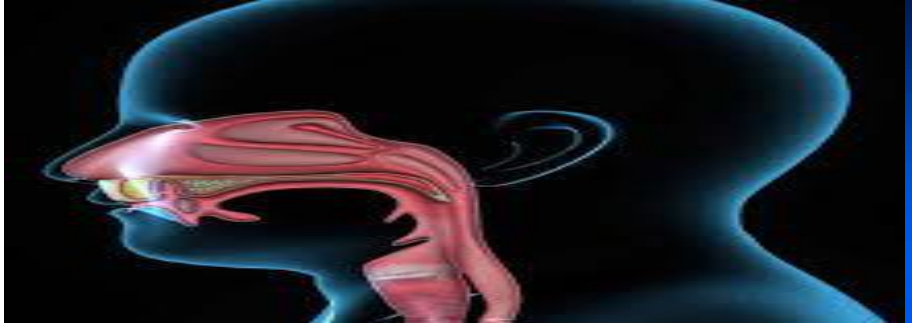
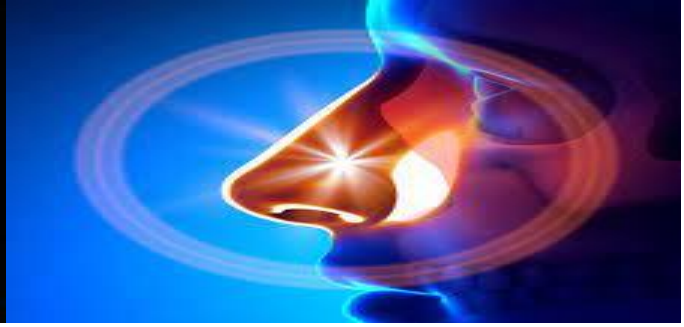

ENT NEWSBUZZ Vol 4 | Issue 20 |2025

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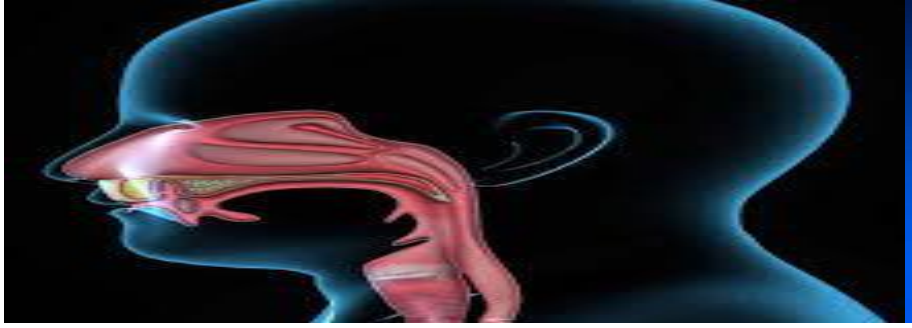
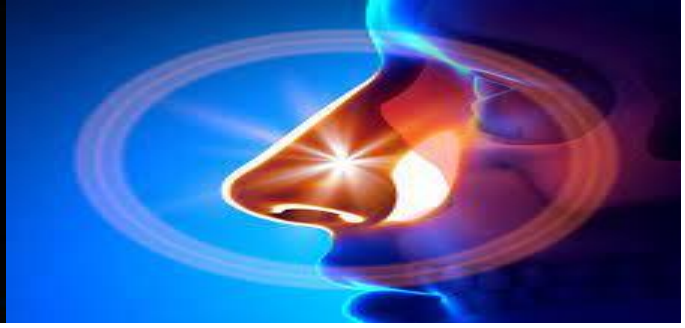
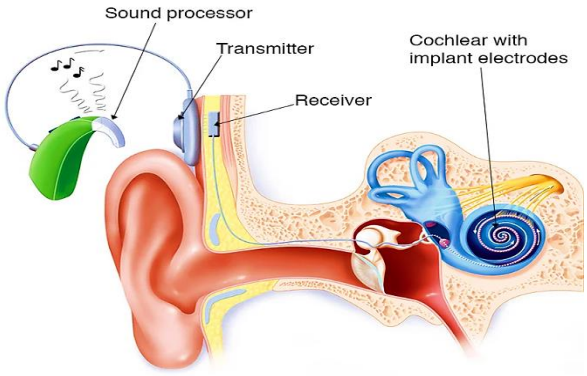



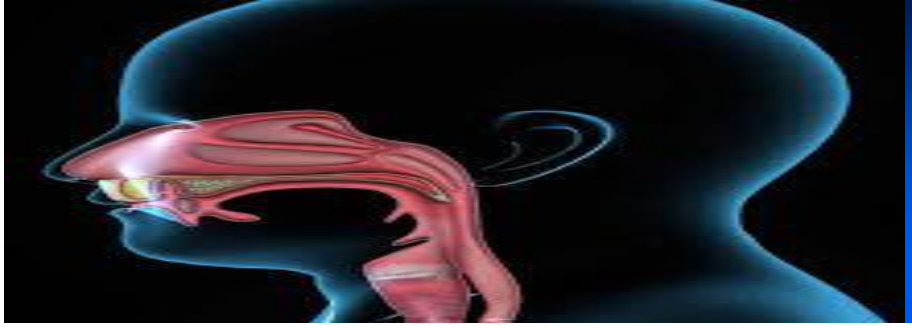
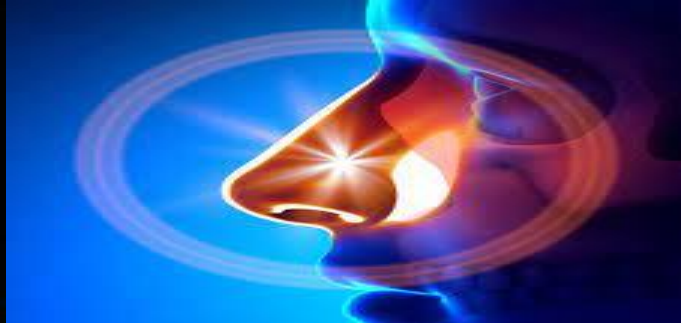
ENT NEWSBUZZ Vol 4 | Issue 20 |2025

Comparison of the Effectiveness of Cochlear Implants in patients with presynaptic Versus postsynaptic neuropathy

Introduction: Cochlear implants (CIs) are a pivotal intervention for individuals with severe-to-profound sensorineural hearing loss, yet outcomes vary depending on the underlying pathology. Regardless of success, CI outcomes differ and may be influenced by the underlying pathophysiology of hearing loss.[1] Auditory neuropathy (AN) or auditory neuropathy spectrum disorder (ANSD), is characterized by preserved otoacoustic emissions (OAE) and/or cochlear microphonics with absent or abnormal auditory brainstem responses (ABR).[2] It can be classified based on the site of dysfunction: presynaptic, postsynaptic, or central. Presynaptic AN, often linked to otoferlin gene mutations, affects inner hair cells or ribbon synapses, while postsynaptic AN involves abnormalities in the auditory nerve, including unmyelinated dendrites, auditory ganglion cells, and their axons. Central AN, typically associated with brainstem lesions such as vestibular schwannomas, falls outside the primary scope of this review. Genetic predisposition plays a key role in auditory neuropathy (AN) and is linked to various gene mutations. While not an exhaustive analysis of genetic factors, this review explores their influence on cochlear implant (CI) outcomes to enhance understanding and management. Notably, CI efficacy may differ between presynaptic and postsynaptic neuropathies, necessitating further investigation.[1] Thus, this review systematically evaluates current evidence comparing CI effectiveness in these subtypes.



Methods: A comprehensive literature search was carried out using several databases, including MEDLINE (via PubMed), Embase, Cochrane database, Web of Science, Scopus, CINAHL, and PsycINFO. The studies were included if they examined the effectiveness of CI in individuals with auditory neuropathy spectrum disease, employing electrophysiological measurements or genetic markers to differentiate between pre- and postsynaptic lesions. Patient demographics, neuropathy type (presynaptic or postsynaptic), genetic predisposition, cochlear implantation specifics (device type and surgical technique), and outcome metrics were among the data collected from each study. The outcome measurements include post-implantation quality of life evaluations, speech recognition thresholds, and auditory performance ratings.

Results: The significance of etiological diagnosis in predicting CI outcomes was repeatedly emphasized by an analysis of seven trials. More positive CI results were associated with genetic alterations, highlighting the significance of genetic causation. Electrophysiological tests also effectively measured auditory function, underscoring the importance of comprehensive diagnoses. Predicting CI outcomes in patients with AN requires an understanding of the etiology, including genetic variables and lesion sites, as indicated by the reviewed studies (Table 1). The potential for bias was determined to be low to moderate, reflecting thorough study design and reporting. High consistency and direct relevance to the clinical problems were demonstrated by the research, and the findings' dependability was bolstered by their accurate results.

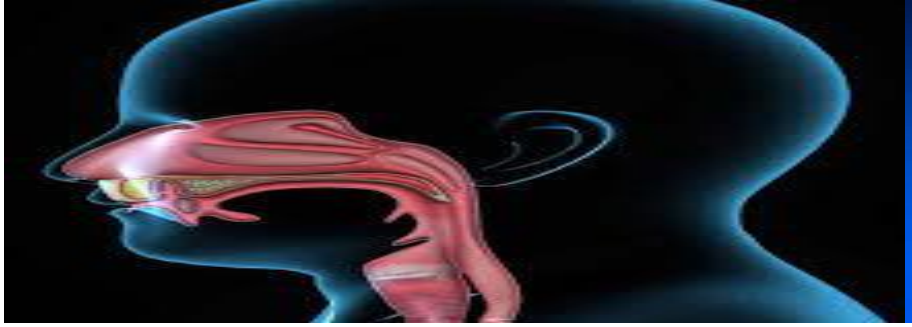
Analysis design	Investigations count	Summarized conclusion	Bias likelihood	Uniformity	Pertinence	Precision	Extra factors	Trustworthiness
Cohort study	7	Etiology, including genetic factors and lesion site, is central to predicting CI outcomes in AN	Low to moderate	High	High	High	None	Moderate

Table 1: GRADE Observations for the Included Studies.

Discussion: The combined results of this analysis highlight how important etiology is in forecasting CI outcomes for people with AN and genetic alterations. These studies offer insights into the variables determining CI performance, despite their disparate approaches and target points.[1] Chaudhry et al. analyzed the results of CI in patients with postsynaptic AN and presented a narrative synthesis of the literature that was accessible. They provide insight into the subset of AN patients included in this study with their results of typically good post-CI outcomes in postsynaptic AN case.[3]

Conclusion: This study shown that etiological factors have a general influence on CI results; however, success varies between pre- and postsynaptic neuropathies. Predicting CI performance requires the integration of genetic and electrophysiological diagnoses, indicating the necessity for individualized methods in assessing CI candidates for more focused and efficient auditory rehabilitation.

Electrophysiological assessments play a key role in accurately differentiating between pre- and postsynaptic auditory neuropathy, guiding diagnosis and treatment strategies.




ENT NEWSBUZZ Vol 4 | Issue 20 |2025

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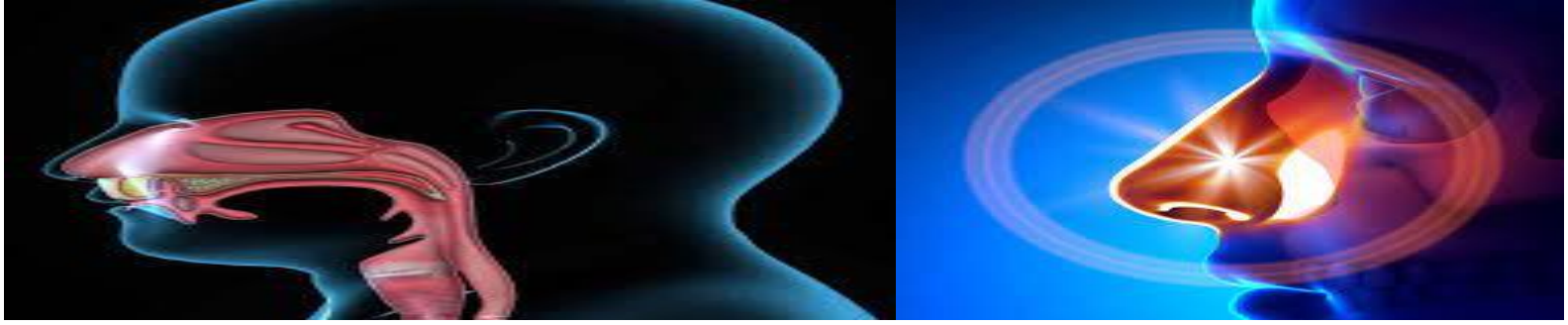
Correlation of Nasal Mucus Properties and Symptoms in patients with Allergic and Acute Non-Allergic Rhinitis

Introduction: Acute rhinosinusitis (ARS) is the inflammation of the paranasal sinuses, primarily the maxillary sinuses, caused by viral or bacterial infections and lasting less than six weeks.[1] Symptoms include nasal congestion, obstruction, drainage, facial pain, and headaches persisting for over 10 days but less than 4 weeks. ARS often resolves without medical intervention, and while antihistamines and nasal corticosteroids are effective for allergic rhinosinusitis (AR), their efficacy in ARS remains unclear. Assessing treatment effectiveness is challenging due to the lack of established outcome measures linked to disease resolution and quality of life (QOL). Unlike cystic fibrosis and chronic bronchitis, no published data correlate changes in nasal mucus properties and clearance with QOL in AR or ARS.[2] This prospective study evaluates nasal mucus properties, obstruction, inflammation, and health-related QOL in ARS patients during the acute phase (Day 5) and later stages of illness resolution (Day 14/28).

Methods: In this prospective study, a total of 280 patients were screened, with 42 subjects meeting the eligibility criteria and enrolling in the study (ARS: n = 34; AR: n = 8). Nasal secretions were analyzed for cell count and rheological properties, while acoustic rhinometry (AcRh) was performed on Days 5 and 14 to assess nasal airway changes. AcRh, which utilizes reflected sound waves to generate cross-sectional area-distance graphs of the nasal cavity, is a sensitive method for detecting variations in nasal obstruction severity. The Sino-Nasal Outcome Test-20 (SNOT-20) was administered on Days 5, 10, 14, and 28 to evaluate symptom burden. Patients rated nasal symptoms, emotional impact, and activity levels on a scale of 0 to 5, providing a quantifiable measure of disease severity.



Results: In ARS subjects, SNOT-20 and major symptom scores significantly improved by Day 28, correlating with increased nasal cavity volume (acoustic rhinometry) and reduced mast cell count. Mean SNOT-20 scores decreased from 38.0 ± 11.3 (Day 5) to 7.7 ± 7.0 (Day 28), indicating symptom resolution (Figure 1) ($p<0.001$). In contrast, AR subjects showed no significant improvement in SNOT-20 scores, nasal volume, or major symptoms. While mast cell and epithelial cell counts decreased in AR, eosinophils, neutrophils, and goblet cells remained unchanged. ARS subjects exhibited significant improvement in nasal obstruction, further linking symptom relief to nasal volume expansion.

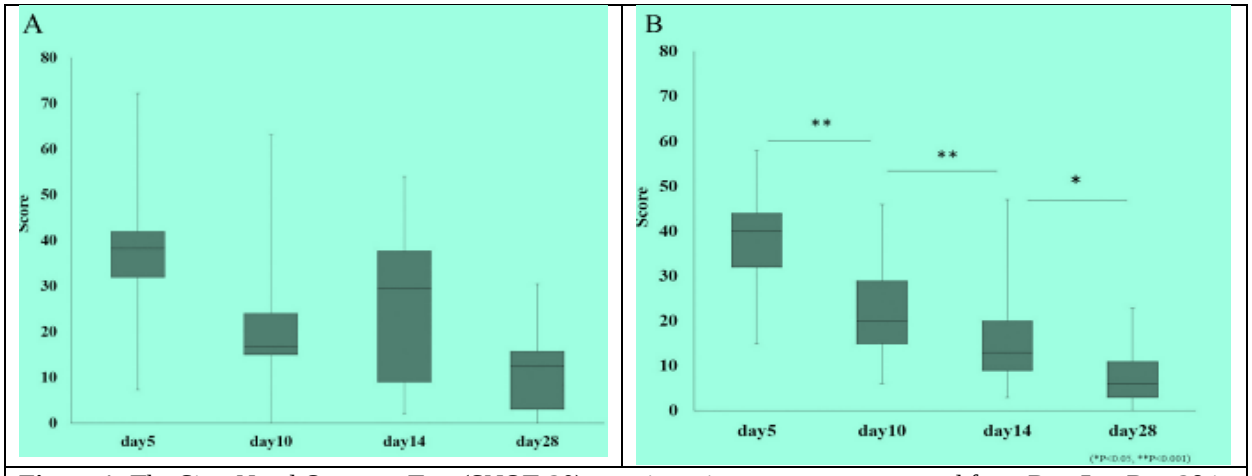
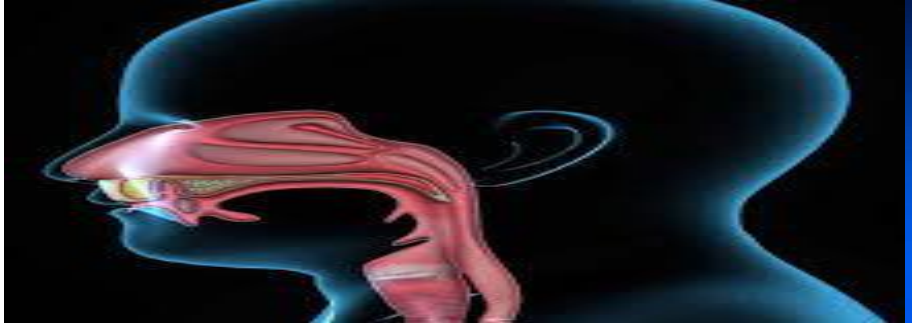
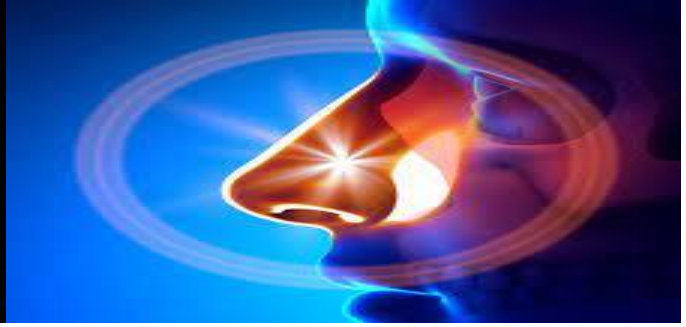


Figure 1: The Sino-Nasal Outcome Test (SNOT-20) questionnaire scores were assessed from Day 5 to Day 28 in subjects with allergic rhinitis (AR) (A) and acute rhinosinusitis (ARS) (B). No significant changes were observed in AR subjects, whereas a significant reduction in SNOT-20 scores was noted in ARS subjects between Day 5 and Day 28 ($\mathbf{p} < 0.001$).

Discussion: In this study, a significant improvement in cross-sectional area (CSA) at the nasal valve (CSA1) and the posterior portion of the inferior turbinate (CSA3) was observed in ARS subjects when comparing measurements from Day 5 to Day 14. This suggests a reduction in nasal obstruction as the condition progresses.[2] Additionally, in comparison to the findings of Melo AC et al., this study demonstrated a strong and significant correlation between nasal aeration and the cross-sectional area at the front of the inferior turbinate (CSA2) in the left nasal cavity prior to cleansing.[3] These findings highlight the dynamic changes in nasal airflow and obstruction during the course of ARS and support the role of nasal aeration assessments in evaluating disease progression.

Conclusion: This study suggests that nasal symptom improvement in ARS over 14–28 days was associated with a reduction in mast cells and an increase in nasal volume. In contrast, symptoms in AR tend to persist, highlighting distinct pathophysiological differences between the two conditions.

Nasal symptom relief in acute rhinosinusitis (ARS) is associated with decreased mast cell activity and nasal cavity expansion.

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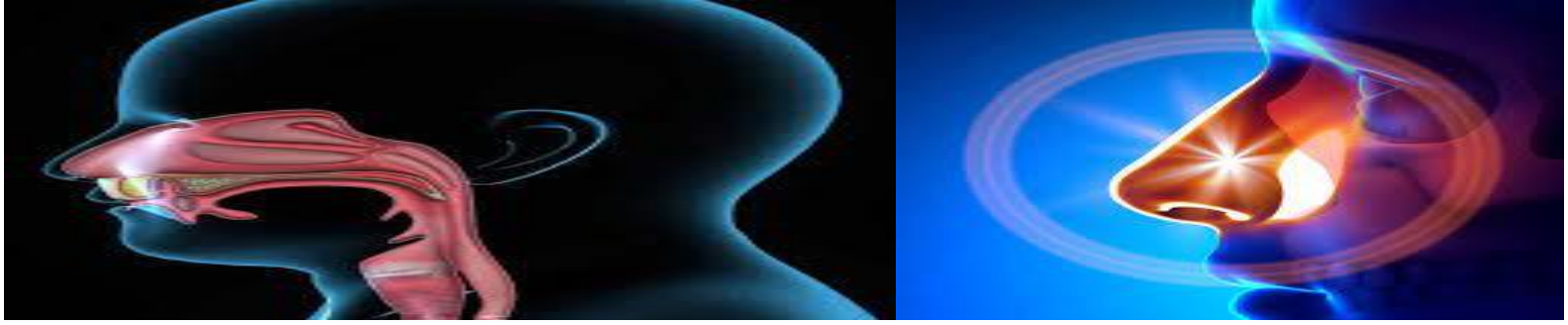
Comparison of the long-term effectiveness between Tonsillotomy and Tonsillectomy

Introduction: Classic tonsillectomy (TE), the surgical removal of the palatine tonsils, remains a widely performed head-and-neck procedure, with cold dissection TE considered the gold standard. While TE in adults primarily addresses chronic or recurrent tonsillar infections,[1] tonsillotomy (TT) has gained popularity for treating sleep-disordered breathing (SDB) in children due to tonsillar hyperplasia. TT offers advantages such as reduced postoperative pain, lower hemorrhage risk, and faster recovery compared to TE, though concerns exist regarding tonsillar regrowth and potential recurrence of infections or peritonsillar abscesses. While TT has demonstrated short-term benefits in quality of life (QOL) improvements for children with SDB, long-term data remain limited.[2] So, this study evaluated the 12-year outcomes of TT versus TE in terms of disease-specific QOL, SDB symptoms, throat infections, and reoperation rates.

Methods: This retrospective analysis comprised 189 patients under the age of 16 who had tonsil surgery. Following tonsil surgery, QOL was evaluated using the Tonsil and Adenoid Health Status Instrument (TAHSI). The TAHSI is a validated disease-specific quality of life measure for tonsil and adenoid diseases in children aged 2 to 16. Data regarding potential re-examinations and re-operations was collected. The Research Electronic Data Capture (REDCap) tool was used to compile the tonsil-related history and symptoms survey and compile the data. Every question in TAHSI is graded on a 5-point Likert scale, with 0 denoting "not a problem" and 4 denoting "severe problem". The item scores for each subscale are added together to provide a subscale raw score. Significant values suggest a significant disease load, while low levels imply asymptomatic individuals.



Results: Among the subjects, 87 had received TT and 102 had TE. The TT group's median follow-up was 11.8 years, whereas the TE group was 12.4 years. In both groups, the disease-specific quality of life was equally good. After TT and TE, throat infections occurred to the same degree and had not been a problem for the great majority of patients. There were no significant differences between the groups, and most subjects (79.0% TT, 86.9% TE) expressed satisfaction with the procedure. Reoperation rates were 6.9% and 1.0% following TT and TE, respectively, with very few revisits resulting from tonsil-related issues. Most participants expressed satisfaction with the surgical outcome, and no statistically significant differences were observed between the groups (Figure 1). Sixty-four respondents (79.0%) in the TT group and 86 (86.9%) in the TE group expressed some degree of satisfaction. Only one respondent (1.0%) and three (3.7%) respondents in the TT and TE groups, expressed some degree of dissatisfaction, whereas one respondent in each group expressed extreme dissatisfaction.

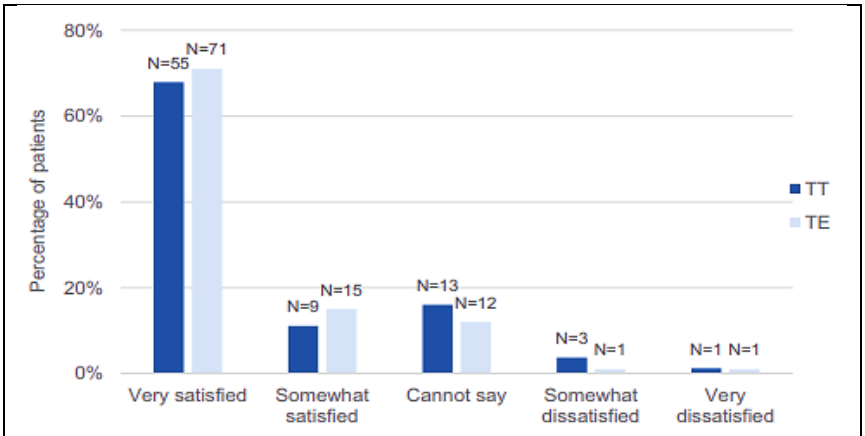
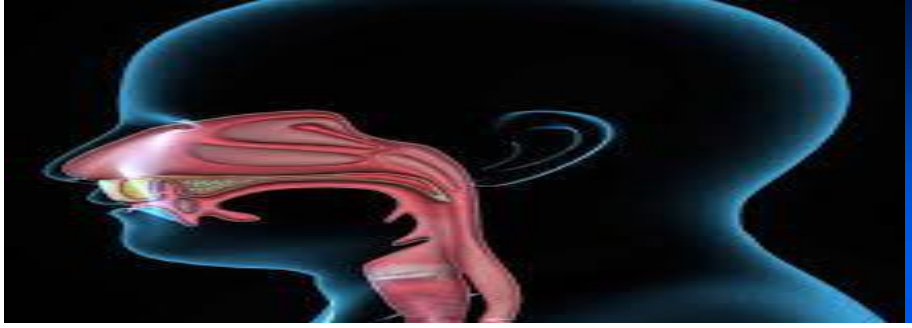
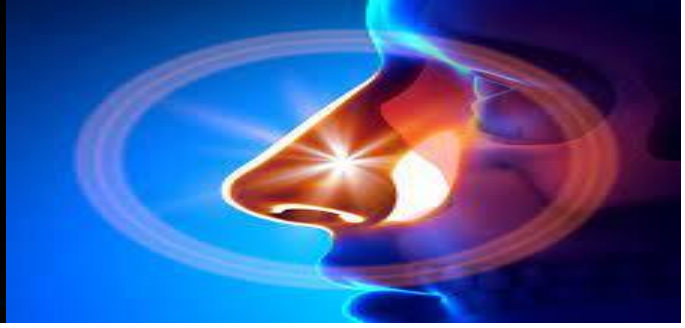


Figure 1. Satisfaction with tonsil surgery outcomes, with tonsillotomy (TT) N=81 and tonsillectomy (TE) N=100, and a median of 12.1 years after surgery (range 11.3–13.2).

Discussion: In this study, which included only 87 patients, 6.9% of the participants who had TT surgery had to have it done again, primarily because of tonsillar regrowth. Sakki AJ et al. involved 3141 children and found the hospital's rate of resurgery following TT was 1.9%.[3] According to the Swedish retrospective register-based cohort study involving over 27,000 patients, the rate of revision surgery following TT was 3.9%.[4] Recurrent obstructive symptoms were the primary reason for most resurgeries in both studies, and younger age at surgery was significantly linked to a higher risk of reoperation.

Conclusion: This study concluded that tonsillotomy appears to have excellent long-term clinical efficacy. Equal disease-specific QOL can be attained with TT using a less invasive surgical technique than with TE. There was no evidence linking TT to a higher incidence of tonsil infection issues over a median follow-up period of 12 years.

ENT NEWSBUZZ Vol 4 | Issue 20 |2025

Tonsillotomy (TT) offers a less invasive alternative to tonsillectomy (TE) while achieving comparable long-term improvements in disease-specific QOL.

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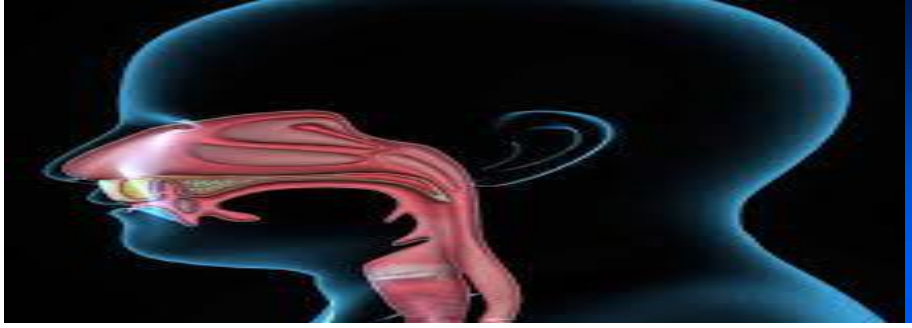
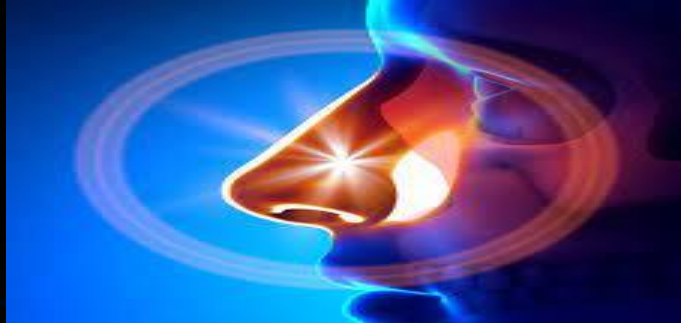
Pediatric Nasal Sinus Osteochondromyxoma: A Rare Neoplastic Entity

Introduction: Osteochondromyxoma (OMX) is an exceptionally rare neoplasm composed of osteochondromatous and myxoid elements. While it can originate in any bone, it predominantly arises in the diaphysis of long bones. OMX is strongly associated with Carney Complex, a rare autosomal dominant syndrome characterized by skin pigmentation abnormalities, endocrine dysfunction, and cardiac or other tumors.[1] Carney Complex is linked to PRKAR1A gene mutations, which, along with a first-degree family history, serve as key diagnostic criteria. OMX occurs in approximately 1% of affected individuals.[2] This report presents a case of OMX arising in the nasal sinuses, an uncommon site for this neoplasm.

ENT NEWSBUZZ Vol 4 | Issue 20 |2025

Case presentation: A 11-year-old boy was admitted to the emergency department with epistaxis after suffering a minor nose injury during a basketball game. After that, he was referred to a local ENT specialist, and a CT scan of his paranasal sinuses revealed a large, calcified tumor in the left nasal cavity. A blockage of the ipsilateral frontal, sphenoid, and maxillary sinuses resulted from the tumor's bulk effect compressing the orbit (Figure 1). The patient was evaluated with mild left eye proptosis and considerable facial asymmetry. He did have a history of nasal blockage that had worsened on the left side for 2 to 3 years. He denied having pain, anosmia, double vision, or epistaxis in the past. The patient had no severe medical conditions, such as additional tumors, skin abnormalities, or endocrine issues. Because the tumor was large and had a heterogeneous nature, it was decided to embolize it in order to minimize perioperative blood loss in the event that excision was difficult and prolonged. Embozene particles were used to embolize the tumor 48 hours before surgery. The embolization revealed that the internal maxillary and facial arteries' branches were the main source of blood for the tumor. Endoscopic surgery was used to remove the tumor. Intraoperative frozen pathology was performed on sections of the tumor to see if it was benign or malignant; however, the results were inconclusive. The resection went smoothly, and all visible regions of malignancy were removed (Figure 2). Pathology revealed myxoid stroma and hypercellular cartilaginous matrix; this is in line with a submucosal chondroid tumor. Genetic testing revealed a decrease in PRKAR1A expression, which could indicate osteochondromyxoma and the related Carney Complex. The patient experienced very little pain and fared extremely well in the post-operative phase. He was directed to genetics for additional Carney Complex testing and evaluation. Upon evaluation, no additional clinical indications or symptoms of Carney Complex were found.

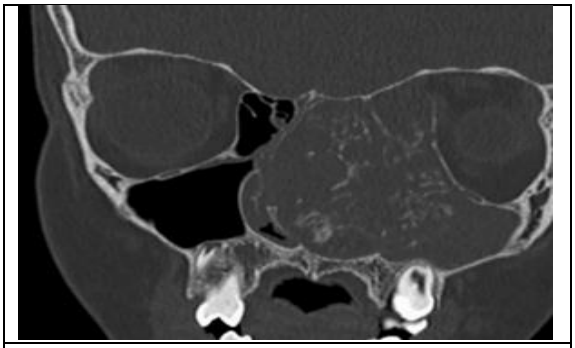


Figure 1: An expansive, calcified intranasal tumor discovered during a sinus CT scan.

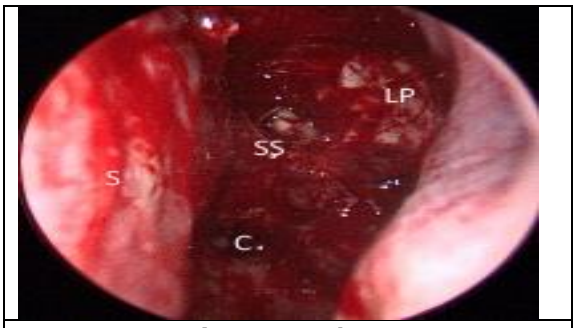
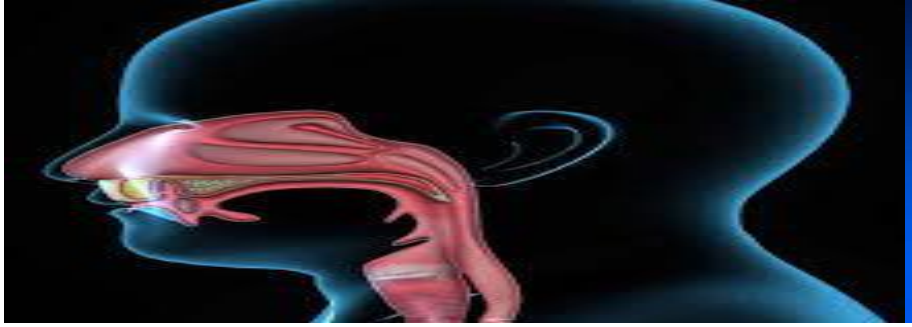


Figure 2: Nasal cavity subsequent to tumor excision. Upon resection, it was seen that the tumor considerably reduced the thickness of the Lamina Paprycea. Annotations for the picture: LP = Lamina Paprycea, C = Choana, SS = Sphenoid Sinus, and S = Septum.

Discussion: OMX is a very uncommon tumor, but it should be regarded as a differential diagnosis for tumors of the nasal and paranasal sinuses. Complete surgical resection is the gold standard treatment, with a favorable prognosis.[2] Considering a key factor in the diagnosis of Carney complex, a multidisciplinary evaluation is advised.[3]




Conclusion: Osteochondromyxoma should be considered in the case of a cartilaginous nasal tumor. Endoscopic resection is used as treatment, and observation is required to lower morbidity. Patients who have been diagnosed with osteochondromyxoma ought to be referred for Carney Complex genetic testing.

Endoscopic resection remains the standard treatment, with ongoing surveillance essential to minimize recurrence and long-term morbidity.

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