a lower dose exposure for a temporal bone imaging for CBCT in the latest generation devices used in our hospital.

P27

Disease control in chronic rhinosinusitis: a qualitative study of patient perspectives

Marlene M. Speth, Victoria Walker, Michal Trope, Antar Tichavakunda, Ahmad R. Sedaghat, Katie M. Phillips

Kantonsspital Aarau; University of Cincinnati College of Medicine; University of Cincinnati

Background:

Disease control is defined as maintenance of disease manifestations within acceptable limits. The concept of control in chronic rhinosinusitis (CRS) is an active area of study. However, the current literature has not engaged CRS patients in what they constitute as disease control. This study seeks to understand the patient perspective for CRS disease control.

Methods:

Qualitative phenomenological study using constant comparative methodology was applied. The research team conducted 10, one-on-one interviews with CRS patients ranging from 45 to 90 minutes in length. The content of the interview protocol was determined through iterative discussion amongst all authors. Two of the authors served as coders and a common codebook was created and utilized to identify recurrent themes. The themes were analyzed for meaning and conclusions were summarized.

Results:

Recurring themes included (1) the term “control” adequately represents this phenomenon; (2) components of CRS disease control include daily symptomatology, frequency and severity of exacerbations, and CRS impact on comorbid disease and quality of life; and (3) CRS disease control is a goal of treatment for patients—i.e. they are more likely to seek treatment escalation to achieve control.

Conclusions:

CRS patients consider their daily symptoms, their exacerbations, the impact of CRS on their quality of life as well as exacerbation of comorbid disease when self-assessing their CRS disease control. Uncontrolled disease motivates patients to seek further treatment. Physicians should explore these aspects of CRS with their patients when assessing CRS disease control and need for further treatment.

P28

Osteoradionekrose der Halswirbelsäule nach Radiotherapie von Kopf-Hals-Plattenepithelkarzinomen: Fallserie und systematische Literaturübersicht

Olivia Hänni, Ludwig Sachs, Giger Roland, Lluís Nisa Hernandez

Inselspital - Universitätsspital Bern

Ziele

Die Osteoradionekrose der Halswirbelsäule (HWS-ORN) ist eine seltene, aber schwerwiegende Komplikation nach Radiotherapie (RT) bei Kopf-Hals-Plattenepithelkarzinomen (KH-PECa). Ziel der Literaturübersicht ist Klinik, Diagnose und Therapie bei diesem Radiotherapie-Folgeschaden besser zu charakterisieren.

Methodik

Durchgeführt wurde eine systematische Literaturübersicht über publizierte Fälle von HWS-ORN bei behandelten KH-PECa (Mundhöhle, Oropharynx, Larynx, Hypopharynx und CUP-Syndrom zervikal) mit PubMed, Embase und Scopus. Zusätzlich haben wir die bestehende Literatur um eine Fallserie von 6 eigenen Patienten ergänzt.

Resultate

In der Literatur wurden 26 Patienten mit HWS-ORN beschrieben, meistens bei Männern mit Primärtumoren im Larynx (44%). In zwei Drittel der Fälle entstand die HWS-ORN nach primärer Radiotherapie, bei den Übrigen nach Zweitbestrahlung. Die häufigsten Auslöser waren eine Ösophagusdilatation (28 %) und die Anlage einer tracheo-ösophagealen Fistel zur Einlage einer Stimmprothese (9 %). Bei 41% wurde kein Auslöser eruiert. Nackenschmerzen mit Fieber, Parästhesien der Extremitäten und Kyphose/Torticollis waren die häufigsten Symptome. Die schwersten Komplikationen sind Osteomyelitis, Spondylodiszitis, Epiduralabszesse und Rückenmarkskompression. In 75 % der Fälle war eine Operation erforderlich. Die HWS-ORN verursachte eine Mortalitäts- und Langzeitkomplikationsrate von 16 %.

Schlussfolgerung

HWS-ORN ist eine seltene Komplikation nach Bestrahlung bei KH-PECa, birgt aber ein hohes Risiko für kurz- und langfristige Morbidität. Eine rechtzeitige Erkennung und chirurgische Therapie sind die wichtigsten Punkte für eine erfolgreiche Behandlung

P29

miRNA-221 and miRNA-222 target Puma to inhibit apoptosis in mucosal melanoma

Jozefina Darlagiannis, Marie Kristin Fritsche, Andreas Knopf

Department of Otorhinolaryngology/Head and Neck Surgery, Technische Universität München, Germany; Department of Otorhinolaryngology/Head and Neck Surgery, Universitätsklinikum Freiburg, Germany; Department of Otorhinolaryngology/Head and Neck Surgery, Technische Universität München, Germany

Introduction and objectives:

Mucosal melanoma (MM) is a rare subtype of malignant melanoma (CM). MM show compared to CM a reduced expression of Puma. Chloroquine (CQ) was shown to inhibit Puma degradation in CM. MM show a significantly high expression of miRNA-221 and -222 in MM, while miRNA-221 and -222 are considered to regulate Puma expression in various types of malignancy. Since this suggests that Puma is regulated at the translational level, the induction of apoptosis with simultaneous treatment of miRNA inhibitors and CQ to stabilize Puma must be investigated.

Material and methods:

9 cell lines (3 primary MM cells, 4 primary CM cells, melanocytes and glioblastoma cells) were included. Analysis of cell survival was performed by MTT assay. Inhibition of miRNA-221 and -222 took place via transfection with miRNA inhibitors. p53, Puma, LC3 I and LC3 were analysed using western blot.

Results:

After inhibition of miRNA-221 and -222, the expression of Puma protein could be restored in MM. Furthermore, proliferation analysis showed that inhibition of miRNA-221 and -222 could establish an inhibition of cell growth in MM. This effect was enhanced by additional treatment with CQ. CQ has an inhibiting effect on proliferation of CM and MM. Furthermore, our studies reveal that CQ succeeds to stabilize Puma protein in MM.

Conclusions:

Our studies confirm a stabilization of Puma protein and inhibition of cell proliferation by inhibition of miRNA-221 and -222 and treatment with CQ. However, we observe an inconsistent reaction to our treatments among the single primary cells suggesting further unknown cellular mechanisms and a profuse heterogeneity among the group of MM.

P30

Airway management in patients with lingual thyroid

Lluís Nisa

Inselspital, Universitätsspital Bern

Purpose

To review the management of patients with LTs involving upper airway obstruction and to suggest a diagnostic and therapeutic workflow.

Methods

A systematic review of published cases from January 1980 up to December 2020 of LT involving upper airway obstruction. We selected cases of confirmed LTs that presented with non state-dependent airway obstruction. An illustrative case is reported.

Results

Twenty-one articles fulfilling the inclusion criteria were found, reporting 24 cases (7 neonatal, 2 pediatric and 15 adults). The main presenting symptoms was dyspnea with increased work of breathing, followed by dysphagia and stridor most commonly in neonates. At least one imaging modality was performed in all patients. Thyroid function was altered in half the patients and normal in the other half. The LT was the only thyroid tissue in all cases except 2. Altogether, 5/24 patients required tracheostomies and two-thirds of the patients underwent surgical resection of the LT (mostly transoral). Also $\frac{2}{3}$ of the patients received thyroid replacement therapy. After a median follow-up of 17 months airway symptoms had fully resolved for all patients but one.

Conclusion

While rare, ectopic LTs should be considered in the differential diagnosis of stridor, dyspnoea and airway obstruction. In neonates, concomitant presence of hypothyroidism on neonatal screening and airway obstruction should prompt the search for a LT. Early identification and thyroid replacement therapy seem to significantly relieve symptoms of upper airway obstruction, but severe obstruction and concomitant airway lesions may require more definitive management approaches. A clinical workflow is presented.

P31

Functional reconstruction of the unilateral supraglottis and piriform sinus with a triple chimeric superficial circumflex iliac artery perforator flap after supraglottic laryngectomy: A case report

Jonas Werner, Gunesh Rajan, Mario Scaglioni
Luzerner Kantonsspital

Aims:

Reconstructive modalities after partial laryngectomy face the challenges of preserving voice and swallow function due to the complex and dynamic anatomy of the larynx. We present for the first time a case in which the entire left-sided supraglottis and piriform sinus were reconstructed with a triple chimeric superficial circumflex iliac artery perforator (SCIP) flap.

Methodology:

An extended unilateral supraglottic laryngectomy and neck dissection were performed in a 78-year-old male patient presenting with a supraglottic cT4a cN0 cM0 laryngeal cancer. The resulting defect was reconstructed using a triple chimeric SCIP flap from the right inguinal region. It consisted of a 4 cm x 3 cm fascial flap from the external oblique muscle used to reconstruct the aryepiglottic fold and two fasciocutaneous paddles of which the smaller (3 cm x 4 cm) was utilized to reconstruct the piriform sinus and former thyroid cartilage compartment and the larger (6 cm x 2 cm) served as monitor skin flap.

The patient was followed-up regularly with assessment of tumor recurrence, voice quality, and swallow function.

Results:

The postoperative recovery was uneventful. Laryngeal functions including voice and deglutition were well-preserved and there were no signs of chronic aspiration or tumor recurrence six months postoperatively.

Conclusion:

Due to its pliability and versatility, laryngeal reconstruction with a multicomponent chimeric SCIP flap may allow for preservation of both voice and larynx mobility, which is crucial for the rehabilitation of swallow function.

P32

Diagnostische und therapeutische Herausforderung von synchronen Lungennoduli bei Plattenepithelkarzinomen im HNO-Bereich: ein systematisches Literaturreview

Manuel Waser, Marc Müller, Jinjie Li, Olgun Elicin, Roland Giger

¹ Universitätsklinik für Hals-, Nasen- und Ohrenkrankheiten, Hals- und Gesichtschirurgie, Inselspital, Universitätsspital Bern, Universität Bern, Schweiz; ² Freie Universität Liechtenstein, Triesen; ³ Cooper Health Clinic Dubai, Universitätsklinik für Hals-, Nasen- und Ohrenkrankheiten, Teil der NMC Hospital Group; ⁴ Universitätsklinik für Radio-Onkologie, Inselspital, Universitätsspital Bern, Universität Bern, Schweiz

Ziele: Synchroner Lungennoduli bei Plattenepithelkarzinomen im HNO-Bereich sind häufig. Diese können gutartige Läsionen, primäre Lungenkarzinome oder Metastasen sein. Mit einem systematischen Literaturreview wollen wir die empfohlene Vorgehensweise bei synchronen Lungennoduli eruieren.

Methodik: Zwei Autoren führten eine systematische Suche in PubMed mit Kombinationen von krankheits- und häufigkeitsspezifischen Begriffen durch. Alle Artikel wurden gemäss dem Oxford Centre of Evidence-Based Medicine kategorisiert. Es wurden Studien ohne Einschränkungen hinsichtlich Geschlecht, Alter, ethnischer Zugehörigkeit oder Rauchverhalten einbezogen. Der Schwerpunkt lag auf der gleichzeitigen Erkennung von Plattenepithelkarzinomen im HNO-Bereich und synchronen Lungennoduli innerhalb des Zeitrahmens von Diagnose und Staging.

Resultate: Von 2591 Publikationen wurden 24 eingeschlossen. Synchroner Lungennoduli bzw. Lungenkarzinome wurden in 2-49 % bzw. in 0.4-7.4% gefunden. 53-100% der Patienten haben geraucht. Thorax-Röntgen, CT und PET/CT ergaben eine Sensitivität von 55%, 93%, 96%, Spezifität von 97%, 97%, 96%, positiven prädiktiven Wert von 67%, 78%, 80% und negativen prädiktiven Wert von 78%, 98% bzw. 96%. Der Nachweis von HPV oder klonalen Entwicklung hilft Metastasen und synchroner Lungenkarzinome zu unterscheiden. Bei frühzeitiger Erkennung von synchronen Lungenkarzinomen und kurativer Behandlung liegt das 5-Jahres-Gesamtüberleben bei 34-47%.

Ergebnisse: Unsere Review trägt dazu bei, einen Konsens über den optimalen diagnostischen Weg zur Erkennung von synchronen Lungenkarzinomen zu erzielen. Der Vorteil der Früherkennung muss allerdings weiter evidenzbasiert quantifiziert werden.

P33

Extracellular vesicles and their potential as diagnostic biomarker in HNSCC

Hannes Brandt, Lukas Schmid, Michael Schlumpf, Laura Benecke, Veronika Gajdos, Mali Coray, Laurent Muller

University Hospital of Basel; University of Basel

Squamous cell carcinoma of the head and neck (HNSCC) region is the sixth most common cancer worldwide, which still has a poor prognosis with a five-year survival rate of 50%. Nearly one in two patients recurs within two years, which is a driver of the poor prognosis. For this reason, there is an urgent need for improved early detection. Extracellular vesicles (EVs) have recently come into the spotlight as potential cancer biomarkers. They are found in virtually every body fluid, making them ideal candidates for liquid biopsy. They mediate intercellular communication in the tumor micro-environment by transporting various biomolecules (RNA, DNA, proteins, and lipids), therefore playing a prominent role in tumor proliferation, differentiation, metastasis, and resistance to chemotherapy or radiation. By means of isolation, protein quantification of the EV fraction and correlation of these data with clinical data of tumor patients and healthy patients, we want to approach the question of the role of EVs in tumor diagnostics. Indeed, in our cohort on a limited patient number we could demonstrate that protein levels could serve as clinical disease monitor in HNSCC.

P34

Carcinome parotidien intraductal : une néoplasie rare, case report et revue de littérature

Eugénie Delaine, Andrea Avagnina, Salim Bouayed

CHVR Hôpital de Sion

Un homme de 63 ans, atteint de multiples pathologies cardio-vasculaires, a été adressé par son médecin dans notre service de chirurgie ORL et cervico-faciale avec comme plainte principale une masse asymptomatique dans la région parotidienne droite depuis un mois. Une aspiration à l'aiguille fine sous échographie a donné un résultat douteux et une tumeur maligne n'a pas pu être exclue. Une tomодensitométrie du cou et du thorax a été réalisée et aucun ganglion lymphatique métastatique n'a été trouvé. Le patient a bénéficié d'une exérèse chirurgicale « en bloc » de la masse par parotidectomie superficielle qui a révélé un carcinome intraductal de la glande parotide.

Le carcinome intraductal est une tumeur rare et de bas grade des glandes salivaires. Il survient le plus souvent dans la glande parotide. Les localisations ectopiques sont très rares.

Nous rapportons ici un cas de carcinome parotidien intraductal et une revue de la littérature.

P35

Pathologies of the neck and tongue - about 4 cases of interest

Danaé Guedj, Yan Monnier, Nicolas Dulguerov
Hôpitaux Universitaires de Genève

Objectives

Presentation of four rare pathologies and detailed description of the diagnostic approach and therapeutic management.

Materials and methods

Retrospective description of four clinical cases treated in the ENT and cervicofacial surgery department of the University Hospitals of Geneva in 2021, which were a diagnostic challenge. To invite the reader to position himself as the ENT physician responsible for the patient, we realized a quiz on the "dragnsurvey" platform, accessible from a Smartphone by scanning a QR code.

Results

We chose the case of a cervical desmoid tumor, a Rosai-Dorfman disease with laryngeal involvement, a unicentric Castelman's disease in a child and a Horton's disease with a tongue ulcer as first manifestation.

Conclusions

In spite of the rarity of these diseases, it seems important to us that the ENT physician knows about them, as well as the diagnostic approach allowing to obtain a histological diagnosis of certainty.

P36

Salivary Gland Tumor Diagnostics – the SalvGlandDx Diagnostic Panel and Future Directions

Sandra Nicole Freiberger, Simon Müller, Martina A Broglie, Niels Rupp

Universitätsspital Zürich, Institut für Pathologie und Molekularpathologie; UniversitätsSpital Zürich, Klinik für Ohren-, Nasen-, Hals- und Gesichtschirurgie

Aims:

The classification of salivary gland neoplasms remains challenging. Histopathology and immunohistochemistry is often insufficient to distinguish tumors with overlapping morphological profiles. At the University Hospital Zurich, a comprehensive diagnostic RNA-based next generation sequencing panel (“SalvGlandDx”) has been developed in order to improve and expedite classification and treatment decisions.

Materials and Methods:

The SalvGlandDx panel was established based on known genomic alterations, including mutations, fusions and expression analysis. The panel was validated against standard techniques to detect genomic alterations in the clinical setting (FISH, Sanger sequencing, immunohistochemistry, commercial next generation sequencing panels). Thirty-four formalin-fixed paraffin-embedded tissue samples, including resections and fine needle aspirations were analyzed by SalvGlandDx and correlated with findings of the standard techniques.

Results:

All fusions and mutations were detected by the panel. Numerical normalized expression values of the NR4A3 gene correlated with immunohistochemical staining using NR4A3 antibody.

Conclusions:

The SalvGlandDx panel reliably detects known genomic alterations of salivary gland neoplasms. The panel offers an effective tool to screen undistinguishable salivary gland tumors for genomic alterations that allow classification and is applicable on tissue samples and cell blocks of fine needle aspirations. Further development of diagnostic tools (such as DNAmethylation analysis) may close the remaining gap of unclassifiable tumors and identify subgroups of known salivary gland cancers with clinical and prognostic relevance.

P37

Determinants of malignancy in pediatric neck lymphadenopathy – emphasis on the neutrophil-to-lymphocyte ratio

Eric Levi, Lluís Nisa

Royal Children's Hospital Melbourne; Inselspital, Universitätsspital Bern

Objective:

The goal of this study is to review the clinical, laboratory and radiological findings in a cohort of children who underwent open neck node biopsies for lymphadenopathy.

Study Design: Retrospective, single center study at a tertiary pediatric hospital.

Setting: Cohort study in a dedicated tertiary pediatric hospital.

Methods:

We reviewed the charts of 102 children up to 17 years of age, who underwent surgical node biopsies, between 2017 and 2020. Demographic, clinical, radiological and laboratory features were compared against histological diagnosis. We compared the demographic, clinical, radiological and laboratory features of benign vs. malignant lymphadenopathy.

Results:

Malignancy was diagnosed in 39.2% of the children (Hodgkin 28.4% and non-Hodgkin 8.8%) and 30.4% had non-specific lymphadenitis. Mycobacterium avium complex (MAC) lymphadenitis was diagnosed in 17.6% of the children. Malignant lymphadenopathies were most commonly unilateral and supraclavicular ($p=.04$ and $< .0001$, respectively). With respect to laboratory findings, the neutrophil-to-lymphocyte ratio (NLR) was significantly higher in malignancies (4.19 ± 4.14 vs. 1.46 ± 1.45 , $p < .0001$). Multivariable analysis showed supraclavicular location (OR 9.2, 95% CI 2.7-31.5, $p < .001$) and a NLR greater than 1.5 (OR 7.2, 95% CI 2.2-25.2, $p=.001$) to be significant independent risk factors for malignancy.

Conclusion:

A supraclavicular location and a Neutrophil-Lymphocyte Ratio greater than 1.5 are independent predictors of malignancy, with supportive factors including unilaterality, constitutional symptoms and mediastinal abnormality on chest X-ray.

P38

Unicentric Castleman disease: a paediatric case report

Philippe Martins Gomes, Pranvera Feka-Homsy, Nicolas Dulguerov, Hélène Cao Van
HUG Hôpitaux Universitaires Genève

Castleman's disease (CD) is a rare entity characterized by lymph node hypertrophy. Its incidence and etiology are unknown. It can occur at any age, and diagnosis may be difficult. We review the literature for this rare disease and emphasise the importance of histology to seal the diagnosis.

We report the case of an asymptomatic 10-year-old boy with a hypertrophic intraparotid and cervical lymphadenopathy. Fine needle aspiration showed a lymph node with a reactive hyperplasia cell pattern. MR showed adenopathy with a low apparent diffusion coefficient suggestive of neoplastic disease. Diagnostic cervical adenectomy was performed. Postoperative pathology confirms the CD. An extension work-up showed normal blood findings and no other lesions on PET-CT, confirming a unicentric CD (UCD). Due to the intraparotid location, tumour resection represented a high risk of facial nerve lesion and surgical abstention was decided.

Cervical masses represent a broad differential diagnosis. Imaging studies are a good diagnostic tool, but definitive diagnosis requires a histopathological study. UCD is thought to be a clonal neoplastic process and is usually asymptomatic. Investigations include a blood work-up, imaging and pathologic studies, and are required to establish a diagnostic classification and to determine the treatment modalities. Diagnostic criteria include a single lymph node lesion with a typical histopathology. Surgery remains the main treatment for UCD, and immunologic treatments represent an alternative to non-operable lesions.

Though CD is a relatively rare entity it should be strongly considered in the differential diagnosis of cervical lymphadenopathy.

P39

Closure of tracheo- oesophageal fistula using the SCIP-Flap: A pilot case series

Evelin Kovacs-Sipos, Gunesh Rajan, Mario Scaglioni
Luzerner Kantonsspital; Luzerner Kantonsspital (LUKS)

Introduction:

The tracheo- oesophageal fistula (TOF) is defined as a pathological connection between the trachea and oesophagus, congenital or acquired. One of the most common causes of the latter are malignant processes or the consequence of their treatment. The reconstruction is challenging because of the location, defect size, poor tissue quality, etc. The purpose of this presentation is to demonstrate our experience in the treatment of TOF with superficial circumflex iliac artery perforator (SCIP) Flap.

Material, Methods:

4 patients (3 patients after total laryngectomy and partial pharyngectomy, 1 patient after total laryngectomy without partial pharyngectomy) developed TOF. 3 patients had undergone several revision operations at other institutions. One patient who had metastatic thyroid cancer leading to a TOF formation during the systemic targeted treatment.

Results:

3 patients had successful closure of the TOF with subsequent normal oral intake. In the patient with the metastatic thyroid cancer the TOF reoccurred as a result of disease progression and impaired wound healing due to the systemic targeted treatment.

Conclusion:

Our case series show that the SCIP offers a reliable, versatile and simple reconstructive option for various types of TOF.

P40

Open Surgery for Major Laryngotracheal Complications in Intubated COVID-19 Patients, the ongoing battle

Laurence Pincet, Nicolas Glasson, François Gorostidi, Kishore Sandu
CHUV Centre Hospitalier Universitaire Vaudois (CHUV)

During the current COVID-19 pandemic, several emerging cases of laryngotracheal stenosis following prolonged intubation and tracheostomy are being reported. The patients' pre-existing comorbidities, the disease itself and the pronation maneuvers increase the risk for endolaryngeal and tracheal damage. In this poster, we report 6 consecutive patients with acquired severe intubation lesions, that required opened surgery.

Long-term intubation and high rate of tracheostomy in COVID-19 patients might determine an unprecedented increase of airway stenosis.

P41

Einführung der Entrustable Professional Activities (EPAs): erste Erfahrungen aus dem Luzerner Kantonsspital und Universitätsspital Zürich

Nadja Angela Stenz, Christian Meerwein, Adrian Marty, Alexander Huber, Thomas Linder
Luzerner Kantonsspital (LUKS); Universitätsspital Zürich

Ziele

EPAs haben sich als jüngstes Instrument der kompetenzbasierten Weiterbildung zur Beurteilung einer konkreten Handlung im klinischen Alltag etabliert. Ziel ist es, unsere ersten Erfahrungen nach Einführung der EPAs zu zeigen und die Rolle der EPA-basierten Kompetenzprofile in der Beurteilung der Assistenzärzt*innen (AA) zu untersuchen.

Material und Methoden

Das ORL-Weiterbildungsprogramm orientiert sich zur Erreichung des Facharztstitels an Inhalten und definierten Anzahl von Jahren. Das SIWF hat sich vorgenommen, auf eine kompetenzorientierte Weiterbildung umzustellen. Im März 2021 startete ein Pilotprojekt an zwei ORL-Kliniken. Die Benutzung der App ist freiwillig. Möglichst viele Assessments sollen dokumentiert und möglichst mit einem Feedbackgespräch abgeschlossen werden. Rückmeldungen dienen zur stetigen Weiterentwicklung der App.

Resultate

Bisher wurden ca. 300 Assessments durchgeführt. Mit wenig Aufwand kann ein Assessment dokumentiert werden. Mit den Datenpunkten wird ein individuelles Kompetenzprofil erstellt, womit objektiv festgestellt werden kann welche klinische und operative Tätigkeiten selbstständig ausgeführt werden können. Die Durchführung der Assessments via App gelten als gleichwertige Alternative zu den bisher von der SIWF vorgeschriebenen Arbeitsplatz-basierten Assessments.

Schlussfolgerungen

Der Übergang zu einer kompetenzbasierten Weiterbildung hat zum Ziel das Erlangen der Praxisreife zu verbessern. Unsere Erfahrungen sind derzeit noch begrenzt. Eine verbesserte Feedback-Kultur führt zu präziseren Zielvereinbarungen und erhöht die Wertschätzung für die AA. Offen bleibt, ob es zu einer Verbesserung und Beschleunigung der Weiterbildung führt.

P42

Peut-on faire de l'oncologie ORL en pratique privée ?

Pavel Dulguerov, Ambroise Champion, Thomas Breuneval, Angela Pugliesi, Anderej Terzic, Philippe Pasche

Centre ORL et Chirurgie Maxillo-Cervico-Faciale; Hôpital de La Tour; Clinique Cecil/Hirslanden

CONTEXTE:

L'oncologie ORL est traditionnellement pratiqué dans les centres universitaires et régionaux.

OBJECTIF:

Établir le bilan après 4 ans de prise en charges des patients avec tumeur maligne ORL dans un hôpital privé.

RÉSULTATS:

120 patients pris en charge avec les caractéristiques suivantes:

- localisation : 30% cavité buccale, 29% oropharynx, 12% larynx, 8% glandes salivaires, 7% peau, >5% hypopharynx, thyroïde, ASPE, sinus;

- stades : T0:5%, T1:41% T2:28% T3:8% T4:18%

Le traitement comportait de la chirurgie chez 70% et une radio(chimio)thérapie chez 56%.

Selon la méthode de Kaplan-Meier la survie globale est de 86% +/- 3.8% et le contrôle locorégional final est de 93% +/- 2.7%

CONCLUSION:

L'oncologie ORL en pratique privée est associée dans ce contexte à d'excellents résultats.

P43

Oropharyngolaryngeal involvement in toxic epidermal necrolysis: a retrospective case series

Nicolas Glasson, François Gorostidi

CHUV Centre hospitalier universitaire vaudois; CHUV

Toxic Epidermal Necrolysis (TEN or Lyell syndrome), is a rare but severe, immune-mediated drug adverse reaction characterized by bullous epithelial detachment that involves skin and mucosa. Oral involvement is found in almost all cases, but the prevalence and severity of lesions in other head and neck regions is poorly described. The objective of our study is to assess the type, frequency, management and sequelae of otolaryngeal mucosal lesions in TEN patients.

We conducted a retrospective case series in a single tertiary burn center at the university hospital in Lausanne, Switzerland. All patients treated at our intensive burn unit between 2006 and 2019 with the diagnosis of TEN were included. Demographic and clinical data were collected from the electronic medical record.

Of the 19 patients treated at our burn unit, 14 (74%) survived, 17 (89%) have documented ENT examination and 14 (82%) mucosal lesions of the ENT region. 3 patients refused further resuscitation. Of the remaining 16 patients, 13 (81%) required orotracheal intubation. 3 patients (21%) developed otolaryngeal sequelae, one with severe endonasal synechiae, one with severe gingival synechiae, and all 3 had severe hypopharyngeal synechiae. All three were intubated more than 14 days and required endoscopic procedures to treat the sequelae. Intubation may represent a risk factor for severe synechia, possibly because of the lack of mobilization of the musculature and the unconsciousness preventing the patient to complain. Therefore, it seems reasonable to recommend a regular complete ENT examination in TEN patients, to detect and provide early treatment against potentially debilitating mature synechia.

P44

Tonsillar tuberculosis mimicking oropharyngeal cancer

Francesca Parisi, Frank Metternich, André Arnoux, Lukas Horvath
KSA Aarau

Background:

A case report of a forgotten ENT entity.

Materials and Methods:

A 48 year old female Patient with a history of a previously treated latent tuberculosis is complaining of unilateral odynophagia, globus sensation and unilateral cervical lymphadenopathy.

During examination, an atrophic, poorly defined left palatine tonsil with a solid, painless, ulcerated lesion in the tonsillar fossa was seen. The posterior palatal arch as well as the lateral and dorsal pharyngeal wall showed signs of invasion. Multiple biopsies were performed and the initial histopathologic and immunohistochemical analysis excluded malignancy but showed an acute granulomatous tonsillitis, negative Ziehl-Neelsen stain. Only the PCR analysis was positive for M. tuberculosis.

Results:

Following diagnosis, an ipsilateral lymph node extirpation was performed for microbiological cultivation prior to therapy. Further treatment was carried out by the infectious diseases department.

Conclusions:

Tonsillar tuberculosis is a rare manifestation of an extra-pulmonary tuberculosis.

The secondary Form is more common than the primary form and presumably occurs due to contact with infected sputum or aerosols containing Mycobacterium tuberculosis. The differentiation upon inspection between the aforementioned and oropharyngeal cancer can be difficult. Histological examination and subsequent PCR testing leads to the correct diagnosis.

P45

Innovative Surgical Planning Using 3D Printing in Otolaryngology, Head & Neck Surgery

Carsten Fechner, Rajan Gunesh, Justus Roos, Thomas Linder

Luzerner Kantonsspital, Institut für Radiologie; Luzerner Kantonsspital, Hals-, Nasen-, Ohrenklinik

Aims:

Hearing implants (e.g. Sound-, Bonebridge) require sufficient space for successful placement in the middle ear or within the mastoid cavity. In cases of malformations and/or previous surgeries, proper planning is challenging for the surgeon who has to rely on 2D-CT images alone. The same applies to head & neck tumors in the vicinity of critical structures such as the skull base or the larynx. Innovations in 3D printing using preoperative imaging allow precise planning to achieve successful outcomes.

Materials and Methods:

Over the last 13 months six models were 3D printed for difficult surgical cases. Semiautomatic segmentation using multi-value thresholding (Syngo.via) and artificial intelligence (3D Slicer, Nvidia AI-Assist) was performed. In-house 3D printing was done either with a high resolution (25 µm) stereolithography medical printer (Formlabs Form 3B) or a multicolor printer (Prusa i3), followed by preoperative discussion with the surgeon and sterilization for intraoperative use.

Results:

Surgical planning with help of the 3D printed structures was noticeably improved. Micrometer structures like the stapes or mastoidal cells were able to be printed successfully. 3D printing time ranged from 3 to 7 days and costs ranged between 500 to 1200 CHF per model.

Conclusion:

3D printed models of pathologies with complex anatomical features demonstrate significant potential to improve the surgical planning. The interdisciplinary collaboration between radiologists and surgeons is key to translate 3D-printing into an effective surgical planning tool. Current limitations are time for planning and lack of reimbursement pathways.