Algorithm for Planning Pediatric Tracheostomy Decannulation

Role of Polysomnography in the Development of an Algorithm for Planning Tracheostomy Decannulation.
Robison JG, Thottam PJ, et al:


Capped polysomnography offers additional clinical information to assist in the decision-making algorithm to decannulate a tracheostomized pediatric patient.

Background: Pediatric tracheostomy patients often have numerous medical comorbidities that complicate the decision-making process in decannulation.
Objective: To report on the role of polysomnography (PSG) in developing an algorithm for safe decannulation in pediatric tracheostomy patients.
Design: Retrospective chart review.
Methods: The charts of tracheostomy patients at a tertiary care pediatric center undergoing capped PSG as workup for decannulation between 2006 and 2012 were reviewed. Apnea-hypopnea index (AHI) was used to classify the severity of obstructive sleep apnea (OSA). Normal OSA was AHI <1.5, mild OSA was AHI 1.5 to 4.9, moderate OSA was AHI 5.0 to 9.9, and severe OSA was AHI >10.0.
Results: There were 28 patients in the study. A total of 20 patients underwent decannulation; of these, 1 had no OSA, 17 had mild, 2 had moderate, and 0 had severe OSA. Eight patients did not undergo decannulation; of these, 1 had mild, 3 had moderate, and 4 had severe OSA. Mean AHI for patients who underwent decannulation was 2.75, and mean AHI for those who did not undergo decannulation was 15.99. Of 4 patients who did not undergo decannulation despite having mild or moderate OSA, 1 had an anticipated need for further surgical procedures and 3 had neuromuscular disorders. One patient who underwent decannulation required repeat tracheostomy 15 months later due to progressive obstructive symptoms. This patient had a history of Down syndrome, left vocal fold paralysis, and inability to tolerate continuous positive airway pressure.
Conclusions: PSG performed prior to decannulation can identify tracheostomized pediatric patients with severe OSA who are unlikely to benefit from decannulation.
Reviewer's Comments: The authors propose a clinical pathway for decannulation incorporating PSG to be conducted after favorable clinical evaluation of the upper airway with endoscopy and uneventful daytime tracheostomy capping. Patients showing mild to moderate OSA are then observed in an ICU setting for decannulation monitoring. The potential advantage of this approach is that patients with severe OSA are spared the costs and morbidity associated with an ICU admission for capped tracheostomy O2 monitoring. On the other hand, one can also argue that patients with pre-existing severe OSA are highly likely to show desaturations during a capped monitoring trial in the ICU, which circumvents the need for a PSG in the first place. Overall, this appears to be a preliminary study with a small number of patients and lack of a control group, which may not be feasible due to ethical considerations (it may be clinically unadvisable to proceed with decannulation after a PSG finding of severe OSA in a pediatric patient). (Reviewer-Zhen Gooi, MD).

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Keywords: Tracheostomy, Obstructive Sleep Apnea, Polysomnography, Decannulation

Print Tag: Refer to original journal article
Prognostic Factors for Parotid Gland SCC

Chen MM, Roman SA, et al:

Head Neck 2015; 37 (January): 1-7

Patients undergoing surgery for parotid squamous cell carcinoma are shown to have a better prognosis than those not undergoing any treatment or radiotherapy only.

Background: Squamous cell carcinoma (SCC) of the parotid gland is an uncommon yet aggressive malignancy that has only thus far been studied at a single-institution level.

Objective: To describe the epidemiologic, clinical, and prognostic factors for parotid SCC at a population-based level.

Methods: Analysis of the Surveillance, Epidemiology, and End Results database from 1988 to 2009. ICD-9 codes for parotid gland and SCC were used to identify patients. Various pathologic, treatment, and clinical variables were studied, and disease-specific survival (DSS) was the prognostic factor of interest.

Results: 2104 patients were identified, with parotid SCC ranking as the second most common malignancy after mucoepidermoid carcinoma. Mean patient age was 73.1 years, 80% were men, and there was a 1.7% annual increase in incidence during the study period. Of the patients, 23% were treated exclusively with surgery and were more likely to be older (mean age, 75.4 vs 71.2 years; \( P < 0.001 \)). A total of 49% of patients had adjuvant radiotherapy in addition to surgery and more frequently had extraparenchymal extension of tumor (58.8% vs 51.7%; \( P = 0.01 \)) and neck metastases (58.3 vs 47.1; \( P < 0.001 \)) than those having surgery alone. The 5-year DSS for American Joint Commission on Cancer (AJCC) staging I, II, III, and IV was 86.5%, 78.1%, 82.4%, and 62.8%, respectively. On univariate analysis, factors associated with increased odds of disease-specific mortality included age >85 years, tumor size >4 cm, extraparenchymal extension, and cervical lymph node and distant metastases. The 5-year DSS for patients having surgery was almost twofold that of patients not having surgery (71.0% vs 44.4%; \( P < 0.001 \)). Treatment with radiation did not alter 5-year DSS significantly compared to no treatment (47.0% vs 41.6%; \( P = 0.28 \)).

Conclusions: The incidence of parotid SCC is increasing. Advanced age (>85 years) and tumor size >4 cm are associated with reduced DSS, but treatment with surgery is associated with increased DSS.

Reviewer’s Comments: This study adds to the existing literature by examining parotid SCC at a population-based level. By limiting the studied patients to those having concurrent ICD-9 codes for the parotid gland and SCC, the authors assert that these cases were true primary parotid SCCs as opposed to metastases. There is, however, a fair likelihood that this assumption is not true due to coding errors and the time lag in presentation of skin to parotid metastases. In addition, the authors did not identify the proportion of patients within the study who also had concurrent ICD-9 codes for SCC of the head and neck region. The figures on DSS according to AJCC staging were also only based on available data from 2004 to 2009. Nevertheless, this study offers valuable insights on the prognostic factors for parotid SCC. (Reviewer-Zhen Gooi, MD).

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Keywords: Parotid, Squamous Cell Carcinoma, SEER Database, Prognosis, Survival, Treatment

Print Tag: Refer to original journal article
Benefit of Elective Neck Dissection in Salivary Gland ACC


Lee SY, Kim BH:

Head Neck 2014; 36 (December): 1796-1801

Although a node-positive status is associated with a poorer prognosis in adenoid cystic carcinoma, there is no difference in overall survival following elective neck dissection performed for clinically node-negative patients.

**Background:** There exists an ongoing debate on the benefits of routine elective neck dissection in adenoid cystic carcinoma (ACC).

**Objective:** To describe the rate of nodal metastases and survival in a cohort of patients treated surgically for ACC.

**Design:** Retrospective review of the records of patients who had surgical resection for ACC of either major or minor salivary glands.

**Methods:** Management of the neck in these patients was observation, elective, therapeutic neck dissection, or radiation. Outcomes of interest included overall survival (OS) and occurrence of neck and distant metastases.

**Results:** There were 61 patients with a mean follow-up period of 58 months. Four patients underwent therapeutic neck dissection for clinically node-positive (N+) disease, of whom 3 were proven to have subsequent pathologic confirmation. A total of 26 patients with clinically node-negative (N-) status underwent elective neck dissection; of these patients, 4 were shown to have occult nodal metastases (15.4%). There was no recurrent neck disease in the remaining 22 patients during follow-up. In a subset of 31 patients with clinically N- status who did not undergo elective neck dissection, 4 subsequently developed neck metastases. Mean latency of neck metastases was much shorter in ACC cases involving minor compared to major salivary glands (11 vs 64 months). Distant metastases developed in 22 patients with a mean latency of 34 months. There were no significant differences in histologic subtype of ACC between N+ and N- patients. OS for patients with N- status at 5 and 10 years was 85% and 81%, respectively. In N+ patients, however, OS was lower at 5 and 10 years at 57% and 28%, respectively.

**Conclusions:** There exists a 15.4% rate of occult neck nodal metastases in ACC of the head and neck region, and an N+ status is associated with a lower OS.

**Reviewer's Comments:** The authors try to present a rationale for routine elective neck dissection in patients with ACC, but it was shown in their cohort of patients with clinically N- status that there was no difference in OS or distant metastases between those who were observed or treated with elective neck dissection. Twenty patients were reported to have radiation to their neck, but the authors do not specify the criteria or the patient subgroup receiving this treatment. In addition, their data also indicate there was no significant difference in the proportion of patients who had "alive with disease" or "no evidence of disease" status depending on whether an elective neck dissection was performed. (Reviewer-Zhen Gooi, MD).

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Keywords: Adenoid Cystic Carcinoma, Elective Neck Dissection, Therapeutic Neck Dissection

Print Tag: Refer to original journal article
Obstructive Salivary Disorders - Parotid Imaging Characteristics vs Sialendoscopic Findings

A Comparison of Parotid Imaging Characteristics and Sialendoscopic Findings in Obstructive Salivary Disorders.

Kiringoda R, Eisele DW, Chang JL:

Laryngoscope 2014; 124 (December): 2696-2701

Parotid stones anterior to the masseter muscle on preoperative imaging are highly amenable toward endoscopic removal.

**Background:** There are no studies comparing preoperative imaging with subsequent findings on sialendoscopy.

**Objective:** To investigate how preoperative imaging obtained as workup for obstructive parotid disease relates to intraoperative sialendoscopic findings.

**Design:** Retrospective review of the records of patients who underwent preoperative imaging for workup of obstructive parotid disease followed by parotid sialendoscopy.

**Methods:** Preoperative imaging and reports were reviewed, and location of parotid stones was classified based on their relation to the masseter. Intraoperative findings from parotid sialendoscopy were analyzed with particular attention to factors contributing to the visualization and removal of sialoliths.

**Results:** 112 patients underwent parotid sialendoscopy; of these, 100 underwent preoperative imaging. A total of 93% of patients underwent either a CT or MRI scan as preoperative imaging. All patients with preoperative MRI or CT scans showing absence of stones were also demonstrated subsequently during sialendoscopy to have no stones. Stones classified as anterior to the masseter on preoperative imaging (n=15) were visualized on sialendoscopy and were amenable to endoscopic removal in 93% of patients. However, if the stone was between the anterior and posterior borders of the masseter muscle (n=14), endoscopic visualization and removal was only successful in 57% of patients. The most common cause for failure of removal in this region was ductal stenosis. In stones that were classified as posterior to the masseter (n=12), endoscopic visualization was successful in 33% of patients and no stones were successfully removed with endoscopic techniques. Failure of endoscopic visualization in this location was most commonly attributed to smaller ductal size and angled ductal trajectory.

**Conclusions:** The negative-predictive value for the absence of parotid stones seen on either CT or MRI is high. Stones anterior to the masseter muscle are the most optimal for endoscopic visualization and removal.

**Reviewer's Comments:** This paper presents a few interesting findings. First, it was shown that all patients with CT or MRI showing absence of parotid stones were indeed shown to have no stones during sialendoscopy. This runs contrary to "traditional" knowledge stating that a fair proportion of parotid stones are radiolucent, which is based on studies using plain radiographs. Second, based on the authors' observations, an added utility of cross-sectional imaging with either CT or MRI is to predict the likelihood of success for endoscopic visualization and removal. Last, it was mentioned that in patients with a history of prior radioactive iodine therapy and obstructive parotid salivary symptoms, no stones were found on preoperative imaging or sialendoscopy, which suggests that cross-sectional imaging as workup for parotid sialoliths in this patient subset is unnecessary. (Reviewer-Zhen Gooi, MD).

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Keywords: Sialendoscopy, Parotid Stones, Sialolith, CT, MRI

Print Tag: Refer to original journal article
Aspiration pneumonia following head and neck cancer treatment in the elderly population is an independent risk factor for mortality.

**Background:** Chemoradiation is now the preferred modality of treatment for many advanced head and neck cancers, but patients incur numerous side effects with this treatment. Less is known about aspiration pneumonia compared to other treatment-related complications.

**Objective:** To report on the incidence, risk factors, and survival following aspiration pneumonia in elderly head and neck cancer patients treated with chemoradiation at a population-based level.

**Methods:** The Surveillance, Epidemiology, and End Results-Medicare database from 2000 to 2009 was used. The authors identified patients aged >65 years with a diagnosis of head and neck squamous cell carcinoma (SCC) who received concurrent chemoradiation and developed aspiration pneumonia after commencement of radiation therapy until the conclusion of the study period or death. A similar matched set of non-cancer control patients was obtained from the Medicare database.

**Results:** 3513 cancer patients were identified, of whom 801 developed aspiration pneumonia. The 1- and 5-year cumulative incidence of aspiration pneumonia was 15.8% and 23.8% compared to 3.6% and 8.7% in matched control patients. Multivariate analysis showed that age >74 years, male gender, and cancer location in the nasopharynx or hypopharynx were independent risk factors for aspiration pneumonia. Aspiration pneumonia was also independently associated with a 42% increased risk of mortality on multivariate analysis. Among the cancer patients diagnosed with aspiration pneumonia, 84% had a 10-day median length of stay, 45% were admitted to the ICU, and 30-day mortality rate was 32.5%.

**Conclusions:** Close to 25% of elderly head and neck cancer patients treated with chemoradiation had aspiration pneumonia within 5 years with a resulting increase in morbidity and mortality.

**Reviewer's Comments:** Strengths of this study include the methodology incorporating a population-based analysis and identification of matched controls for comparison purposes. The data serve to demonstrate the significant incidence and impact of aspiration pneumonia following chemoradiation for head and neck cancer in the elderly population. The authors state accuracy of the diagnosis code for aspiration pneumonia has been validated in prior studies. Despite this, coding errors have to be taken into account when examining these results. Factors of interest that are not reported, perhaps due to coding limitations within the database, include the radiation dosage received by these patients, percutaneous endoscopic gastrostomy use, smoking status, and co-existing pulmonary conditions. (Reviewer-Zhen Gooi, MD).

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Keywords: Head, Neck, Cancer, SEER, Aspiration Pneumonia, Mortality, Elderly

Print Tag: Refer to original journal article
Otologic Injuries After the Boston Marathon Bombings

Otologic Outcomes After Blast Injury: The Boston Marathon Experience.
Remenschneider AK, Lookabaugh S, et al:

Otol Neurotol 2014; 35 (December): 1825-1834

Otologic injuries were extremely common after the Boston Marathon bombings.

Background: Much has been written about the Boston Marathon bombings that occurred on April 15, 2013, but very little press has focused on the otologic injuries during this event.

Objective: To describe the otologic injuries during the Boston Marathon bombings.

Design: Prospective cohort study.

Participants: 94 patients seen by 1 of 30 otolaryngologists at 1 of 8 medical centers.

Methods: Each patient documented their location on a map at the time of the explosions. Perforations were graded based on percentage of the drum involved. Audiograms were performed within 6 weeks and 6 months later. Injuries were classified as perforations or sensorineural hearing loss. Patients also completed quality-of-life indicators, including the Tinnitus Handicap Inventory (THI), Dizziness Handicap Inventory (DHI), and Hearing Handicap Inventory (HHI).

Interventions: Tympanoplasty and systemic steroids in some patients.

Results: There were 62 perforations in 48 patients. Right ears were more commonly perforated (40 vs 22 on the left). Also, 75% of patients who could identify the direction of the blast said their right ear was closer. At the last follow-up (3 to 10 months after the injury), 32 perforations had not healed. A total of 80% of patients reported hearing becoming worse after the blast, and 68% reported new or worsening tinnitus. When the 8 patients with sensorineural hearing loss who received steroids were examined, there was overall no significant effect of steroids. However, 1 patient went from a word recognition score of 2% to 100% at follow-up. When location of patients relative to the blast was considered, it varied from 1 foot to 1000 feet. All patients who had tympanic membrane perforations were within 30 feet of the blast, but some patients as close as 5 feet from the blast did not have perforations. This risk of perforation was significantly correlated with distance to the blast. The authors note that 90% of patients hospitalized due to the blast had tympanic membrane perforations. Only 18% of patients had dizziness, but this usually presented in a delayed fashion. When quality of life was assessed using the HHI, THI, and DHI, the scores were not significantly different between time of the injury and 6 months later.

Conclusions: Otologic injuries were common after the Boston Marathon bombings.

Reviewer's Comments: When we hear stories of the injuries in the Boston Marathon bombings, most of the press seems to focus on amputations and limb injuries. However, this paper demonstrates many more people suffered from ear-related injuries. (Reviewer-Benjamin T. Crane, MD).

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Keywords: Hearing Loss, Tinnitus, Dizziness, Blast Injury, Boston Marathon

Print Tag: Refer to original journal article
Incidence of Hypopharyngeal Cancer Has Declined Over the Past Decade

Kuo P, Chen MM, et al:

Laryngoscope 2014; 124 (September): 2064-2069

Surgery performed for treatment of hypopharyngeal cancer has decreased over the past decade.

**Background:** Hypopharyngeal cancers are less common than other subsites of laryngeal cancer. Epidemiologic data on this particular subsite over the past decade are lacking.

**Objective:** To report on the incidence of hypopharyngeal cancer in the United States (U.S.) and to examine if there has been a change in treatment modalities and survival between 1988 and 2010.

**Methods:** Analysis of the Surveillance, Epidemiology, and End Results-9 database from 1988 to 2010. This database represents an estimated 9.4% of the U.S. population. Adult patients with primary squamous cell carcinoma of the hypopharynx were identified by histological and topographical codes.

**Results:** The total cohort size was 3958 patients. Patients were mostly male (78.0%) and of Caucasian ethnicity (76.7%). There was a 2% annual decrease in the incidence of hypopharyngeal cancer during the study period. Use of laryngopharyngectomies declined by 2.5% per year, and the use of radiation increased by 2% per year from 1988 to 2010. In patients who received combined surgery and radiotherapy, 5-year overall survival was significantly higher (34.5%) compared to surgery (18.9%) or radiotherapy alone (22.6%). Multivariate analysis showed that age >65 years, higher T stage, higher N stage, and treatment with either radiation or surgery alone were associated with poorer survival. There was a significant improvement in survival for patients treated with radiation therapy alone from 1988 to 1990 (13.5%) to 1991 to 1995 (21.5%), but no other temporal differences in survival were noted for other treatment modalities within the study period.

**Conclusions:** The incidence of hypopharyngeal cancer and use of surgical therapy as a treatment modality for it over the past decade has declined.

**Reviewer’s Comments:** This is a study of interest given that most population-based analyses of laryngeal cancers incorporate data from multiple subsites. By limiting the data to hypopharyngeal cancers alone, the authors clearly demonstrate a decline in the incidence of cancer in this subsite, which parallels the overall decline in smoking among the adult population of the U.S. Although no clear trends in improved survival were demonstrated, there is evidence to suggest that a combination of surgery and radiotherapy confers an advantage over radiotherapy or surgery alone. The authors acknowledge that there may be an element of selection bias in healthier patients being selected to undergo multimodality treatment. In addition, use of chemotherapy within this cohort is unknown and may represent a proportion of patients being treated with radiation only. This could account for the noted improvement in survival seen with this treatment modality from 1991 to 1995 compared to 1988 to 1990. (Reviewer-Zhen Gooi, MD).

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Keywords: Hypopharyngeal Cancer, Survival, Radiation, Surgery, Squamous Cell Carcinoma

Print Tag: Refer to original journal article
Prednisolone May Reduce Pain After Tonsillectomy in Pediatric Patients

Effects of Oral Prednisolone on Recovery After Tonsillectomy.

Park SK, Kim J, et al:

Laryngoscope 2015; 125 (January): 111-117

Although prednisolone is shown to reduce postoperative pain levels in children in a randomized prospective trial, a placebo effect cannot be discounted.

**Background:** Prior studies reporting on the use of steroids after tonsillectomy have ≥1 of the following inherent weaknesses: retrospective design, small number of patients, and lack of randomization. **Objective:** To report on the effect of prednisolone on various postoperative recovery parameters after tonsillectomy. **Design:** Prospective randomized trial. **Participants:** Adult and pediatric patients aged >4 years undergoing elective tonsillectomy for both recurrent tonsillitis and obstructive sleep apnea by a single surgeon from 2013 to 2014. **Methods:** Patients were randomized to either prednisolone 0.25 mg/kg per day for 7 days postoperatively or observation. Primary outcome was pain, which was measured by patient-reported rating scales or for patients between ages 4 and 11 years through visual analogue scales assessed by parents. Pain on both scales was rated from 0 to 10, with 0 being no pain and 10 being the worst possible pain. Among other reported outcome measures were diet and activity level. **Results:** 198 patients were enrolled. There were 99 patients in each arm. Each group had 69 pediatric patients. There were no significant differences in age, sex, or indication for tonsillectomy between treatment groups. Pediatric patients who had received prednisolone were found to have significantly reduced pain compared to the observation group at postoperative day 7 (mean pain score, 1.39 vs 2.64; \(P < 0.001\)) and postoperative day 14 (0.12 vs 0.42; \(P < 0.01\)). At postoperative day 7 as well, a greater proportion of pediatric patients receiving prednisolone had a regular diet and demonstrated normal activity levels but not at postoperative day 14. Prednisolone did not improve pain levels in adult patients at both follow-up periods, although a higher proportion of adults receiving prednisolone reported normal activity and less nausea and vomiting at postoperative day 7. **Conclusions:** A 7-day course of prednisolone after tonsillectomy reduces pain and improves the resumption of a regular diet and activity in the pediatric population, although a placebo effect cannot be ruled out. **Reviewer's Comments:** Although the authors tried to overcome some of the criticisms leveled at previous studies by recruiting a larger patient cohort and utilizing randomization, this study still had a number of shortcomings. Chief among these is the lack of a placebo arm. The authors also do not inform the reader about the use of postoperative analgesic medications in these patients. These data may be a more objective indicator of pain control as opposed to patient rating scales, especially among the pediatric population. The clinical impact of prednisolone in adults appears mixed, as improvement in activity and nausea and vomiting were not correlated with a reduction in pain levels. On the basis of these findings, further study incorporating a placebo-controlled group is warranted before routine use of prednisolone in the management of post-tonsillectomy pain can be recommended. (Reviewer-Zhen Gooi, MD).

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Keywords: Tonsillectomy, Pain Control, Prednisolone, Pediatric, Adult, Healing

Print Tag: Refer to original journal article
Factors That Contribute to Trismus After Treatment for Oral Cavity Cancer


Trismus is associated with radiation use after surgery for oral cavity tumors.

**Background:** Treatment for oral cavity and oropharyngeal cancers can result in trismus (restricted mouth opening). Normal mouth opening ranges from 4.0 to 6.0 cm, but trismus is defined as an opening <3.5 cm. The prevalence of trismus has ranged from 30% to 80% for these cancer patients who have completed treatment. For oral cavity tumors, the detection rate is better than that of oropharyngeal tumors, but these patients appear to have higher rates of trismus after treatment.

**Objective/Methods:** To analyze rates of trismus after treatment for oral cavity cancer, the authors examined trismus development after definitive treatment that typically involved surgery and radiation. They also examined clinical parameters that were associated with trismus development in this patient population.

**Results:** A reduction of maximal mouth opening invariably developed for all of these patients who underwent surgery only, but these measurements partially recovered by 6 and 12 months. On the other hand, for patients who required both surgery and radiation, the trismus did not improve after completion of treatment. In addition, site of tumor, T stage, and alcohol consumption were all independently associated with greater trismus. Post-treatment trismus was most associated with pretreatment maximum mouth opening, treatment with both surgery and radiation, and maxillary/mandibular involvement.

**Conclusions:** Postoperative radiation and maxillary or mandibular involvement are the main contributing risk factors for trismus in patients who have undergone treatment for oral cavity tumors.

**Reviewer's Comments:** This is an excellent prospective study on a topic in which otolaryngologists should be knowledgeable. Of course, the major limitation is the low number (n=20) of patients who received radiation, but the methodology is sound overall. This paper segregated the various clinical parameters that would affect trismus and performed the appropriate analysis to show that trismus should be brought up in the discussion with patients who are undergoing surgery for oral cavity tumors. One potential implication of this study is that patients with oral cavity cancer should be followed up by speech pathologists before, during, and after treatment to potentially improve this devastating sequela after surgery and/or radiation. (Reviewer-Young J. Kim, MD, PhD).

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Keywords: Trismus, Mouth Opening, Mouth Neoplasms, Radiotherapy, Risk Factors

Print Tag: Refer to original journal article
Implication of the Onset of Hypocalcemia After Total Thyroidectomy

Relationship Between Onset of Hypocalcemic Symptoms and the Recovery Time From Transient Hypocalcemia After Total Thyroidectomy.

Lee YS, Chang HS, et al:

Head Neck 2014; 36 (December): 1732-1736

Patients with symptomatic hypocalcemia that develops within 24 hours after total thyroidectomy are more likely to have slower recovery of normocalcemia.

**Background:** Hypocalcemia after total or completion thyroidectomy is a complication that is more common than expected. It is estimated that transient hypocalcemia can occur in up to 50% of cases. Fortunately, the rate of permanent hypocalcemia is much lower at 0.5% to 2.0%. For patients who have had the experience of measuring calcium levels after total thyroidectomies, it is clear there are various kinetics of hypocalcemic symptoms.

**Objective:** To examine the relationship between onset of hypocalcemic symptoms and prolongation of hypocalcemia.

**Design:** Retrospective analysis of the records of postoperative thyroidectomy patients who developed symptomatic hypocalcemia.

**Methods:** Patients were categorized into 3 different cohorts. One group had symptomatic onset within 24 hours, the second group had onset between 24 and 48 hours, and the third group had onset of symptoms after 48 hours.

**Results:** The authors found interesting correlations in terms of recovery time. Patients with earlier onset of hypocalcemic symptoms (onset <24 hours) showed longer recovery time than those with later onset of symptoms. The authors examined parathyroid hormone levels as well and found that the <24-hour-onset group had lower levels of parathyroid hormone values than that of the other group, but this was not significant. They also showed that the 3 groups did not have any differences in hospitalization rates.

**Conclusions:** Hypocalcemic symptoms developing within 24 hours after surgery can potentially predict longer time to normalization of hypocalcemia.

**Reviewer's Comments:** The main criticism of this report is the low number of patients. In the early onset group (<24 hours), there were only 14 patients. The late-onset group (>48 hours) had only 11 patients. Although the trend was clearly noted, it is obvious that the addition of more patients may drastically alter the negative correlation between onset of symptomatic hypocalcemia and recovery time to calcium normalization. (Reviewer-Young J. Kim, MD, PhD).

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Keywords: Hypocalcemia, Thyroidectomy, Hypoparathyroidism, Calcium, Parathyroid Hormone

Print Tag: Refer to original journal article
It is still unclear whether Graves' disease is associated with the development of thyroid carcinoma.

**Background:** There have been a few reports in the past several years that suggested Graves' disease is associated with increased incidence of well-differentiated thyroid carcinoma. Early reports initially suggested Graves' disease was protective in terms of carcinoma development, but the more recent reports countered this idea by showing that patients with Graves' disease had greater prevalence of well-differentiated thyroid carcinoma as well as more aggressive variant of thyroid carcinoma. The biological plausibility was suggested in a *New England Journal of Medicine* paper that showed an association between thyroid-stimulating antibodies and thyroid cancer incidence.

**Objective:** To examine the relationship between Graves' disease and thyroid carcinoma. **Setting:** The Cleveland Clinic, Cleveland, Ohio. **Design/Methods:** The authors retrospectively looked at the incidences of incidental papillary thyroid carcinoma discovered in specimens of patients who had their surgery for either Graves' disease or euthyroid goiter. A total of 248 patients with Graves' disease and 245 with euthyroid goiter were included in this cohort analysis. Rates of these incidental findings as well as clinical pathological behaviors of the tumors were analyzed. **Results/Conclusions:** Both groups had very comparable rates of incidental micro-papillary thyroid carcinoma. In the euthyroid group, this rate was 28%. In the Graves' disease group, the rate was 26%. Thyroid-stimulating antibodies in the 2 groups were examined. The authors found no difference in the level of this antibody titer to show that these were not predictive of carcinoma in the Graves' disease group. They did, however, find that patients who were found to have incidental carcinoma in the Graves' disease cohort were younger. **Reviewer's Comments:** This study showed conflicting results, so it was difficult to derive any conclusion. First, the odd thing was the relative higher number of incidental papillary thyroid carcinoma in both Graves' disease and euthyroid goiter groups. Both were >25%, which is relatively high compared to other institutions. Although the authors did not find an increased incidence of papillary thyroid carcinoma in Graves' disease, nor did they find any relationship between thyroid-stimulating antibodies, they still contended that Graves' disease is associated with the development of papillary thyroid carcinoma. For this, they relied on age at presentation of patients who were found to have incidental carcinoma. Overall, this argument was thin. (Reviewer-Young J. Kim, MD, PhD).

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Keywords: Carcinoma, Graves' Disease, Prognosis

Print Tag: Refer to original journal article
Elective Neck Dissection for T1 Oral Tongue Disease

Is There a Role for Neck Dissection in T1 Oral Tongue Squamous Cell Carcinoma? The UCLA Experience.

Peng KA, Chu AC, et al:


A recent study found T1 oral tongue squamous cell carcinoma may be associated with >20% occult nodal disease.

**Background:** Oral tongue carcinoma that presents at an early stage has good a prognosis. One determinant of the prognosis of these cases is nodal staging. Many have adopted elective neck dissection. However, others have adopted wait and watch protocols, since the rates of occult neck diseases have ranged from 6% to 46%. The other issue is that of cost. Given the current state of cost reduction in medical care expenses, it is unclear whether the addition of elective neck surgery adds to the cost effectiveness in the management of early stage tongue cancer.

**Objective:** To study the role of neck dissection in T1 oral tongue squamous cell carcinoma.

**Methods:** Surgeons at UCLA, Los Angeles, California, examined their series of T1 oral tongue carcinoma cases as well as performed a cost analysis by using the Surveillance, Epidemiology, and End Results (SEER) database.

**Results:** Cumulatively, 123 patients were identified; of these, 88 had elective neck dissections. The occult neck disease rate was 23% for these T1 stage patients. However, when this cohort was compared to patients who did not undergo elective neck dissection, there was no difference in locoregional recurrence rates. When the authors performed a cost analysis on a SEER-linked database that examined Medicare payment rates, they found no difference between patients who had elective neck dissection and those who did not have elective neck dissection; they found no difference in costs.

**Conclusions:** Elective neck dissection did not increase health care costs, so the authors recommend elective neck dissection in this patient population.

**Reviewer’s Comments:** The results of this study are mixed, and it is unclear whether neck dissection recommendation is clearly justified. The occult rate of >20% warrants a neck dissection, but the analysis of no difference in overall locoregional difference runs counter to this recommendation. Part of this problem may be the low number of patients, but the oncologic data are uneven as to whether dissection is clearly necessary. The author then examined a separate database to show that there was no cost difference between neck dissection and no neck dissection, so they ultimately recommended elective neck dissection for T1 stage patients. In the end, it is still unclear whether elective neck dissection is strongly recommended. (Reviewer-Young J. Kim, MD, PhD).

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Keywords: Tongue Carcinoma, Squamous Cell Carcinoma, Elective Neck Dissection

Print Tag: Refer to original journal article
Postoperative PTH Monitoring After Total Thyroidectomy

Postoperative PTH Monitoring of Hypocalcemia Expedites Discharge After Thyroidectomy.
Chow TL, Choi CY, Chiu ANK:


It is still unclear whether parathyroid hormone use after thyroid surgery can help expedite discharge from the hospital.

**Background:** There are many ways to manage postoperative hypocalcemia after total thyroidectomy or completion thyroidectomy. If intraoperative identification is definitive, some clinicians initiate calcium supplementation preemptively, but others use the kinetics of postoperative calcium measurements to decide to initiate calcium supplementation. Recent reports support the use of postoperative parathyroid hormone (PTH) levels to assist in the decision to start postoperative calcium supplementation.

**Objective:** To determine whether PTH levels are useful in the management of postoperative hypocalcemia after thyroid surgery.

**Design:** Retrospective cohort study.

**Methods:** The control group had calcium levels checked, and they were discharged after stabilization of the calcium level. The test group had PTH levels drawn on postoperative day 1, and calcium supplementation was initiated after these measurements.

**Results:** Both groups had comparable hypocalcemia rates, which hovered around 50%, but none required IV calcium supplementation. The PTH group had lower rates of hypocalcemic symptoms, and hospitalization days between the groups differed significantly. The control, non-PTH group stayed in the hospital 4 days, but the PTH-measurement group stayed in the hospital only 1 day. Both groups had similar demographics, hypocalcemia rates, and need for calcium and vitamin D supplementation.

**Conclusions:** The authors recommend postoperative PTH monitoring after total thyroidectomy.

**Reviewer's Comments:** There are several problems with this paper. One problem is that the cohort study is a historical cohort study. The groups were not examined at the same time, so the experience of having better PT preservation in the PTH group is a real concern, as reflected by the lower rates of postoperative hypocalcemia in the PTH group. The other problem is the rates of asymptomatic hypocalcemia were high for both groups, which suggests that a control group using simple calcium levels to dictate discharge may not have been the appropriate control group. In brief, this retrospective cohort study does not help us in espousing the use of PTH for postoperative thyroidectomy management. (Reviewer-Young J. Kim, MD, PhD).

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Keywords: Thyroidectomy, Hypocalcemia, PTH, Discharge

Print Tag: Refer to original journal article
Skin Color Does Not Predict Sunburn Potential

Self-Reported Pigmentary Phenotypes and Race Are Significant but Incomplete Predictors of Fitzpatrick Skin Phototype in an Ethnically Diverse Population.

He SY, McCulloch CE, et al:

J Am Acad Dermatol 2014; 71 (October): 731-737

Race, skin color, hair color, and eye color cannot reliably predict how the skin will behave in the sun.

**Background:** The Fitzpatrick skin phototype is widely used to assess skin cancer risk and in phototherapy protocols. It has been shown to be a stronger predictor of skin cancer risk than eye, skin, or hair color and thus has become the language of communicating skin cancer risk.

**Objective:** To correlate self-reported Fitzpatrick skin phototype with pigment phenotype in an ethnically diverse population.

**Methods:** This study was conducted by distributing a survey on paper and via social media to as broad a population as could be reached by the investigators. Ultimately, 3386 participants answered questions about how their skin reacts to 30 minutes of sun exposure without sunscreen, and they were given a color chart to use to determine the pigmentation category of the skin on their inner wrist.

**Results:** The racial makeup of the respondents was diverse, with 1021 white, 576 Asian, 556 black, 245 Native American, 342 Latino, and 564 multiracial participants. The majority of patients reported skin color in the 2 lightest groups (77.5%), though most had brown eyes (64.6%) and brown or black hair (90.4%). The majority of participants had self-reported Fitzpatrick skin phototype of III or above (84.3%). Sex, race, eye color, hair color, and skin color all were predictors of Fitzpatrick skin phototype after multivariate analysis. The investigators used a multivariate logistic regression model using race, age, sex, and pigment type to predict Fitzpatrick skin phototype and found that the model deviated from the actual Fitzpatrick skin phototype by ±1 point.

**Conclusions:** Self-reported race and skin color did not adequately predict Fitzpatrick skin phototype and may not be accurate for use in estimating a non-white individual’s skin cancer risk. The authors suggest caution in using the common practice of determining an individual’s skin cancer risk and subsequent need for risk reduction based on physician-determined pigment phenotype.

**Reviewer’s Comments:** Through diligent efforts of dermatologists and many societies, the message that people of color are at risk for skin cancer, including melanoma, has pierced the public consciousness. We and our patients recognize that broad ethnic categories encompass individuals with a wide range of pigment. However, we struggle to target patients of color who would most benefit from skin cancer prevention interventions. It is common for physicians to use visual assessment of race and skin and hair color to identify patients who they feel may be at increased risk for skin cancer. However, this may not serve our patients well. This study is a nice reminder that it is worth the effort to ask our patients whether they tan or burn in the sun and use their response to trigger appropriate skin cancer education. (Reviewer-Rashmi Unwala, MD).

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Keywords: Fitzpatrick Skin Phototype, Skin Color, Skin Cancer Risk, Ethnic Skin, Diversity

Print Tag: Refer to original journal article
In a recent publication, experts assert that valacyclovir may be the preferred antiviral for pharmacotherapy of Bell palsy.

**Background:** There are numerous causes of hemi- and bifacial weakness. There are few large analyses of facial palsy patients.

**Objective:** To evaluate the range and incidence of facial palsy etiologies in cases presenting to a tertiary facial nerve center, and to review diagnostic and management approaches to the condition based on the authors’ extensive experience over the past 10 years.

**Design/Methods:** Retrospective chart review of patients referred for facial weakness between 2003 and 2013. Cases of muscle dysfunction and primary hemifacial spasm were excluded. Diagnostic and treatment strategies were reviewed.

**Results:** 1989 records met inclusion criteria. In proportions similar to a previous large series, Bell palsy was the most common cause of hemifacial weakness, accounting for 38% of cases; this was followed by acoustic neuroma (10%, encompassing post-resection, post-radiation, and neurofibromatosis), malignancy (7%), iatrogenic injuries (7%), varicella zoster (7%), benign lesions of the facial nerve or parotid (5%), congenital palsy (5%), Lyme disease (4%), and other causes (17%). Among these other causes were a range of autoimmune diseases, numerous infections, acute otitis media/mastoiditis, and, very infrequently, brainstem or cortical stroke (13/1989). Overall, 61% of cases were female, with a mean age at presentation of 44.5 years (±18.6 years). Diagnoses were revealed primarily by history. In their algorithm, the authors listed numerous etiologies for bilateral palsy, of which the top-line candidates were Lyme, Guillain-Barré, mononucleosis, cytomegalovirus, meningitis, HIV, polio, and syphilis, with later mention of botulism, sarcoidosis, rheumatoid arthritis, lupus, lymphoma, leukemia, and drug reaction. Patients presenting with palsy for >4 months’ duration should be managed by what they term their "insidious onset pathway," in which occult malignancy is an important consideration. Regarding treatment of acute Bell palsy with onset <14 days prior to presentation, these authors come down firmly on the side of everything: steroids (60 mg daily for 5 days, then a taper over the next 5), valacyclovir 500 mg orally twice daily for 7 days (per the authors, not acyclovir), and doxycycline 100 mg by mouth twice daily for 3 weeks. They also stress eye care and referral for audiometry if hearing loss is noted.

**Conclusions:** Bell palsy remains the most common hemifacial palsy, and females present more often for evaluation.

**Reviewer's Comments:** So, 3 to 4 of every 10 patients with hemifacial weakness have Bell palsy, making it common but certainly not overwhelming. So it’s good to keep some alternative causes in mind. Regarding pharmacotherapy, this is the first I've read of valacyclovir being preferred, steroid tapers are voodoo and unnecessary, and doxy is very controversial. The algorithms presented by the authors encompass acute, chronic, traumatic, and nontraumatic cases, are an interesting snapshot of a single, very busy referral center's approach to facial palsy, and are worth a look. (Reviewer-Steven B. Abrams, MD).
Adequate pain control improves patient satisfaction during nonsurgical facial rejuvenation.

**Background:** Nonsurgical facial rejuvenation is on the increase and currently outnumbers facial surgical procedures. Having a pleasant and comfortable experience increases patient satisfaction.

**Objective:** To describe basic principles that provide patients with minimal pain experience during nonsurgical facial rejuvenation procedures.

**Design:** Review article of different pain management techniques.

**Methods:** The authors discuss basic principles to provide a pain-free to minimal-pain experience during nonsurgical facial rejuvenation. The procedures discussed include injectables, non-invasive devices, and minimally invasive devices. **Discussion:** Each procedure is reviewed. Injectables are botulinum toxins and fillers. Using smaller needles (30 g or smaller) to inject the botulinum toxin causes less discomfort. In addition, use of ice, cold packs, or cooling devices before injection decreases pain and bruising. Topical anesthetics also decrease pain. As far as filler injections, smaller needles, cooling, slow injections, vibration, and topical anesthetics all decrease discomfort. Premixing fillers with lidocaine decreases pain and improves patient satisfaction. The authors advocate using a combination of these techniques to reduce patient discomfort. For noninvasive devices, laser hair removal is the most common treatment in the United States. Topical anesthetics are used to decrease pain. In addition, cooling cryogen spray before each laser pulse can be used to decrease pain intensity. For longer procedures, such as a large tattoo removal, a longer-acting lidocaine/prilocaine cream can be applied for up to 45 minutes. For minimally invasive devices such as fractional radiofrequency and laser resurfacing, the same techniques are advocated. However, for micro-needles attached to a radiofrequency device, local or tumescent anesthesia is indicated. For patients with low pain tolerance, oral narcotics, anxiolytics, or sedation are indicated. As far as laser resurfacing, for moderate to deep laser resurfacing, a combination of local anesthesia, oral or IV sedation, and/or general anesthesia may be necessary.

**Conclusions:** Providing adequate pain control during nonsurgical facial rejuvenation improves overall patient satisfaction and outcome.

**Reviewer's Comments:** This article provides an excellent review of pain management modalities in patients undergoing nonsurgical facial rejuvenation. The authors discuss the various nonsurgical procedures including injectables (botulinum toxin and fillers), non-invasive devices (laser hair removal, vascular laser treatment, intense pulsed/broad band light, tattoo removal, radiofrequency/long pulse intense pulsed light, and microfocused ultrasound) and minimally invasive devices (fractional radiofrequency and laser resurfacing). Pain management for each cosmetic procedure is discussed. (Reviewer-Elie M. Ferneini, DMD, MD, MHS, MBA, FACS).

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Keywords: Pain Control, Nonsurgical Facial Rejuvenation, Postoperative Pain, Injectables

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Otolaryngology—Head & Neck Surgery  
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Quiz Code: 33117P

To complete the quiz for credit, log onto www.practicalreviews.com. If you have not previously registered at the site, click on “New Customer Registration” located in the right navigational bar and follow the directions. You will need your account number (located above your name on the Table of Contents) and your mailing zip code. To access the quiz, click on the “Take a Quiz” link located in the right navigational bar. Enter the quiz code and select your answers. Once you click Submit, you will receive immediate notification of your score.

Quiz Questions

1. Capped polysomnography offers additional clinical information to assist in the decision-making algorithm to decannulate a tracheostomized pediatric patient.  
Circle one: True False  
2. An advanced age of >85 years is not a negative prognostic indicator for patients with squamous cell carcinoma of the parotid gland.  
Circle one: True False  
3. The rate of occult neck nodal metastases in adenoid cystic carcinoma of the head and neck region is in excess of 40%.  
Circle one: True False  
4. Parotid stones that are visualized on preoperative imaging to have a location anterior to the masseter muscle are usually not amenable toward endoscopic removal.  
Circle one: True False  
5. In a population-based analysis of elderly head and neck cancer patients undergoing chemoradiation, close to 25% had aspiration pneumonia within 5 years of treatment.  
Circle one: True False  
6. A total of 90% of patients hospitalized due to blasts from the Boston Marathon bombings had tympanic membrane perforations.  
Circle one: True False  
7. The incidence of hypopharyngeal squamous cell carcinoma has decreased over the past decade in the United States.  
Circle one: True False  
8. In a prospective randomized trial comparing prednisolone to observation after tonsillectomy, the use of prednisolone did not reduce pain in a pediatric population.  
Circle one: True False  
9. Both surgery and radiation treatment for oral cavity tumors can produce temporary trismus.  
Circle one: True False  
10. In a recent study by Lee et al, patients with symptomatic hypocalcemia that developed >24 hours after total thyroidectomy had the longest time to recovery.  
Circle one: True False  
11. Thyroid-stimulating antibodies are clinically associated with the pathogenesis of papillary thyroid carcinoma.  
Circle one: True False  
12. In a study by Peng et al, the rate of occult neck disease in patients with T1N0 oral tongue squamous cell carcinoma was >30%.  
Circle one: True False  
13. According to a study by Chow et al, monitoring parathyroid hormone levels on day 1 after total thyroidectomy facilitates safe earlier hospital discharge.  
Circle one: True False  
14. Self-reported race and skin color do not adequately predict Fitzpatrick skin phototype and may not be accurate for use in estimating a non-white individual’s skin cancer risk.  
Circle one: True False  
15. Bell palsy represents 60% of all cases of acute facial hemiplegia.  
Circle one: True False  
16. Adequate pain control improves patient satisfaction during nonsurgical facial rejuvenation.  
Circle one: True False
1. F The entire shaft of the laser-safe endotracheal tube is resistant to ignition and flammability when making contact with a CO₂ laser beam.

2. F In patients with oral squamous cell carcinoma, the propensity for nodal metastases is the same for floor of mouth tumors and oral tongue tumors.

3. T Most patients using jaw-opening devices in tandem with a structured exercise regimen for the treatment of trismus have an improvement in maximal interincisal opening at 3 months.

4. F In a study by Young et al, >80% of the advanced laryngeal cancer patients who receive tracheostomy before chemoradiation can be decannulated after treatment is completed.

5. F Among patients receiving modern intensity-modulated radiation therapy for the treatment of locally advanced head and neck cancer, TSH levels do not need to be checked beyond 6 months after completing treatment.

6. F Radiotherapy with concurrent chemotherapy is the standard of care for head and neck carcinoma from unknown primary tumors.

7. F In patients undergoing total laryngectomy, pectoralis flaps incorporated into the suture line definitively reduce the rates of postoperative pharyngocutaneous fistula formation.

8. F Among early stage oral cancer tumors, tumor grade is not associated with positive margins after surgical excision.

9. F The square defect is the worst type of defect for minimizing the stress and strain associated with a classical rhomboid flap.

10. F For patients who are ventilated with an endotracheal tube, early tracheostomy is not associated with a reduced risk of mortality.

11. T Contrast-enhanced ultrasound has a diagnostic odds ratio of 34.7 in the assessment of malignancy in thyroid nodules.

12. F After excision of cervical sympathetic chain schwannomas, first-bite syndrome occurs in <1% of cases.

13. T Outside of the United States, there are no clear standardized instruments to measure overall function in patients with head and neck cancer.

14. T Antibiotics may be effective in reducing the duration of middle ear effusion in children with acute otitis media.

15. T The incidence of pneumococcal sinusitis in children decreased after introduction of the pneumococcal 13 vaccine.

16. F In children undergoing myringotomy and tympanostomy tube placement, purulent and mucopurulent fluids at the time of surgery were the most common types of fluids that led to obstruction of ear tubes postoperatively.