New Complication of Cochlear Implant Explantation: Incomplete Electrode Extraction

Incomplete Electrode Extraction During Cochlear Implant Revision.

Practitioners should be aware of potential incomplete electrode extraction when explanting a cochlear implant.

Background: Slightly >1% of cochlear implant patients require revision surgery. Often, the reason for replacement is device failure, but scalp break down, serious infection, or technology upgrades are other potential reasons. Usually the surgery requires explanting a device and replacing it with a new one. What happens in the case when we are removing a device and find that a portion of the electrode is retained within the cochlea?

Objective: To describe the complication of electrode retention during cochlear implant removal.

Design: Retrospective review.

Participants: 3 patients who had this complication.

Methods: Implanted device was removed in 3 patients, 1 due to infection and the others for device failure.

Interventions: Cochlear implant removal.

Results: First, a female aged 7 years had part of an electrode retained during explantation for a soft failure. After intraoperative consultation with family, the contralateral ear was implanted. Next, a child aged 4 years had developed chronic wound infections after cochlear implantation. The device was explanted with the electrode left in place; a second device was later implanted and also became infected. Removal of this device resulted in electrode retention which was left in place and the patient continued to use a contralateral implant. Finally, a female aged 5 years had her device removed with 6 electrodes retained. A second device was partially inserted and the patient achieved increasing performance after the contralateral ear was implanted.

Conclusions: Complications of cochlear explantation are rare with the most common one being cerebrospinal fluid leak. This paper presents a previously undescribed complication of cochlear implant explantation. Each complication was managed differently, but in each case the patient ultimately relied on a contralateral implant. Common features in these cases are pediatric patients and 2 of 3 cases involved positioners.

Reviewer's Comments: This complication is a rare one and a reliable way to prevent it is not presented. It is possible that in the future this complication may be less common as electrode designs change and positioners are no longer used. The paper is important in that it describes this unusual complication and presents several management options.

print tag: () Refer to original journal article
Cochlear Implantation Offers Benefits in Patients of Advanced Age.

Cochlear Implant Surgery in Patients More Than Seventy-Nine Years Old.

Eshraghi AA, Rodriguez M, et al:
Laryngoscope; (March): Epub ahead of print

Advanced age alone should not be considered a contraindication of cochlear implantation.

**Background:** In the past it was argued that cochlear implants may be of diminishing benefit with advancing age due to age-related degeneration of the central and peripheral auditory system, comorbidities to surgery, and cost-benefit ratio. Although previous studies have shown excellent results in cochlear implantation in patients aged >65 years, few have studied results in significantly older patient groups.

**Objective:** To determine complication rate and quality of life in cochlear implant uses in patients aged >79 years.

**Design:** Retrospective review.

**Participants:** 21 patients aged 79 to 89 years at the time of cochlear implantation.

**Methods:** Postoperative evaluation included assessment of compliance, patient satisfaction, phone use, and overall benefit to the patient. Hearing handicap inventory questionnaires were used.

**Interventions:** 1 patient was implanted with an advanced bionics device; remaining patients were implanted with a nucleus device.

**Results:** No intraoperative or permanent medical complications were reported. Most common complications were chronic pain and temporary vertigo symptoms which each occurred in 3 patients. Vertigo resolved within a few days of surgery and chronic pain resolved within 6 months. More rare complications included a transient facial nerve weakness, postoperative exacerbation of prior delirium, and urinary retention. Of patients, 1 had a soft failure and another had facial nerve stimulation at activation. Pure tone averages increased significantly after implantation to a mean of 22 dB. Both Hearing in Noise Test (HINT) and City University of New York (CUNY) speech scores also improved significantly. Quality of life assessment demonstrated that all patients believed they got some benefit from the implant, with all but 2 recommending the cochlear implant to others. Of patients, 13 underwent the Hearing Handicap Inventory for the Elderly (HHIE) questionnaire and patients had a significantly better score with the implant turned on.

**Conclusions:** Based on the results presented in this study, we should not consider age alone to be a contraindication to cochlear implantation.

**Reviewer's Comments:** One issue this study does not directly address is how well cochlear implantation is tolerated in older patients versus patients in younger age groups. It is quite possible that even though cochlear implants are well tolerated in this advanced age population, they do not receive the benefit of younger patients. We also occasionally see patients aged 90 years who would be potential cochlear implant candidates, who are not directly addressed in this data. However, given this data, there is reason to suspect healthy individuals even older than the age group studied here would remain good cochlear implant candidates.

**Additional Keywords:** Aging

**print tag:** () Refer to original journal article
Prevalence and Risk Factors for Longer BAHA Abutment

Experience With the Longer (8.5 mm) Abutment for Bone-Anchored Hearing Aid.
Monksfield P, Ho EC, et al:
Otol Neurotol; 30 (April): 274-276

Bone anchored hearing aid patients have the option of a longer 8.5 mm abutment if they have a thick scalp or postoperative soft tissue overgrowth.

**Background:** The Bone Anchored Hearing Aid (BAHA) system requires that a titanium fixture and abutment be placed behind the ear to attach the sound processor. The fixture is placed directly in the skull and eventually osteointegrates into the bone. The abutment attaches to the fixture and can be replaced if necessary. Soft tissue around the implant is also thinned at the time of surgery. One of the most common complications of this surgery is postoperative soft tissue thickening which causes feedback or, in extreme cases, soft tissue overgrowth of the abutment. Standard abutment is 5.5 mm, but an 8.5 mm abutment is also available.

**Objective:** To describe prevalence and risk factors for a longer BAHA abutment.

**Design:** Retrospective review.

**Participants:** 891 patients who received a BAHA implant between 1988 and 2006 at the University Hospital Birmingham in England.

**Methods:** Patients received BAHA for standard indications. Longer abutment was used for patients with thick scalp or postoperative soft tissue overgrowth.

**Interventions:** Titanium BAHA implant with 5.5 or 8.5 mm abutment.

**Results:** Patients were classified into 3 groups: those with no significant soft tissue problems (795 patients), those that required additional soft tissue reduction but who continued to use the standard abutment (8 patients), and those requiring a longer abutment (88 patients). Even though the majority of BAHA patients were female, 70% of 88 patients who required a longer abutment were male. Of the longer abutment group at the primary surgery, 16% had complete graft failure, 14% had partial graft failure, and 27% had microbiologically confirmed infection. Of patients, 49% with soft tissue overgrowth underwent formal surgical reduction prior to placement of the longer abutment. As many as 4 surgical reductions were performed. Remaining patients were treated with topical therapy. After receiving the longer abutment, 98.8% of patients required no further surgery. Only 1 patient required further soft tissue reduction.

**Conclusions:** This study highlights the finding that early skin problems tend to beget soft tissue swelling which may later require revision surgery to address the soft tissue thickening and/or a longer abutment. About 10% of patients required the 8.5 mm abutment.

**Reviewer’s Comments:** This study does not tell us much about the risk factors for these soft tissue problems. Potential factors might include obesity and diabetes. Other potential factors include technique used to raise the skin flap and amount of soft tissue resected. Clearly, more data are needed to answer these questions. The study also does not tell us if there are any disadvantages to the longer 8.5 mm abutment such as a greater torque on the fixture putting the abutment at higher risk for the fixture becoming displaced.

**print tag:** () Refer to original journal article
New Tx for Hereditary Hemorrhagic Telangiectasia

Antiestrogen Therapy for Hereditary Hemorrhagic Telangiectasia: A Double-Blind Placebo-Controlled Clinical Trial.
Yaniv E, Preis M, et al:
Laryngoscope; 119 (February): 284-288

Tamoxifen is a promising new treatment for epistaxis in hereditary hemorrhagic telangiectasia patients resulting in decreased bleeding, increased quality of life, and improvement in telangiectasia.

Background: Hereditary hemorrhagic telangiectasia (HHT) is an autosomal-dominant disorder presenting with epistaxis in >90% of those afflicted with the condition. A plethora of treatments ranging from hormone medications to laser cauterization and various surgical interventions have resulted in varying degrees of success and impact on quality of life. No single procedure has emerged as the standard of care.

Objective: To evaluate the effect of tamoxifen on epistaxis in patients with HHT.

Design: Prospective, randomized study.

Participants: 25 patients with epistaxis due to HHT.

Methods: Patients were randomized to receive either a placebo or tamoxifen 20mg daily for 6 months. Patients were examined once monthly during the study with nasal endoscopy documenting epistaxis, telangiectasia, and nasal obstruction. They were asked to keep a daily record of epistaxis. Female patients received gynecologic ultrasounds each month.

Results: 9 of 10 patients on Tamoxifen experienced decreased severity and frequency of epistaxis by self report and endoscopy, a greater quality of life, and received no blood transfusions. Of patients, 7 had improvements in their telangiectasia. No significant improvement was noted in the placebo group.

Conclusions: Tamoxifen resulted in significant improvements in epistaxis frequency and severity as well as quality of life compared to placebo in patients with HHT.

Reviewer’s Comments: Although a rather rare disorder, HHT patients often frequent otolaryngologists for control of severe, intractable epistaxis for which there are a plethora of procedures - many of which are destructive to the nasal mucosa and cartilage. This initial study reports on a promising new treatment with tolerable side effects. Unfortunately, the study fails to mention if the examiner is blinded to the treatment and may therefore be subject to bias. Nonetheless, these early results warrant further investigation of tamoxifen in the treatment of epistaxis in HHT patients. Future studies should also evaluate the drug’s effect on telangiectasia in the gastrointestinal tract and arteriovenous malformations.

print tag: () Refer to original journal article
Primary Vs Secondary Tracheoesophageal Puncture After Chemoradiation

Objective: To compare results after primary and secondary tracheoesophageal puncture (TEP) in patients previously treated with chemoradiation.

Design: Retrospective review.

Participants: 30 patients undergoing total laryngectomy after chemoradiation.

Methods: Data were collected on factors impacting wound healing, postoperative complications, and time to fluent speech acquisition. In the primary TEP group, prosthesis was placed 3 to 4 weeks postoperatively. In the secondary group, puncture was completed 2 to 3 months postoperatively and prosthesis was placed 1 to 2 weeks later.

Results: The only complication that was significantly different between the groups was pharyngocutaneous fistula (PCF) with a rate of 50% in the primary and 0% in the secondary group. Median time to acquire fluent speech was 63 days for the primary group and 125 days for the secondary group. Additionally, even those with a postoperative PCF acquired speech more rapidly than those with a secondary puncture (75 versus 125 days).

Conclusions: Primary TEP was associated with higher incidence of PCF in patients previously treated with chemoradiation; however, no additional complications were noted. Despite the higher rate of fistulas, those undergoing primary puncture were able to regain fluent voice nearly 2 months sooner than their secondary counterparts.

Reviewer’s Comments: Consensus regarding optimal management of the salvage laryngectomy remains somewhat elusive. The question of primary versus secondary puncture is one controversy which remains unanswered. This series presents data that indicates a higher association between primary puncture and PCF. This could be an important consideration; however, it is very difficult based upon the methods employed to determine causation. Criteria used to decide between primary versus secondary puncture are not well defined, and as a result, it is difficult to determine whether there may be some unintentional selection bias. Authors indicate all patients in this series were able to successfully achieve transesophageal speech; but again, criteria used to judge successful voice acquisition are not defined. It is not clear at what point and how frequently voice was evaluated. Due to high risk of stricture in this population and postulated increase in risk for stricture-related voice complications in those with secondary puncture, it would be interesting to know when and how voice success was evaluated. In the chemoradiated patient, difficulties often develop over time, which may impact long-term voice success. It was found that patients undergoing secondary puncture had significant delays in acquisition of functional speech. Authors rightly question the impact this delay can have on quality of life. Certainly, patients have other communication options (e.g. electrolaryngeal speech) while awaiting secondary puncture; however, it is not clear how those patients might differentially participate in meaningful life activities. Future studies will need to evaluate whether such a delay has any functional or meaningful impact.

Additional Keywords: Larynx Cancer

print tag: () Refer to original journal article
Dysphonia: Genetics Vs Environment

Exploring Genetic and Environmental Effects in Dysphonia: A Twin Study.

Environmental influences play a more key role than genetics in development of dysphonia.

**Objective:** To compare genetic and environmental impact on development of dysphonia.

**Design:** Twin study.

**Participants:** 1728 Finnish twins born from 1961 to 1989.

**Methods:** Zygosity determination yielded 120 monozygotic (MZ) and 108 dizygotic (DZ) full twin pairs. Of participants, 555 were male and 1173 were female. All participants completed a questionnaire regarding 6 vocal symptoms. Information about occupation was also gathered to divide participants into voice-demanding and less voice-demanding occupations.

**Results:** Twin intra-class correlations were higher for the MZ twins than their DZ counterparts suggesting a genetic effect on development of dysphonia. Variations in dysphonia were attributed to genetics 35% of the time and non-shared environmental effects 65% of the time. Shared environmental effects played no role in development of dysphonia.

**Conclusions:** Presence of a genetic impact on development of dysphonia is evident, although environmental/voice use factors play a greater role in occurrence of dysphonia.

**Reviewer's Comments:** Previous twin studies have demonstrated voice characteristic similarities in monozygotic twins such as speaking fundamental frequency. Although they have suggested a genetic effect on voice characteristics, they have not accounted for genetic effects in dysphonia. It has been postulated that such genetic similarities of the larynx might predispose genetically similar individuals to similar laryngeal manifestations such as dysphonia. Susan Thibeault's work has demonstrated a genetic predisposition for specific laryngeal pathologies such as Reinke's edema, vocal fold polyps, and granuloma formation. Nelson Roy's epidemiological study of teachers with dysphonia has also supported either a genetic or shared environmental role in the development of dysphonia. This study sought to determine whether these findings are more suggestive of a genetic or environmental role in development of dysphonia. Their findings support the previously held notion of a genetic contribution to dysphonia, but further strengthen the case for the environment playing a large role in the development of voice disorders. Understanding the impact of both genetic and environmental factors influencing the development of voice disorders has important clinical relevance. Screening for voice disorders should include questions regarding both family history and voice use/occupation. Patients with a positive family history of dysphonia should be considered at-risk for potential voice problems. In the future, it may be interesting to evaluate whether those with positive family histories are at higher risk for repeated episodes of dysphonia. This could have broad implications for determining individual prognosis and treatment modalities. The importance of involving the voice therapist to ensure maintenance of good vocal hygiene and proper laryngeal technique would become paramount if this were the case.

**print tag:** () Refer to original journal article
Balloon Sinuplasty Can Be Used in Children with Refractory Sinusitis

Safety and Feasibility of Balloon Sinuplasty for Treatment of Chronic Rhinosinusitis in Children.
Ramadan HH:
Ann Otol Rhinol Laryngol; 118 (March): 161-165

Sinuplasty with balloon dilation may be a less invasive surgical option for children with refractory sinusitis.

Objective: To assess feasibility and safety of balloon sinuplasty for treatment of children with sinusitis that did not respond to medical therapy.

Design: Prospective non-randomized study of a surgical technique.

Participants: 30 children with sinusitis who had failed medical treatment which included allergy management, antibiotics, and systemic and intranasal steroids for 6 months.

Methods: Patients had documented sinusitis on CT scan after 3 weeks of oral antibiotic therapy. Children with complications of acute sinusitis or immune deficits (cystic fibrosis, ciliary abnormality, immunodeficiency) were excluded. Children underwent balloon catheter sinuplasty, with adenoidectomy if not already done, followed by sinus wash through the enlarged sinus ostium. Outcome measures were intraoperative success of dilation and number of procedure complications. Balloon sinuplasty was performed under endoscopic visualization over a guidewire, with position confirmed both endoscopically and with fluoroscopy. Irrigation was performed after dilation.

Results: 30 children, aged 4 to 16 years (mean age 8 years), were enrolled for balloon sinuplasty over a 16-month period. Of patients, 43% had adenoidectomy performed at the same anesthetic. Sinuplasty of 56 sinuses (48 maxillary, 6 sphenoid, 2 frontal) was planned. The procedure was feasible in 51 sinuses (91%). Of maxillary sinuses, 10 were hypoplastic, and 4 of these could not be treated with the balloon. No complications were seen. The average fluoroscopy time was 18 seconds per sinus (range 6 to 60 seconds), with a calculated average exposure of 0.18 mGy.

Conclusions: Balloon sinuplasty can be used in children with refractory sinusitis, with successful dilation of most of the sinus ostia without observed complication. Radiation exposure remains a concern, as well as the ability to address anatomic issues such as the hypoplastic maxillary sinus.

Reviewer's Comments: The role of sinus surgery for children who do not improve after medical treatment of sinusitis remains unclear. We search for an effective surgical approach that minimizes potential for facial growth abnormalities and scarring that can lead to subsequent chronic sinus issues such as mucocele formation. Dr. Ramadan has demonstrated that balloon sinuplasty in children can be performed safely in all and effectively in most children that he treated. This is obviously only the first step in the study of such surgery for children with sinusitis, as we must demonstrate the short and long-term benefits with regard to sinus ventilation and the relief of associated symptoms.

Additional Keywords: Pediatric

print tag: () Refer to original journal article
Drainage After Sistrunk Procedure Might Not Always Need More Surgery

Drainage Post-Thyroglossal Duct Remnant Surgery: Possible Source and Analysis.
Bakar SA, Martinez-Alvernia EA, Mankarious LA:
Otolaryngol Head Neck Surg; 140 (March): 343-347

Histologic studies show salivary tissue close to the hyoid bone, tissue that could be responsible for some cases of persistent drainage after Sistrunk resection of thyroglossal duct remnants.

Background: Drainage from the wound after the Sistrunk procedure for treatment of thyroglossal duct remnants is not uncommon and is often an indication for additional surgery. These authors investigate the possibility that such drainage is from transected nearby salivary tissue in some instances, rather than from residual thyroglossal duct tissue.

Objectives: To measure distance between tongue base salivary tissue and the hyoid bone in cadaveric specimens and to identify protein differences that distinguish between thyroglossal duct remnants and salivary tissue.

Design: Histological study of cadaver specimens and resected thyroglossal duct remnant tissue after Sistrunk procedure.

Methods: Distance between tongue base associated salivary tissue and the hyoid was measured in adult human cadaveric specimens. Immunohistochemistry was performed on 20 tissue blocks from children who had undergone Sistrunk procedure to identify amylase, markers for tracheobronchial mucin (MUC5AC), and markers for salivary mucin (MUC7).

Results: Distance between tongue base-associated salivary tissue and the hyoid bone was 3.3mm (range 1.0 to 4.2mm) in adult cadaver specimens. Analysis of the Sistrunk specimens found staining for amylase in thyroglossal duct remnants and adjacent salivary tissue. MUC5AC was found in the thyroglossal duct tissue of all specimens, but none of this tissue showed MUC7 staining. Adjacent salivary tissue stained for MUC7. Patients with postoperative drainage appeared more likely to have salivary tissue in the resected Sistrunk specimen than those without drainage (33% vs 14%), although this did not reach statistical significance.

Conclusions: Salivary tissue was demonstrated in close proximity to the hyoid bone. A marker for MUC5AC specifically stained thyroglossal duct tissue, while a MUC7 marker did not. Staining for amylase did not distinguish between the 2 tissue types.

Reviewer's Comments: Wound drainage after Sistrunk procedure is not a rare occurrence and the need for revision surgery remains at 3 to 4% even in large series from experienced surgeons. These authors hypothesized that adjacent salivary tissue could be responsible for some cases of post-Sistrunk drainage. They demonstrated the presence of adjacent salivary tissue in cadavers, and they provide groundwork for distinguishing between salivary tissue and thyroglossal duct cyst tissue with specific tissue markers. This study may lead to simple tests that help select patients who need additional resection for drainage after Sistrunk.

Additional Keywords: Surgical Complications
Preventing Polyp Relapse Following Sinus Surgery

Use of Mometasone Furoate to Prevent Polyp Relapse After Endoscopic Sinus Surgery.

Stjorne P, Olsson P, Ienius M:
Arch Otolaryngol Head Neck Surg; 135 (March): 296-302

Topical nasal steroids can extend the relapse time of polyp recurrence when used after sinus surgery.

**Background:** Nasal polyposis is an inflammatory disorder of the sinonasal mucosa. It is characterized by nasal obstruction and impairment or complete loss of smell. It is unclear whether topical nasal corticosteroids can reduce the recurrence rate of nasal polyps after patients undergo functional endoscopic sinus surgery (FESS).

**Objective:** To evaluate efficacy of mometasone furoate on preventing or reducing relapse of nasal polyp in patients that underwent FESS. Additionally, surgery related symptoms were monitored.

**Design:** Randomized, double-blind, placebo-controlled multicenter study.

**Methods:** Qualified subjects had been endoscopically diagnosed with bilateral nasal polyposis and underwent FESS. Patients either received mometasone furoate nasal spray, 200g once a day, or were placed in a placebo group 2 weeks post surgery. Time to relapse was measured on a 0 to 6 point endoscopic polyp scale. Relapse was defined by increments of 1 point on the polyp score.

**Results:** In the per-protocol population (n=104), median time to relapse was 61 days for those in the placebo group and 173 days for those in the mometasone group ($P =0.007$; hazard ratio [HR] 0.72, 95% confidence interval, [0.55 to 0.93]). In the intent-to-treat population (n=159), median time to relapse was 125 days for those in the placebo group and >175 days in the mometasone group ($P =0.049$; HR 0.79 [0.62 to 0.99]). Epistaxis was an adverse event that arose frequently. Total number of epistaxis cases reported during the course of this study was 3 in the placebo group and 6 in the mometasone group.

**Conclusions:** Patients with bilateral nasal polyposis that underwent FESS experienced a substantially prolonged time to relapse of nasal polyps when they were treated with 200g of mometasone per day compared to those that did not receive nasal corticosteroid treatment. This finding could be useful with inhibiting or delaying the time to consequent surgery in patients that undergo FESS.

**Reviewer's Comments:** Unlike the previous trials that showed equivocal findings in the effectiveness of topical nasal steroids after FESS, this report demonstrates clear efficacy in prolonging the time to polyp recurrence. The study has an appropriate washout period and some asthmatic patients who received inhaled corticosteroids (15 to 21%) were included in the study. Subjects were primarily those with limited polyp disease (score of 1). It's unclear therefore whether this study can be generalized to those with severe and refractory polyp disease.

**Additional Keywords:** Sinus Surgery

**print tag:** () Refer to original journal article
Medially Originating Inverting Papilloma

Medially Originating Inverting Papilloma.

Inverting papilloma arising from the septal or turbinate mucosa behaves less aggressively, and requires only endoscopic approaches.

Background: In a 2006 metanalysis covering >1000 patients, Busquet and Hwang showed that endoscopic resections have lower recurrence rates of 12% compared to 20% recurrence rates in the open approaches. The take home message from this report was that inverting papilloma (IP) can be taken piecemeal without the need for en-bloc resection and that endoscopic approaches are supplemented with simple open approaches such as Caldwell Luc. Dr. Lawson at Mt. Sinai in New York reiterates these messages in his case series of 200 patients that he has treated >30 years in an archive paper in March of 2009. This report is separately reviewed in this month's Practical Reviews. Another take home message from Dr. Hwang's report is that the site of origin of the IP is critical as well. It was imperative that the mucosal origin of the IP be addressed surgically to prevent recurrence. It is in this context that a group in Taiwan reports their findings in their management of IP among the Asian population.

Objective: To follow the clinical behavior IP as stratified by the site of origin.

Design: Retrospective study.

Methods: Patients were categorized by their IP as either medially originating (MOIP) or laterally originating (LOIP). MOIP are lesions that arise from the septum or the turbinate. LOIP are lesions that arise from the sinuses. Studied was a cohort of 83 IP patients in a single institution.

Results: In this case series, LOIP appeared to behave more aggressively as defined by recurrence rate. Recurrence rate was only 4% for MOIP while it was 11% for LOIP. When the site of origin was categorized for only T3 and T4 lesions, it was 20% for LOIP. Of LOIP, 25% required combined non-endoscopic approaches while no external approaches were required for the MOIP. From this series, the group recommended categorizing the T3 and T4 patients as MOIP or LOIP. Those that are T1, T2, or MOIP should be treated endoscopically. LOIP patients can be treated endoscopically, but may be prepared for combined approaches if necessary. One interesting finding was most of the recurrences occurred in IP that originated from the maxillary sinus.

Reviewer's Comments: Overall, this paper addresses the important issue of mucosal origin of IP. Dr. Hwang's meta-analysis emphasized the need to remove the mucosa of origin of IP to reduce recurrence. This report reiterates this imperative. Compared to other series, this is a limited number of patients, but it still re-emphasizes this principle of IP management. It can be argued that MOIP are actually Krouse T1. However, as most rhinologists are aware, the site of origin can only be determined during the excision.

print tag: () Refer to original journal article
**Bone Anchored Hearing Aids an Option for Patients With Single-Sided Deafness.**

*Efficacy of the Bone-Anchored Hearing Aid for Single-Sided Deafness.*


Bone anchored hearing aids improve Hearing in Noise Test scores when speech is delivered to the deaf ear. However, hearing does not improve to normal levels.

**Background:** A bone-anchored hearing aid (BAHA) is a surgically implanted titanium post that allows delivery of sound to the inner ear using vibration. This device has been FDA approved for single sided deafness since 2002. Short-term benefits of BAHA have previously been documented using the hearing in noise test (HINT). However these studies have also demonstrated that the advantage of the BAHA depends on the direction from which the noise originates. Although BAHA improved the HINT score when noise as delivered to the better hearing ear, the score was worse when noise was delivered to the side of the BAHA.

**Objective:** To measure hearing results in BAHA patients at intervals between 1 and 12 months after activation.

**Design:** Prospective investigation.

**Participants:** 7 patients were included in the data analysis. Mean patient age was 49.7 years, and mean duration of deafness was 7.4 years. There was also a control group which included 20 subjects of mean age 33.5 years.

**Methods:** Outcome measures included HINT with the ability to lateralize either speech or noise to the affected ear, the Abbreviated Profile of Hearing Aid Benefit (APHAB) and the Single Sided Deafness Questionnaire (SSD). Measures were assessed at 1, 6, and 12 months.

**Interventions:** BAHA using a 3.5mm titanium fixture.

**Results:** Outcome of the HINT test in the unilateral deafness patients was never as good as control subjects. However, BAHA improved the HINT score in patients when speech was delivered to the side. Timing of testing was not found to be a significant factor. Evaluation using APHAB and SSD questionnaires demonstrated a benefit of BAHA for both which did not change over time.

**Conclusions:** This study failed to find an effect of time on BAHA benefit. Thus, long term benefits of BAHA seem to be similar to that previously reported by others for the short term benefit. The authors of the study were not certain if this finding was only due to the small sample size of BAHA patients.

**Reviewer's Comments:** Based on these results I think BAHA should be recommended to patients with single sided deafness. Although the BAHA device does not provide 'normal hearing' it provides significant benefit in a population of patients with few alternative options. Single-sided deafness patients are not candidates for traditional hearing aids and although contralateral routing of sound hearing aids are an option, these devices are often poorly tolerated by patients because it requires them to wear a hearing aid in their normal hearing ear.

**Additional Keywords:** Single Sided Deafness
Predicting Postoperative Pain After ENT Surgery

Prevalence and Predictors of Postoperative Pain After Ear, Nose, and Throat Surgery.
Sommer M, Geurts JWJM, et al:
Arch Otolaryngol Head Neck Surg; 135 (February): 124-130

Preoperative pain, expected pain, fear of pain, and pain catastrophizing history may predict unacceptable level of pain postoperatively.

Background: Postoperative pain management is a vital part of perioperative care, but the ability to improve and control it has yet to be defined in otolaryngology.

Objectives: To determine prevalence of postoperative pain in different types of ear, nose, and throat (ENT) surgeries, to uncover determinants that could predict postoperative pain in individuals, and to classify postoperative pain in various types of ENT surgeries.

Methods: 217 adult patients undergoing ENT surgery were selected. A visual analog scale (VAS) was used to assess postoperative pain for all ENT, neck, and salivary gland surgery. Both same-day admission surgery and ambulatory surgeries were included. A VAS score of 40mm (out of 100mm) was deemed unacceptable pain control. VAS was also utilized to evaluate 14 somatic and psychological preoperative predictors for postoperative pain.

Results: On day 1, 50% of patients that underwent ENT surgery had a VAS score >40 mm. Patients that underwent surgery of the oropharyngeal region had a continuously high VAS score throughout all 4 days. Of patients, <30% that underwent endoscopic procedure had a VAS pain score >40 mm. In addition, <20% of patients that underwent otologic or nasal surgery had a VAS pain score >40 mm. A bivariate analysis demonstrated a predictive value for 6 key variables: age, sex, short term fear, expected pain, preoperative pain, and pain catastrophizing. Anatomical site of operation, preoperative pain, and pain catastrophizing were proven to be independent predictors by multivariate analysis.

Conclusions: The present study demonstrates differences in postoperative pain depending on type and anatomical site of ENT surgery. Of variables, 3 of 6 tested were shown to be useful in predicting rate of postoperative pain following ENT surgery.

Reviewer's Comments: It is clear that tonsillectomy is followed by severe postoperative pain, but the postoperative pain level for other common otorhinolaryngological surgeries is not clearly defined. One problem with this report is the lofty goal of categorizing various ENT surgeries into 5 different anatomic subsites. Therefore, there is considerable sample bias in this report. From this report, otologic surgeries and nasal (including reconstructive surgeries and FESS) procedures have acceptable pain levels postoperatively. Predictably, oropharyngeal surgical patients still had high pain levels postoperatively, even >4 days. Surprisingly, endoscopic procedures for upper aerodigestive tracts had significant postoperative pain levels >40mm for several days after the procedure. Another message from this report is that preoperative history of pain, fear of pain, and pain catastrophizing may be critical in the appropriate management of our patients.

Additional Keywords: Pain Control

print tag: () Refer to original journal article
Thyroglossal Tract Remnant: Diagnosis and Treatment

The Imperative of the Sistrunk Operation: Review of 160 Thyroglossal Tract Remnant Operations.

Hirshoren N, Neuman T, et al:

Otolaryngol Head Neck Surg; 140 (March): 338-342

Suspected thyroglossal tract remnant can be assessed with ultrasound and treated with formal Sistrunk procedure.

Background: Thyroglossal tract remnant (TTR) is a term used to refer to an epithelial trace and associated remnants of thyroid tissue that is left behind as the thyroid gland descends into its correct position during fetal development. Consequently, thyroglossal duct cysts can form. Standard treatment for TTR is surgical excision.

Objective: To evaluate the pre- and postoperative aspects of TTR as well as any resulting complications that may occur and long-term patient follow-up.


Methods: Average age at diagnosis was 10.9 ± 1.2 years and it was primarily observed in males (63.8%). Of patients, 70% had a prior history of TTR infections and 30% had cutaneous fistulas. Most patients had cysts in the infrathyroid region (66.7%) and were discovered by ultrasound imaging. Cysts of 18 patients were screened for tumorigenicity by preoperative fine-needle aspiration. All 18 were benign. Pathological re-evaluation showed thyroid tissue inside the remnant in 26.5% of patients including 1 subject that had a papillary carcinoma. There were complications reported in 7.5% of patients that had undergone a Sistrunk operation; there was also a 1.9% recurrence rate.

Results/Conclusions: The authors noted that an ultrasound is adequate for imaging TTR infections. The various age groups tested here had comparable data. The authors were able to show that it is necessary to remove the cyst and tract to avoid recurrence in individuals that must undergo surgery. Data presented here also illustrated that patients diagnosed with TTR may in fact have some other pathologic condition (10% of cases). Lastly, the authors suggest that a Sistrunk procedure should be performed on all midline neck lesions that are allegedly a thyroglossal tract remnant.

Reviewer's Comments: This is succinct review of thyroglossal duct cyst. The authors would like to change the common terminology of thyroglossal duct cyst to thyroglossal tract remnant (TTR). Literature supports their claim that these clinical cysts are found to be ducts or fibrous tracts on final path. As a whole, 7% of the population may have TTR which makes it a common congenital anomaly. TTR accounts for 70% of all congenital lesions. From their series, 80% of the group were in the pediatric population, but other literatures cite that one-third of TTR present as adults. For non-cystic masses that are clinically suspicious as TTR, thyroid carcinoma should be considered in the differential, despite its rarity. The authors recommend Sistrunk operations for all suspected TTR despite the fact that this may be an overtreatment in 10% of the cases.

Additional Keywords: Sistrunk Operation

print tag: () Refer to original journal article
Pillar Implants May Work in Certain Pts

Effectiveness of Pillar Palatal Implants for Snoring Management.

Gillespie BM, Smith JE, et al:
Otolaryngol Head Neck Surg; 140 (March): 363-368

Pillar implants for snoring work best for those with low apnea-hypopnea index, Friedman tongue position class I or II, and men. Placement under local anesthesia has lower complication rates.

Background: The Pillar system is a minimally invasive implant that stiffens the soft palate to reduce the flutter that commonly causes snoring and upper airway obstruction in people that experience mild to moderate sleep apnea.

Objective: To ascertain factors linked to improvement and complications of using the Pillar palatal implants.

Design: Retrospective study.

Methods: Between January 2005 and December 2007, 79 patients who received Pillar implants for snoring were selected to participate in the study. To assess factors correlated with efficacy, surveys of patient's bed partner approval of the snoring were completed and a multiple regression analysis was performed. In addition, the authors investigated Pillar-related complications.

Results: Following Pillar implantation, 81% of bed partners noted an improvement in the patient's snoring but only 39% of those bed partners were content with the level of snoring reduction. For those that were dissatisfied with the initial results, patients underwent additional snoring procedures. At the completion of the procedures, a secondary follow up illustrated that bed partner satisfaction had increased to 52 (66%). It was determined that a shorter follow-up time ($P < 0.001$), a lower initial apnea-hypopnea index (AHI) ($P < 0.029$), and Friedman tongue position (FTP) I or II ($P = 0.008$) aided final bed partner satisfaction. Surprisingly, 20% had implant associated complications. Women had a substantially higher complication rate ($P < 0.001$) compared to men. There was also a higher Pillar complication rate when the implant was placed under general anesthesia ($P = 0.009$).

Conclusions: The authors concluded that FTP scores and AHI values play key roles in determining the final scoring success of the Pillar palatal implants. Additionally, there appears to be a higher risk of poor positioning and extrusion when Pillar implants were placed in women and under general anesthesia.

Reviewer's Comments: Pillar implants are FDA approved for snoring reduction, but this report presents timely findings on its effectiveness and complications. Since it is difficult to measure snoring, the authors used a "yes or no" satisfaction survey to be completed by the bed partners. Such "quick and dirty" surveys may lack validations and ability to be generalized, but in the context of a subjective response by the bed partner, it may offer the best measurement device. Although the company may claim 80% success rate, the satisfaction survey from the bed partner was much poorer: near 40%. Even after secondary procedures, the satisfaction rate jumped up to 60%. For those currently using Pillar implants, patients should be informed of the 20% complication rate. Lastly, this report shows good retrospective data that Pillars work best for those with low AHI, FTP class I or II, and men. Placement under local anesthesia has lower complication rates.

Additional Keywords: Snoring

print tag: () Refer to original journal article
Assessment of Blunt Head Trauma: Maxillofacial Vs Temporal Bone CT

Acute Radiographic Workup of Blunt Temporal Bone Trauma: Maxillofacial Versus Temporal Bone CT.

Dempewolf R, Gubbels S, Hansen MR: Laryngoscope; 119 (March): 442-448

Maxillofacial CT scan can detect carotid canal fractures and may preclude the need for temporal bone CT when there are no gross clinical history and signs of middle fossa injury.

Background: Temporal bone computed tomography (TB CT) is not routinely used in practice but many promote its use when clinicians screen for carotid canal fractures.

Objectives: To compare maxillofacial computed tomography (MF CT) with TB CT for its effectiveness in identifying carotid canal fractures and to examine the radiographic workup of the patient with blunt temporal bone trauma.

Design: Retrospective review.

Methods: Findings for acute temporal bone trauma and any subsequent complications were noted. To measure MF CT’s ability to recognize carotid canal fractures, the specificity, sensitivity, negative predictive value (NPV) and the positive predictive value were contrasted with TB CT.

Results: There were 144 fractures found. Blood observed in the external auditory canal was normally associated with an absence of carotid canal fractures. On the other hand, blood found in the external auditory canal coupled with hemotympanum was frequently an indication of carotid canal fracture. In comparison to TB CT, the specificity and sensitivity of MF CT was 94.4% and 90.3% respectively. The NPV was >95%. Patient management should have changed or did change based on TB CT findings in 6% of patients. These cases were the result of further workup for vascular injury.

Conclusions: The authors concluded that MF CTs are sufficient for locating carotid canal fractures. Cases in which MF CTs are not indicated, high resolution CT scans in conjunction with physical exams are adequate for use of TB CTs. Additionally, TB CTs infrequently change management in the acute setting; however, in the event that it does, the physician must rule out potential blunt vascular injury.

Reviewer’s Comments: In the context of blunt head trauma, evaluation with TB CT scan for suspected skull base fracture is controversial. Given its higher resolution, TB CT is the gold standard to evaluate any injury to the carotid canal. The authors evaluated whether MF CT scan is sufficient to evaluate carotid canal fractures and found adequate sensitivity and specificity in detecting carotid canal fracture. This study mirrors previous retrospective studies showing that carotid artery injury can present with no gross clinical findings (massive epistaxis or hematemesis), and should either MF or TB CT show carotid canal fractures, angiography should be pursued. From a clinical standpoint, this report supports the use of MF CT only when already obtained for facial injuries. Should clinical signs dictate middle fossa or carotid canal fracture without facial injuries, TB CT may still be the preferred test.

Additional Keywords: Skull Base Fracture

print tag: () Refer to original journal article
PET, CT Scans May Be Useful in Assessing Induction Chemotherapy

Background: Functional imaging is an emerging field that has allowed physicians to evaluate responses to oncologic treatments.

Objective: To compare efficacy of 2 methods selected for approximating tumor volume reduction in patients treated with induction chemotherapy for advanced squamous cell carcinoma (SCC) of the oropharynx.

Design: Prospective, phase II trial.

Methods: 12 patients with oropharyngeal SCC were selected. The prospective nature of the study was possible due to that fact this study was nested in a larger prospective phase II organ preservation trial at Michigan. For previously untreated head and neck squamous cell carcinoma (HNSCC) patients, induction chemotherapy consisted of 1 cycle of either cisplatin or carboplatin, followed by 5-flourouracil (FU) for 5 days. Tumor volume reduction in these patients was evaluated by operative endoscopy with biopsy, noninvasive fluorine-18-fluorodeoxyglucose emission tomography (FDG-PET), and computed tomography (CT). Using operative endoscopy and biopsy as gold standard, FDG-PET and CT scan was used to assess chemotherapy responsiveness.

Results: In 9 patients, both methods calculated the same approximation of tumor reduction. Unfortunately, 1 patient was inaccurately assessed using FDG-PET and 2 subjects had conflicting findings. Kappa values for PET and CT versus endoscopy were 0.62 and 0.40 and were categorized as substantial agreement and fair agreement respectively.

Conclusion: The data presented here illustrates the potential efficacy of FDG-PET in estimating tumor volume reduction in addition to induction chemotherapy as their values were similar to that of endoscopy with biopsy under general anesthesia.

Reviewer's Comments: Induction chemotherapy treatments for non-laryngeal SCC are currently being studied in many centers, but one significant barrier to induction regimens is the determination of "response." At Michigan, it is operative endoscopy and biopsy, which is notable since an operative intervention which may be clinically unnecessary and may be met with strong Institutional Review Board resistance for obvious reasons. A non-operative assessment that can determine "responsiveness" to induction chemotherapy may be useful. In this context, this study suggests that PET scan can substantially correlate with surgical endoscopy and biopsy. The obvious criticism is that quantitation of PET signal is semi-quantitative at best, and the use of standard uptake value (SUV) or any variation of SUV suffers from the same limitation. Second, surgical endoscopy as the gold standard measures the tumor in 2 dimensions by an individual, and many would argue that it may not be the "gold standard." Regardless, the authors do show that PET and CT scans may be an alternate non-invasive means to assess induction chemotherapy. It would be interesting if use of PET-CT scan methodology can improve upon the correlation with surgical biopsy. Also, the authors do point out the limitation of PET scans for oropharynx, since there are significant false positive FDG-PET uptakes in the lymphoid tissues of the Waldeyer's ring.

Additional Keywords: Tomography

print tag: () Refer to original journal article
Management of Inverted Papilloma Has Changed Over the Years

The Evolution of Management for Inverted Papilloma: An Analysis of 200 Cases.
Lawson W, Patel ZM:
Otolaryngol Head Neck Surg; 140 (March): 330-335

Management of inverted papilloma has evolved from mostly open to largely endoscopic and endoscopic-assisted approaches.

**Background:** The surgical treatment for inverted papilloma (IP) has evolved over the past few decades from purely open approaches to largely endoscopic or endoscopic-assisted approaches.

**Objectives:** To present the largest case series of IP to date and comment on the evolution of management, both at their institution and in the literature at large.

**Design:** Case series study.

**Methods:** 200 patients treated by the senior author at a single institution between 1973 and 2008 were evaluated, the first 160 of which were previously reported in 2001. Median follow-up period was 4.6 years. Nasal obstruction was the presenting symptom in 60% of cases. Of patients, 55% were referred after having prior sinonasal surgery. Tumor origin and staging was not established for the first 160 cases, while the most recent 40 cases originated largely from the ethmoid (48%) and maxillary (28%) sinuses. Using the Krouse staging system, most patients presented with either T3 (63%) or T4 (25%) disease. Method of treatment was compared for the original 160 cases versus the most recent 40 cases.

**Results/Conclusions:** Lateral rhinotomy was performed in 70% of the first 160 cases, while endoscopic approaches with or without Caldwell-Luc, were used in 26%. Recurrence rates were 16% and 12%, respectively. Of the last 40 cases, 43% were resected with a purely endoscopic approach, with the remaining 53% resected with endoscopic-assisted approaches performed in combination with open techniques, including lateral rhinotomy, medial maxillectomy, trephination, Caldwell-Luc, or osteoplastic flap. Overall recurrence rate was 13% with an average interval to recurrence of 40 months (range 8 to 144 months). Of all patients, 7% developed carcinoma.

**Reviewer's Comments:** This report by Lawson and Patel represents the largest case series of its kind in the literature. While 160 of the 200 cases had been previously reported, it does serve to document the evolution of treatment practice for IP over the last 4 decades, a fact pointed to specifically by the authors. Certainly, endoscopic and endoscopic-assisted approaches have become standard practice over recent years, assisted by diagnostic imaging techniques that can often facilitate preoperative planning. Most importantly, the authors compare the current study to other case series and meta-analyses in the literature, and note similar recurrence and malignancy rates for patients treated endoscopically and non-endoscopically. This consistency leads the authors to advocate the use of endoscopic approaches when possible for IP, which current literature suggests is possible in 43 to 66% of cases. The addition of adjuvant external approaches should be made on a case by case basis, based on variables such as anatomic variation secondary to primary surgery, advanced stage, and associated malignancy.

**Additional Keywords:** Endoscopy

**print tag:** () Refer to original journal article
Questions Still Remain for Central Neck Dissection in Tx of Thyroid Cancer

Systematic Review and Meta-Analysis of the Adverse Effects of Thyroidectomy Combined With Central Neck Dissection as Compared With Thyroidectomy Alone.

Chisholm EJ, Kulinskaya E, Tolley NS:
*Laryngoscope*; (April): Epub ahead of print

Central neck dissection for differentiated thyroid carcinoma shows no permanent morbidity.

**Background:** The role of central neck dissection for differentiated thyroid carcinoma is controversial. Douglas Evan strongly argues in favor of prophylactic central neck dissection (CND) to reduce the rate of recurrence in the level VI compartment. This rate can be as high as 30%. Opponents cite the fact that cervical neck metastasis does not affect overall survival, so they stand firm against prophylactic neck dissection. The National Comprehensive Cancer Network guideline recommends ultrasound evaluation and qualifies it by stating that there is only level 2B data to recommend ultrasound to look for cervical neck disease. Prophylactic central neck dissection is still not standard of care. One worry of prophylactic central neck dissection is potential postoperative morbidity. This paper addresses this issue.

**Objective:** To evaluate the literature for potential complications associated with central neck dissection for thyroid disease.

**Methods:** A meta-analysis of 5 reports that compared morbidities associated with thyroidectomy with CND versus thyroidectomy alone was performed. Inclusion criteria were either retrospective or prospective trials comparing thyroidectomy versus thyroidectomy with CND for all thyroid disease. Excluded were pooled outcomes analyses, lateral neck dissection, revision operations, or endoscopic surgeries. Meta-analysis was performed with Mantel-Haenszel method.

**Results:** After screening, only 5 reports met the criteria which comprised a total of 1132 patients. These included both goiters, well differentiated thyroid cancers, as well as other thyroid cancers. From these 5 reports, there was no associated risk of permanent hypocalcemia. There were statistically significant temporary hypocalcemia in the CND group. There was a tendency to higher vocal cord palsy in the CND group, but the increased risk did not meet statistical significance.

**Conclusions:** The authors note no significant complication rate that comes from performing prophylactic CND with thyroidectomy.

**Reviewer’s Comments:** Interestingly, this paper reiterates Doug Evan’s reports that cite higher rates of temporary hypocalcemia for patients who undergo CND. Of course, what is not clear from this meta-analysis is the degree of CND. It is not clarified in the inclusion criteria whether a complete CND is completed in these 5 reports, or whether node plucking is performed. They do not specify the total number of lymph nodes from the path reports. The superior parathyroids can be easily spared from vascular injury with CND, but the vascular pedicle to the inferior parathyroids is at significant risk. Does each of the reports identify these vascular pedicles? It is not clear. The other practical and critical issues are time and insurance. How long does the CND add to the operative time? Will the insurance company pay for the CND?

**Additional Keywords:** Central Neck Dissection

**print tag:** () Refer to original journal article
Pts May Show Improved Olfactory Function After Sinus Surgery

Does Olfactory Function Improve After Endoscopic Sinus Surgery?
Litvack JR, Mace J, Smith TL:
Otolaryngol Head Neck Surg; 140 (March): 312-319

Severity of olfactory dysfunction and the presence of nasal polyposis are predictors of postoperative improvement of olfactory function following endoscopic sinus surgery.

Background: Olfactory dysfunction affects a majority of patients with chronic rhinosinusitis (CRS), and is one of the 4 signs and symptoms used to diagnose the disorder. Yet, the literature contains scant objective data detailing the impact of endoscopic sinus surgery (ESS) on olfactory function.

Objective: To assess the impact of ESS on olfactory function.

Design/Participants: Multi-institutional, prospective cohort study of 111 patients carrying a diagnosis of CRS based on Rhinosinusitis Task Force criteria, who had failed maximal medical management and subsequently agreed to undergo ESS.

Methods: Olfactory function was assessed using the Smell Identification Test (SIT), a commercially-available, 40 question, forced-choice measure of olfactory function.

Results/Conclusions: At baseline, 32.4% were normosmic, 50.5% were hyposmic, and 17.1% were anosmic. After ESS, anosmic patients showed significant improvement in SIT scores at 6-month (21.3 vs 9.7) and 12-month (21.7) follow-up. No changes in mean SIT scores were observed for hyposmic patients or normosmic patients. Nasal polyposis appeared to play a significant role in response to therapy, with postoperative anosmic patients with nasal polyps showing significant improvement (13.9 vs 9.4), while anosmic patients without polyposis showed no improvement (6.6 vs 10.8). Use of systemic or topical corticosteroids was not a significant cofactor in mean SIT scores for any olfactory group. Multivariate linear regression analysis defined baseline olfactory status and nasal polyposis as significant predictors of improvement in SIT scores. Conversely, age, gender, corticosteroid use, asthma, allergic rhinitis, tobacco use, aspirin intolerance, preoperative CT and endoscopy scores, and prior sinus surgery were not significant predictors of improvement.

Reviewer's Comments: The authors of the current study specifically note use of subjective measures of olfaction and short-term follow-up (usually 6 months) as deficits of prior studies. Nonetheless, the study by Litvack, Mace, and Smith adds limited new information to the >10 studies in the literature that examine the effect of ESS on olfaction. It does show that patients with more severe olfactory dysfunction are more likely to undergo substantial improvement after ESS than those with moderate hyposmia. Primary utility of this information would likely be for the purposes of counseling patients preoperatively. Identification of nasal polyposis as a predictor of better postoperative olfactory outcomes is in agreement with other studies in the literature. The study makes a point of excluding multiple variables as significant predictors of postoperative olfactory status. Yet, the authors do point out that the power of the current study does not allow for relationships between these variables and olfactory outcome to be adequately determined. Any conclusions drawn from this particular data should therefore be questioned.

Additional Keywords: Endoscopic Sinus Surgery Nasal Polyposis

print tag: () Refer to original journal article
Transoral Excision of the Submandibular Gland

Transoral Excision of the Submandibular Gland: Techniques and Results of Nine Cases.
Kauffman RM, Netterville JL, Burkey BB:
Laryngoscope; 119 (March): 502-507

Transoral excision of the submandibular gland is both safe and effective.

Background: Surgical resection of the submandibular gland is a common procedure performed by the Otolaryngologist-Head and Neck Surgeon. Possible morbidities chiefly include injury to the lingual nerve, hypoglossal nerve, and marginal mandibular branch of the facial nerve. Classically, submandibular gland excision has been performed via a transcervical approach, necessitating an external scar.

Objective: To report on a transoral technique for excision of the submandibular gland.

Design/Participants: Retrospective review of 9 patients who underwent transoral submandibular gland excision at a single tertiary care academic center over the last 10 years.

Methods: Each case was examined for age, indication, complications, length of hospital stay, and postoperative pathology. Of cases, 7 were performed in 2007 or after, with an average patient age of 40 years.

Results/Conclusions: Average length of stay was 2.4 days, with 5 patients going home on the day of surgery. Of operations, 8 were treated successfully transorally, with 1 being converted to an external approach secondary to a large sialolith. Of patients, 6 presented with chronic sialadenitis, 3 of which had obstructing sialoliths. The remaining 3 patients presented with benign cystic lesions including a ranula, infected mucocele, and a cystic teratoma. Postoperatively, no complications involving the lingual nerve, hypoglossal nerve, or marginal mandibular nerve were observed. There were no hematomas or other hemostatic complications. Of patients, 2 complained of a change in lateral tongue sensation, both of which resolved within 6 weeks. One patient did have floor of mouth incision breakdown and delayed wound healing (although this patient had undergone previous head and neck surgery with chemoradiation).

Reviewer's Comments: Transoral excision of the submandibular gland was first described almost 50 years ago, yet the common transcervical approach remains the standard of care and has proven both safe and effective. Kauffman et al present a small case series detailing the successful excision of the submandibular gland via intraoral approach, with minimal complications. Few similar case series exist in the literature, although those that have been previously reported contain a considerably larger number of patients. The current study and previously reported series point to a lack of external incision, decreased risk of orocutaneous fistula, and reduced risk to the marginal mandibular nerve as the chief advantages of this approach. Most purported disadvantages are technical in nature, with increased difficulty controlling the vascular pole of the gland, potential for more manipulation of the lingual nerve, and altered surgical anatomy being perhaps the most important. The authors recommend this technique for a select group of patients with non-malignant salivary gland disorders. As minimally invasive surgical approaches become the therapy of choice for many patients, this procedure will likely become more commonplace in years to come.

Additional Keywords: Submandibular Gland

print tag: () Refer to original journal article