ENT_BB CONNECTION

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Assessment of functional and patient-reported outcomes of bone-anchored hearing aids (BAHA)

Introduction: The bone-anchored hearing aids (BAHA) are bone conduction-operating devices made up of an audio processor and an osseointegrated bone-anchored titanium implant. Bypassing the exterior and middle ears, sound waves can go through the bone to the inner ear. Currently, there are two main categories of BAHA devices: percutaneous and transcutaneous. Percutaneous devices include an abutment that penetrates the skin and is connected to the implant directly, as well as transcutaneous devices, which utilise magnets to link with the implant through healthy skin.[1] Percutaneous devices have a significant advantage over transcutaneous devices when they are in direct contact with the cranium. Signal attenuation of passive transcutaneous devices, which rely on vibratory signal transmission through the skin, can reach 20 dB, especially at high frequencies. The percutaneous devices' direct connection enables effective signal transmission at all frequencies without the presence of skin and soft tissue resistance.[2] This study aimed to assess the functional and patient-reported outcomes after percutaneous bone-anchored hearing aid (BAHA) implantation.

Methods: In this prospective study, a total of 22 adult patients who underwent percutaneous BAHA device implantation throughout this assessment period were included. Both patients reported outcome measures (PROMs) and auditory function were examined in the assessment period and after 6 months of implant activation. The PROMs comprised three disease-specific forms such as Hearing Handicap Inventory (HHI), Satisfaction with Amplification in Daily Life Scale (SADLS), and Tinnitus Handicap Inventory (THI), as well as a generic measure (Medical Outcome Study 36 Short Form Healthy Survey (MOS SF-36)).

Results: According to surgical indication, the sound field pure tone average (PTA) for total functional gain with the BAHA was 29 dB. The functional improvement was more pronounced with a larger preoperative air-bone gap. With the use of percutaneous BAHA devices, a substantial improvement in HHI scores (Fig.1) and an improvement in total SADLS scores (p 0.05) in the PROMs were observed. Patients who used the BAHA for longer were likely to have sound-field PTAs below 30 dB and word recognition score (WRS) improvements greater than 15%. In both emotional and situational parameters, there was a substantial improvement in HHI scores, as well as a significant rise in total SADLS scores. In fact, 8 individuals (36.4%) had no HHI handicap after utilising the BAHA for six months.

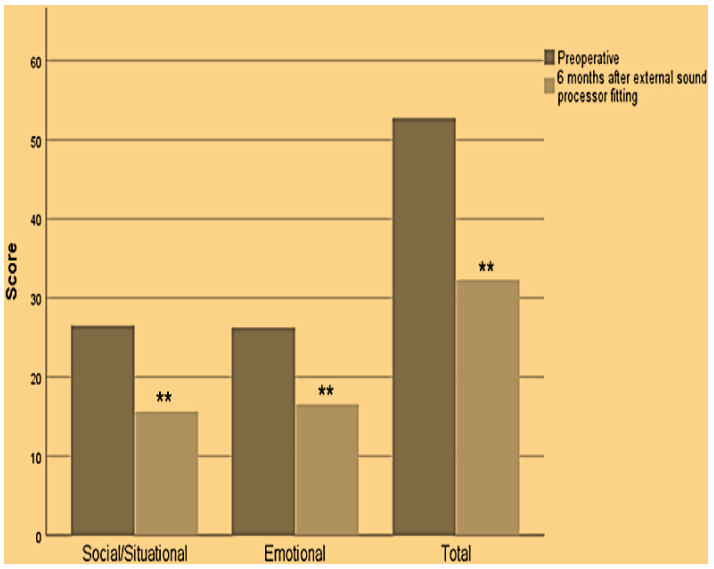

Fig 1. HHI score before and after BAHA implant. Higher scores indicate a greater degree of disability

Discussion: A Rahim et al. study showed that the BAHA increased patients' quality of life by enhancing their wellbeing and social and medical standing. 91.4% of patients used BAHA for more than 4 hours per day, while 8.6% used it for less than 4 hours.[3]

Conclusion: The study concludes that BAHA was a safe and effective alternative for hearing rehabilitation compared to conventional hearing aids (CHA). The PROMs were considered the best BAHA technique for hearing impairment.

The BAHA is a reliable and safe option for hearing rehabilitation. Overall patient satisfaction is revealed by the PROMs outcomes.

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Assessment of Laryngeal stenosis treatment after radiation and supracricoid partial laryngectomy with laryngeal carcinoma

Introduction: The supracricoid partial laryngectomy with cricohyoidoepiglottopexy (SCPL-CHEP) technique was first developed in the 1950s. It has subsequently become the accepted practise for SCPL-CHEP after various improvements. Long-term follow-ups revealed that supracricoid laryngectomy is a well-tolerated procedure with excellent voice and swallowing function. Patient selection is essential to getting a satisfactory outcome in terms of pathological and functional control.[1] Speech, swallowing, and breathing are all preserved when a section of the larynx is removed during a supracricoid laryngectomy (SCL), which preserves organ function without sacrificing local control and cure rates.[2] The aim of this study was to assess the potential causes and therapeutic approaches for laryngeal stenosis after radiotherapy following supracricoid partial laryngectomy with cricohyoidoepiglottopexy (SCPL-CHEP).

Methods: In this retrospective study, a total of 7 patients with laryngeal stenosis after radiation followed by SCPL-CHEP were included. Prior to surgery, all patients who were diagnosed with squamous cell carcinoma, mid-stage laryngeal carcinoma, or advanced

laryngeal carcinoma was eligible for SCPL-CHEP surgery. Patients were provided the proper care according to their situations as soon as laryngeal stenosis was discovered during the post-surgical follow-up phase.

Results: A biopsy revealed that scar hyperplasia was the new biopathological type and had not recurred. A laryngoscope was used to remove granulation from one patient, and laryngeal stenosis persisted for 6 months, 10 months, and 1 year following surgery in three patients with mid-stage and advanced squamous cell carcinoma. Under the laryngoscope, glottal expansion was achieved via granulation resection and low-temperature plasma ablation (Figure 2). Laryngeal dehiscence surgery and laryngotracheal T-tube insertion were performed on two individuals. After surgery, all patients made good progress and have open airways.

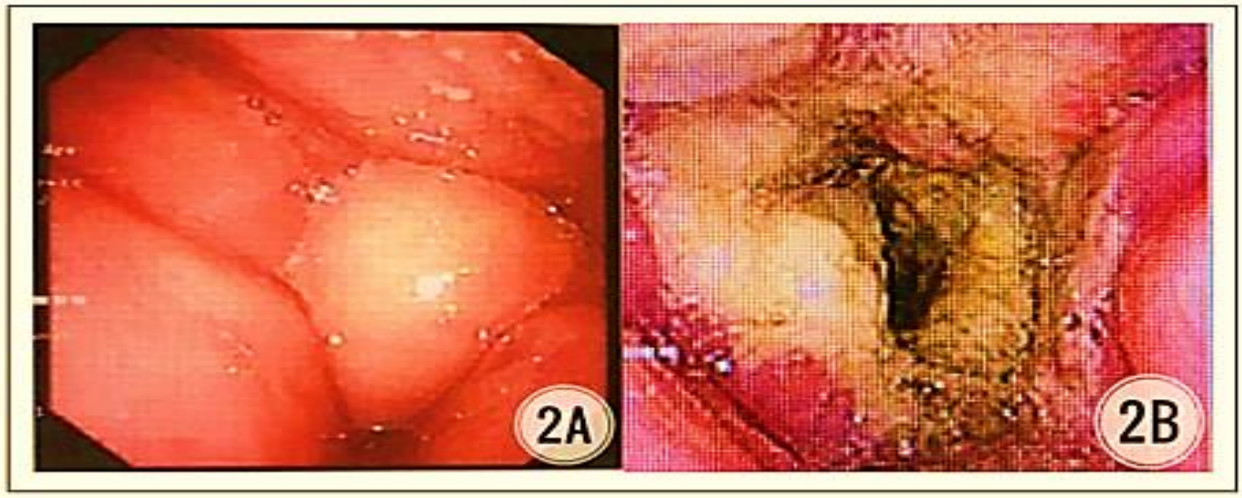

Figure 2. A. Preoperative larynthroscopy revealed nodular tissue stenosis in the larynx cavity; B. Postoperative laryngoscopy revealed the reopening of the airway.

Discussion:

This study revealed that laryngeal stenosis induced by scar hyperplasia could be treated by laryngotomy and the insertion of a T-tube into the throat scar, similarly compared to Anschuetz, L., et al. study, which revealed patients had received radiation or concurrent chemotherapy due to recurrence, which subsequently developed a chondroradionecrosis leading to laryngeal stenosis, which could be managed by total laryngotomy.[3]

Conclusion: Laryngeal stenosis is one of the rare complications of SCPL-CHEP in patients with mid- and late-stage laryngeal carcinoma. A second-stage laryngeal dilatation was carried out based on the patient's laryngeal stenosis.

One of the rare complications of SCPL-CHEP is laryngeal stenosis in individuals with mid- to late-stage laryngeal cancer.

References:

1. Jia Y, et al. Analysis of Clinical Treatment of Laryngeal Stenosis After Radiotherapy and Supracricoid Partial Laryngectomy with Cricohyoidoepiglottopexy of Mid-stage and Advanced Laryngeal Cancer. Ear, Nose & Throat Journal. 2023 Feb 10.
2. Allegra E, et al. Impact of the anterior commissure involvement on the survival of early glottic cancer treated with cricohyoidoepiglottopexy: A retrospective study. Cancer Management and Research. 2018.
3. Anschuetz, L., *et al.* Long-term functional outcome after laryngeal cancer treatment. *Radiat Oncol* **14**, 101 (2019).

Evaluation of the long-term effect of dupilumab in asthma patients with or without chronic rhinosinusitis and nasal polyps

Introduction: Chronic respiratory symptoms and restricted airflow are features of asthma. Atopic dermatitis, chronic rhinosinusitis and nasal polyps (CRS-NPs), and allergic rhinitis are among the many coexisting diseases that frequently coexist with asthma and have similar underlying pathogenic characteristics. Due to their propensity for recurrence, individuals with concurrent CRS-NP may benefit especially from monoclonal antibody therapy that targets underlying type 2 inflammatory processes.[1]Dupilumab (DPL) is a fully human VelocImmune-derived monoclonal antibody that inhibits the common receptor for IL-4 and IL-13 and is accepted for the management of atopic dermatitis in adult patients.[2]

The aim of this study was to assess the long-term effectiveness of dupilumab in TRAVERSE (NCT02134028) patients with uncontrolled, moderate-to-severe (QUEST), or oral corticosteroid-dependent (VENTURE) asthma with or without associated CRS-NP.

Methods: Patients received subcutaneously administered 300 mg of dupilumab every two weeks for up to 96 weeks, in a total of 317 participants from the TRAVERSE QUEST trial and 61 patients from the VENTURE study who self-reported CRP-NP. Patients were divided into parent study treatment groups (placebo/dupilumab, dupilumab/dupilumab). The asthma control questionnaire score of 5, the asthma quality of life questionnaire score, Asthma Quality of Life Questionnaire score, mean change from the parent study baseline in prebronchodilator forced expiratory volume in 1 second, and the OCS dosage were the endpoints of the study.

Results: In this study patients with concomitant CRS-NP reported more exacerbations and higher oral corticosteroids dosages in the past. According to TRAVERSE's findings, at week

96 from the QUEST and VENTURE baselines, exacerbation rates for dupilumab/dupilumab were 2.39 to 0.32 and 2.32 to 0.35, respectively, and 2.36 to 0.41 and 2.36 to 0.45 for placebo/dupilumab. Results from non-CRS-NP were comparable. Asthma Control Questionnaire 5 score, forced expiratory volume in 1 second, and Asthma Quality of Life Questionnaire improvements from parent studies were sustained in TRAVERSE; patients receiving placebo or dupilumab saw similar improvements to those receiving dupilumab or dupilumab by week 48. At week 96, OCS had been stopped in 71% and 39% of OCS-dependent patients with CRS-NP, as well as in 83% and 47% of patients without CRS-NP who had received the appropriate treatments of dupilumab/dupilumab and placebo/dupilumab. (Table 1)

Patients	enrolled from QUEST				enrolled from VENTURE			
	With coexisting CRS-NP		Without coexisting CRS-NP		With coexisting CRS-NP		Without coexisting CRS-NP	
	PBO/DPLn = 111	DPL/DPLn = 206	PBO/DPLn = 406	DPL/DPLn = 807	PBO/DPLn = 36	DPL/DPLn = 25	PBO/DPLn = 61	DPL/DPLn = 65
Patients with any TEAE, n (%)	89 (80.2)	168 (81.6)	325 (80)	621 (77.0)	30 (83.3)	19 (76.0)	44 (72.1)	51 (78.5)
Per patient-year (per 100 patient-years)[a]	89/52.4 (169.9)	168/108.9 (154.3)	325/241.2 (134.8)	621/504.8 (123.0)	30/20.3 (147.6)	19/13.9 (136.7)	44/36.7 (119.9)	51/39.9 (127.7)
Patients with any treatment-emergent SAE, n (%)	15 (13.5)	28 (13.6)	33 (8.1)	78 (9.7)	5 (13.9)	4 (16.0)	7 (11.5)	6 (9.2)
Per patient-year (per 100 patient-years)[a]	15/168.0 (8.9)	28/299.3 (9.4)	33/579.9 (5.7)	78/1158.3 (6.7)	5/47.3 (10.6)	4/33.2 (12.0)	7/78 (9.0)	6/86.2 (7.0)
Patients with any TEAE leading to death, n (%)	0	0	0	1 (0.1)	0	0	0	0
Per patient-year (per 100 patient-years)[a]	0/173.9	0/318.7	0/606.6	1/1224.7 (0.1)	0/52.6	0/36.4	0/85.0	0/88.4
Patients with any TEAE leading to permanent treatment discontinuation, n (%)	3 (2.7)	8 (3.9)	9 (2.2)	23 (2.9)	3 (8.3)	1 (4.0)	1 (1.6)	4 (6.2)
Per patient-year (per 100 patient-years)[a]	3/172.9 (1.7)	8/316.1 (2.5)	9/604.2 (1.5)	23/1218.3 (1.9)	3/51.6 (5.8)	1/36.2 (2.8)	1/84.8 (1.2)	4/87.4 (4.6)

Abbreviations: CRS-NP, chronic rhinosinusitis and nasal polyp; SAE, serious adverse event; TEAE, treatment-emergent adverse event.
[a]Data are number of patients with any event per patient-year (number of patients with 1 or more event per 100 patient-years).

Table 1: Overview of Treatment-Emergent Adverse Events in Patients from QUEST and VENTURE During TRAVERSE in the Overall Exposed Populations of Non-OCS-Dependent and OCS-Dependent Patients

Discussion: This study revealed that use of dupilumab in asthma patients with or without CRS-NP observed decreased exacerbation rates and improved lung function, asthma control, and quality of life. Similarly Compared to Katelaris Ch, et al. study showed that use of dupilumab 200/300 mg with inhaled corticosteroids + LABA in uncontrolled persistent

asthma patients with or without CRS-NP observed reduced severe exacerbations rate and improvement in FEV_1 and asthma control.[3]

Conclusion: The current study concludes that in asthma patients with or without self-reported comorbid CRS-NP, the effectiveness of dupilumab was maintained over a period of time.

Duplilumab had a favourable safety profile with comparable rates of treatment-emergent adverse events (TEAEs) in each therapy group.

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1. Berger P, et al. Long-term efficacy of dupilumab in asthma with or without chronic rhinosinusitis and nasal polyps. Annals of Allergy, Asthma & Immunology. 2023 Feb 1.
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3. Katelaris Ch, et al. P58: Dupilumab Efficacy and Effect On Asthma Control In Patients With Uncontrolled Persistent Asthma And Comorbid Chronic Rhinosinusitis With Or Without Nasal Polyps. Internal Medicine Journal. 2017 Sep.

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Oncocytic cystadenoma of the nasal vault: A case report

Introduction: A rare benign tumour of the salivary glands known as an oncocytic papillary cystadenoma most frequently affects the small salivary glands but can also occur in the larynx and large salivary glands. Oncocytes are big, atypically shaped cells with granular eosinophilic cytoplasm and an abundance of mitochondria.[1] Oncocytic alterations originate from the metaplasia of epithelial cells with high metabolic activity and are linked to cellular ageing, which disturbs the organisation of the mitochondrial enzymes.[2] The aim of this case report was to present an oncocystic cystadenoma in the nasal-vestibular region in a paediatric patient.

Case study:

A 10-year-old female patient with complaints of a nasal abscess and a history of allergies and exercise-induced asthma, as well as a trauma on the left side of her nose before the development of the lesion. At that time, oral clindamycin was prescribed, which improves tenderness and reduces lesion size. After visiting the otolaryngology clinic, examination of the left side of the nose-vestibular region revealed the presence of a yellow-white coloured soft cyst internally (Fig.3).

Magnetic resonance imaging (MRI) revealed a 1.2 cm 0.9 cm x 1.2 cm rim-enhancing cyst in the left anterior nasal cavity. An incision was made lateral to the cyst, and it was completely removed from the internal nasal valve region. The cyst sample sent to the pathology lab and report showed fluorescence in situ hybridization for MAML2 gene rearrangements was negative, and the classic characteristics of mucoepidermoid carcinoma were not observed. Patient was examined after 3 weeks of surgery, there was no sign of lesion and good healing at surgical site with external nose deformity was resolved.

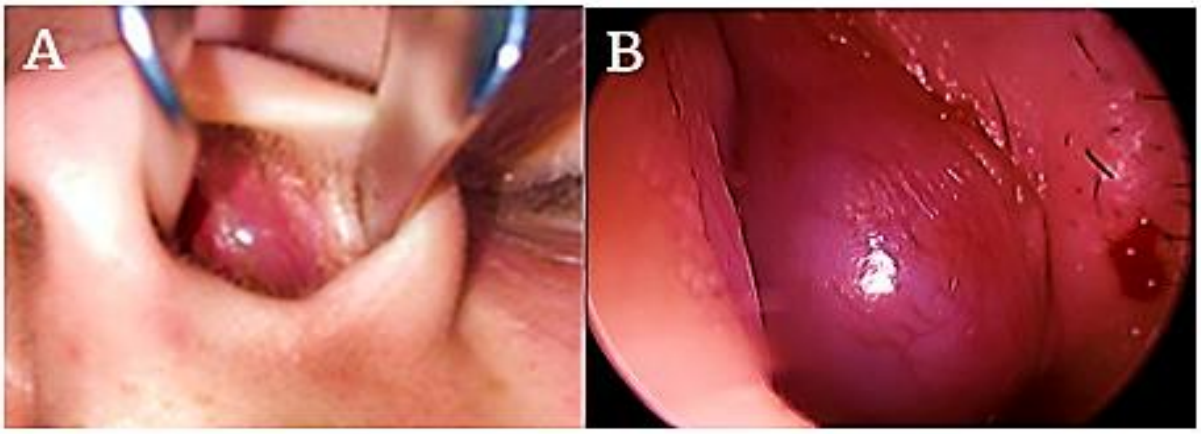

Figure 3: External (A) and internal (B) nasal exam of lesion.

Discussion: In this study, a cyst was removed by made an incision on the side of the cyst in the internal nasal valve region. There is no recurrence reported. similarly compared to the Goto M. et al. study, an incisional biopsy was performed, and microscopic results confirmed a papillary oncocytic cystadenoma. No recurrence had appeared five years after surgery, and the post-operative course was uncomplicated.[3]

Conclusion: The current study concludes that oncocytic cystadenomas are benign tumours of the salivary glands that only appear with symptoms related to their anatomic position and closeness to other tissues.

Nasal oncocytic cystadenoma was managed successfully by surgical excision with rare recurrence.

References:

1. Agarwal A, McClain K, Banker K, Chikwava K, Shah UK. Rare case of nasal vault oncocytic cystadenoma. Otolaryngology Case Reports. 2023 Feb 14:100519.
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