Radiographic Changes in BONJ Increase With Later Stages of Condition

*Dental Panoramic Radiographic Evaluation in Bisphosphonate-Associated Osteonecrosis of the Jaws.*

Treister N, Sheehy N, et al:


Radiographic evidence on panoramic films of sclerosis and surface irregularity correlate with clinical sites of bisphosphonate-associated osteonecrosis of the jaw.

**Objective:** To determine if clinical and radiographic signs of bisphosphonate-associated osteonecrosis of the jaw (BONJ) correlate with each other.

**Design:** Retrospective records/radiographic study.

**Participants:** 39 patients diagnosed with BONJ.

**Methods:** All subjects had digital panographic radiographs available for evaluation. All patients were clinically examined by 2 of the authors. The radiographs were reviewed by 2 radiologists who divided the dental arches into sextants. The sextants were evaluated for sclerosis, surface irregularity, and presence of sockets, bone fragmentation, and osteolysis. All 39 subjects had clinically exposed bone in the oral cavity. Eighteen control radiographs were also evaluated by the blinded radiologists from multiple myeloma patients with a history of IV bisphosphonate treatment, but who did not have exposed bone. The radiologists were blinded to clinical details about all subjects and differences in their initial interpretations were resolved by consensus.

**Results:** Diseases for which the patients were receiving IV bisphosphonates included multiple myeloma, breast cancer, prostate cancer, Gaucher disease, lung cancer, and osteoporosis. Twenty-five of the patients had a tooth removed recently. Of the 234 examined oral sextants, 62 had clinically exposed bone, while 61 of the 234 sextants had at least 1 radiographic abnormality. Clinical and radiographic findings together detected BONJ in 41 of the 234 sextants and a negative diagnosis in 152 of the 234 sextants. All control radiographs were negative except for a single radiograph that showed 2 focal areas of sclerosis where third molars had been previously removed. Radiographic signs of BONJ were usually sclerosis or surface irregularity, but no fragmentation or lytic change. Correlations between the positive clinical sites for BONJ and positive radiographic signs were significant in the maxilla, but not in the mandible. Persistent extraction sockets on radiographs also correlated significantly with clinical areas of exposed bone.

**Conclusions:** Focal panoramic radiographic findings of sclerosis, surface irregularity, and persistent extraction sockets correlate with clinical sites of BONJ.

**Reviewer’s Comments:** This study did not attempt to determine how radiographic findings may or may not change during the development and progression of BONJ. The authors point out that in many instances, the radiographic changes in the BONJ patients were more extensive than the clinically evident areas of exposed bone. (Reviewer-Sterling R. Schow, DMD).

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Keywords: BONJ

Print Tag: Refer to original journal article
The removal of third molars reduces probing depth in the distal of the second molar and improves periodontal condition in the remaining dentition.

**Objective:** To assess the impact of the removal of third molars on periodontal health in subjects with asymptomatic third molars.

**Design:** Prospective longitudinal study of healthy adult patients with asymptomatic third molars.

**Participants/Methods:** 69 patients made up a subsample of subjects with asymptomatic third molars at the time of enrollment in a longitudinal study; all subsequently had third molars removed. Probing depths were taken at the time of enrollment on all teeth in the dentition. This was repeated at 1-year intervals for a period of 3 years. Subsequent to enrollment, these patients had their third molars removed for various reasons. The probing depths of the dentition, and especially the segment of the dentition that included third molars and second molars, were compared with other subjects entered in the same study who retained their third molars.

**Results:** There was a significant reduction in the number of teeth with probing depths >4 mm in subjects who had third molars removed.

**Conclusions:** Removal of asymptomatic third molars showed a significant reduction in probing depths >4 mm when compared to a population of patients who retained their third molars. This is strong evidence that the removal of asymptomatic third molars improves the periodontal condition of the rest of the dentition.

**Reviewer's Comments:** This is strong evidence that the removal of third molars, even though asymptomatic, improves the periodontal condition of the remaining teeth. (Reviewer—Edwin D. Joy, Jr, DDS)

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Keywords: Dentoalveolar Surgery

Print Tag: Refer to original journal article
Objective: To evaluate the oral surgeons’ knowledge, attitudes, and training as it relates to tobacco use and cessation.

Design: A questionnaire study.

Participants: 5,234 members of the American Association of Oral and Maxillofacial Surgeons (AAOMS).

Methods: A 38-item questionnaire was mailed to all members of the AAOMS. The items analyzed the oral surgeons’ background education, knowledge, and attitudes toward smoking-related issues. Also questioned were the surgeons’ attitudes toward interventional behaviors and barriers to success.

Results: 52.4% of surgeons responded to the survey. Only 15% of respondents were aware of the U.S. Public Health Service Clinical Practice Guidelines regarding tobacco interventions. Overall, 36.8% believed that it was part of their role to assist patients in quitting. Ninety percent stated that they asked their patients about their tobacco use, but only 63.3% advised their patients to quit; 40.6% of surgeons stated that tobacco use issues were outside of their professional responsibilities. Only 19.3% stated that they were confident in assisting patients in stopping use of tobacco. The respondents that had received formal training in tobacco-use issues stated that they counselled at least 51% of their patients.

Conclusions: 90.1% of oral maxillofacial surgeons ask about and document tobacco use compared with 33% to 45% of general dentists; 63.3% of surgeons advise their tobacco-using patients to quit smoking, but only 15% provide any strategies to assist them in doing so. Only 8.7% of responding surgeons reported any training in tobacco-related issues.

Reviewer’s Comments: A very well done and interesting paper regarding our specialties’ attitudes on tobacco cessation. Interesting to note that only 90% documented tobacco use; its impact on anesthesia issues would have led me to believe a much greater percentage would have documented its usage. I would have to put myself in the over 90% of surgeons who have not received any training on tobacco cessation issues. All I do is tell them that they really should quit, but I provide no assistance in their quitting. (Reviewer-David M. Grogan, DMD).

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Keywords: Tobacco Use

Print Tag: Refer to original journal article
Objective: To present 7 new cases of foreign body granulomas involving the perioral tissues after injection of biomaterials for augmentation.

Design: Case report of 7 patients with foreign body granulomas following the injection of biomaterials.

Participants/Methods: The cases of 7 female patients who had injections of biomaterials for the augmentations of their lips and who some years later developed foreign body reactions are presented. The patients' histories and histologic examinations are provided.

Results: 7 patients, ranging in age from 34 to 70 years old, presented with nodules in their lips following the injection of biomaterials for lip augmentation. All patients had excisional or incisional biopsies. The biopsy material showed cells with vacuoles resembling a diagnosis of liposarcoma. One patient denied having ever had augmentation until presented with the diagnosis of liposarcoma.

Conclusions: It is possible for patients having biomaterials injected into the lips to develop granulomatous foreign body changes at a later time (up to many years). It is extremely important that the diagnostician have an accurate history of prior injection of biomaterial into the lips in order to avoid a misdiagnosis of liposarcoma.

Reviewer's Comments: This is an interesting article that presents 7 new cases, as well as reporting on 49 previously reported cases in the literature, of granulomatous changes in the perioral tissues of patients who had augmentation with biomaterials. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Soft Tissue

Print Tag: Refer to original journal article
How Thick Is the Schneiderian Membrane?

Correlation Between Gingival Phenotype and Schneiderian Membrane Thickness.

Aimetti M, Massei G, et al:


Average thickness of the Schneiderian membrane is 0.61 to 1.26 mm, and this thickness reflects the thickness of the gingival tissues; patients with thick gingival tissues tend to have thicker Schneiderian membranes.

**Objective:** To see if there is an association between gingival phenotypes and thickness of healthy maxillary sinus mucosa.

**Design:** Prospective clinical study.

**Participants:** 20 consecutive healthy patients having otorhinolaryngologic surgery.

**Methods:** All subjects had healthy gingival tissues, presence of all maxillary anterior teeth, no periodontal pockets, and no sinus pathology. CT scans were taken preoperatively as were periapical radiographs to demonstrate an absence of sinus or dental pathology. During their otorhinolaryngologic surgery, the subjects had unilateral maxillary sinus endoscopic examination and a sinus mucosa biopsy. Gingival thickness was measured at the facial aspect of the maxillary incisors and canines by a single, calibrated periodontist using an endodontic reamer probing to depth and measuring surface-to-bone depth with a calliper. Thin gingival phenotypes were <1 mm thick, while a gingival thickness of >1 mm was judged a flat-thick gingival morphotype. The sinus mucosa biopsies were measured for thickness by a histologist.

**Results:** Average attached gingival thickness was 1.19 ± 0.5 mm with considerable variation. Buccal gingival thickness was less at the canines and generally became thicker at the central incisors. Endoscopic visualization of the sinus cavities showed normal mucosa in all subjects. Average Schneiderian membrane thickness was 0.97 ± 0.36 mm. Sinus mucosa thickness was positively associated with the gingival phenotypes. Membrane thickness was a mean 1.26 ± 0.14 mm thick in subjects with thick gingiva (>1 mm) and just 0.61 ± 0.15 mm in those with thin gingiva. The variations in sinus mucosa thickness occurred because of differences in the connective tissue layer. All of the patients' sinus membranes had an epithelial lining that was just 2 cell layers thick and uniform in width.

**Conclusions:** Gingival thickness seems to be a reliable indicator of sinus membrane thickness.

**Reviewer's Comments:** The most common complication encountered with sinus lift procedures is Schneiderian membrane perforation or tearing. Thick or thin gingival phenotypes may suggest to the surgeon a lesser or greater risk of membrane perforation during surgery. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Gingival Phenotype

Print Tag: Refer to original journal article
Diagnosing Premalignant and Malignant Oral Lesions

Adjunctive Techniques for Oral Cancer Examination and Lesion Diagnosis: A Systematic Review of the Literature.

Patton LL, Epstein JB, et al:

J Am Dent Assoc 2008; 139 (July): 896-905

There appears to be very little evidence to support the use of visually based adjunctive techniques. Tissue biopsy remains the gold standard for the diagnosis of premalignant and malignant oral lesions.

**Objective:** To determine if there are any adjunctive techniques on the market to assist in the early detection of oral premalignant or malignant lesions.

**Design:** Review of the literature. **Materials:** 3 primary search engines.

**Methods:** PubMed, Cochrane Library, and the ISI Web of Science were searched to evaluate the effectiveness of the following adjunctive diagnostic techniques; toluidine blue, ViziLite Plus with TBlue, ViziLite, Microlux DL, OralCDx brush biopsy, and Orascoptic DK. Only peer reviewed literature was evaluated, while case reports and personal opinion papers were excluded. Only papers with histological confirmation of the adjunctive technique were included. All qualified papers were ranked with a quality score.

**Results:** 15 papers met inclusion criteria for the toluidine blue technique. The positive predictive value (PPV) varied from 33% to 93%. Its sensitivity ranged from 38% to 98%, and its negative predictive value (NPV) ranged from 22% to 92%. The visualization adjunctive techniques utilizing chemiluminescence or fluorescence had only 5 papers that met inclusion criteria. When utilizing the appropriate investigations, the specificity was 0%, NPV was 0%, and PPV was 20%. For brush biopsy techniques, the sensitivity ranged from 71% to 100%, PPV ranged from 38% to 88%, and NPV ranged from 60% to 100%.

**Conclusions:** A review of the appropriate literature revealed that there is very little evidence to support the use of visually based adjunctive techniques for the detection of oral premalignant lesions. There seems to be some evidence that toluidine blue may have some specificity in assisting diagnosis in high-risk populations with suspicious lesions. Tissue biopsy remains the gold standard for diagnosis.

**Reviewer's Comments:** A great review of the adjunctive techniques available for the detection of premalignant and malignant lesions. To this day, it appears that there are no reliable adjunctive techniques to aid in diagnosis, but I believe that in the near future our molecular biology colleagues will find an accurate adjunctive marker to aid in diagnosis. (Reviewer-David M. Grogan, DMD).

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Keywords: Examination/Diagnosis

Print Tag: Refer to original journal article
In spite of the availability of sophisticated neural testing, a practical approach to neurosensory testing can be done with light touch testing and a questionnaire using a visual analog scale.

Objective: To identify a testing method useful for clinical practice that allows the identification of nerve injury, the grade and severity of injury, and the long-term monitoring of recovery.

Design: A review of the literature and evaluation of consistency of results of published articles.

Materials/Methods: 75 previously published studies were identified from a literature search for evaluation and testing of sensory recovery from nerve injury resulting from third molar removal, implant placement, orthognathic surgery, and treatment of mandibular fractures. Published articles were evaluated for consistency and uniformity for measuring the incidence of occurrence, the clinical tests used, and their consistent results as well as the types of surgery and incidence of nerve involvement with the ability to measure recovery over time.

Results: Most of the published articles were very inconsistent in a uniform measurement of nerve damage and recovery over time. There was a large variation in the incidence of nerve injury from different types of surgery as well as tests used to measure the degree of injury and recovery over time. A simple test of light touch using Semmes-Weinstein monofilaments and a simple questionnaire of subjective symptoms using visual analog scales were as valuable as much more sophisticated neurosensory testing that took far longer and had enormous variation in test results.

Conclusions: A simple test of light touch using Semmes-Weinstein monofilaments was as sensitive and consistent in measuring nerve injury and recovery from injury as were far more sophisticated tests that showed enormous variability in their results. The testing should be done immediately, post-injury, and at 1 month, 6 months, and 1 year after injury and be supplemented with a questionnaire on current symptoms using a visual analog scale.

Reviewer's Comments: This is a most interesting paper that addresses the most frequently encountered complication in dentoalveolar surgery, which is inferior alveolar nerve damage. In a simple and practical way, it shows a way of measuring both the degree of injury and recovery over time. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Inferior Alveolar Nerve Injuries

Print Tag: Refer to original journal article
A large number of patients who have implants fail avoid reimplantation because of costs or anticipated additional discomfort.

**Objective:** To look at various factors that affect decisions to replace failed implants.

**Design:** Retrospective cohort study.

**Participants:** 194 patients who had implants fail.

**Methods:** Data gathered from patient records for the study included patient demographics, failed implant characteristics, anatomy of the alveolar ridge after the implant failure, and factors that affected the decision to replace or not replace the implant(s). Patients were grouped as those who had failed implants replaced and those who did not.

**Results:** 292 implants failed in the 194 patients. Seventy-four patients who lost 135 implants did not have implants replaced and made up the control group. One hundred twenty patients had a loss of 157 implants that were replaced. The mean age of control group patients was 54.4 years, while that of patients who had implants replaced was 49.55 years. Healthy, American Society of Anesthesiology (ASA) 1 patients who lost implants were 2.44 times as likely to have failed implants replaced, and a higher percentage of control patients were not healthy. In all, 4 different types of implants were included in the study groups, and failure rates by implant type were not different. The time interval between diagnosis of implant failure and actual implant removal was at least 3 months, shorter in patients who had failed implants replaced (1.53 ± 4.9 months vs 4.65 ± 7.64 months) as was the mean time interval between implant placement and removal (16.6 ± 31.2 vs 40.8 ± 47.87 months). Of the patients whose implants failed within 1 year of implant placement, 77.3% had their failed implants reimplanted compared to just 46.4% of patients who lost implants >1 year after they had been placed. Just 5% of patients who had failed implants were considered to have "severe" bone loss in the affected alveolar process compared to 42.9% who had minor bone loss. Chances of having failed implants replaced were 20 times greater in patients who had little or no bone loss associated with the implant failure. Finally, the main patient-related reasons for not having failed implants replaced were additional costs, additional discomfort, fear of another failure, proximity to vital structures and medical status (in that order).

**Conclusions:** Patients are more likely to be willing and able to have a failed implant replaced if the implant is lost early and if the implant is removed as soon as it is diagnosed as having failed.

**Reviewer's Comments:** Obviously, there are a lot of reasons why implants can fail, and all of us who place implants will have failures (hopefully, not many). The information gathered in this retrospective study will be useful in helping us deal with our implant misadventures. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Failed Implants

Print Tag: Refer to original journal article
Objective: To determine the efficacy of a device that applies pressure to a specific point on the palm of the hand to alter the gag reflex.

Design: Retrospective clinical investigation.

Participants: 41 patients.

Methods: A hand pressure device was developed that placed a load sensor over the corresponding site on the palm of the hand associated with reduction in the gag reflex. The load sensor was then able to determine exact pressures applied to the site on the palm. All subjects were tested with a gag response sensor, and the subjects were divided into 2 groups: the hypersensitive group (n=7) and the control group (n=34). In all cases, the anatomical site in the mouth that initiated the gag reflex was recorded. A sham trial was performed utilizing a wrist pressure device, and the anatomical location that initiated the gag was again recorded. The palm pressure device was placed on the palm at the junction of the thumb and third finger. The anatomical location that initiated a gag reflex was recorded.

Results: Analysis revealed that there were no statistical differences noted as it relates to the location that initiated the gag reflex and the sham device. For all subjects in the hypersensitive and control groups, the gag reflex moved posteriorly. The hypersensitive group showed the greatest significant improvement when compared to the control group. It was also noted that the palm pressure device was effective on both the right and left palms.

Conclusions: Pressure applied to the center of the palm was effective in moving the gag trigger point posteriorly on all tested subjects. The changes in the hypersensitive group were found to be functionally significant.

Reviewer's Comments: We have reported on a number of different modalities shown to be effective in reducing or moving the gag reflex point, but in this investigation, no special devices would be necessary to alter a gag reflex. (Reviewer-David M. Grogan, DMD).

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Keywords: Gag Reflex

Print Tag: Refer to original journal article
In patients who are refractory to nonsurgical management, the disc can be mobilized in the TMJ by arthrocentesis and stabilization splint.

**Objective:** To evaluate the MRI changes in patients with TMJ anterior disc displacement and after arthrocentesis and stabilizing splint therapy.

**Participants/Methods:** A prospective study of 33 patients with the diagnosis of anterior disc displacement without reduction was performed. All had significant pain and limited mouth opening. Prior to any treatment, patients had an MRI and were then subjected to arthrocentesis and lysis and lavage followed by a stabilization splint. All patients had a follow-up MRI at a mean time of 9 months after surgery. Pain and maximum mouth opening were statistically compared with the preoperative measurements. MRI findings of disc mobility, disc position, joint effusion, and bone marrow edema were compared preoperatively and postoperatively.

**Results:** There was a significant reduction in pain and a significant increase in mouth opening following arthrocentesis. MRI findings showed a number of discs that were in a more normal position and a significant number of discs, which now had morbidity, that were immobile before the surgical procedure.

**Conclusions:** Arthrocentesis and stabilization splint improved maximum mouth opening and markedly reduced pain. There was a significant change in the disc position to a more normal position as well as reduction in joint effusion and bone marrow edema.

**Reviewer's Comments:** This result is contrary to the many previously published results that showed no significant change in disc position following arthrocentesis. However, the number of patients in this study was not large and the improvement in pain and movement were significant, but the changes in disc position were small. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: TMJ Internal Derangement

Print Tag: Refer to original journal article
Patient survival with craniocervical necrotizing fasciitis without thoracic extension depends on rigorous debridement and wound care, broad spectrum IV antibiotics, and ICU monitoring and support.

Objective: To evaluate the authors’ experience with craniocervical necrotizing fasciitis and to determine factors affecting thoracic extension, morbidity, and mortality.

Design: Retrospective records review.

Participants: 20 patients with craniocervical necrotizing fasciitis.

Methods: The 20 patients included in the study were identified from a group of 660 patients who had been treated for necrotizing fasciitis or other major infections in the authors’ institution. All subject patients were >18 years of age and had progressive deep neck space infections identified clinically and radiographically, as well as surgical evidence of necrotizing fasciitis of the head, neck, and thoracic regions. Data collected included patient demographics, admission date, length of hospital stay, ICU days, presenting signs and symptoms, CT scan findings, microbiology, type and duration of antimicrobial therapy, infection source, thoracic extension, comorbidities, surgical interventions, complications, and outcomes. Patients were grouped as either having or not having thoracic extension of their infectious process.

Results: 10 patients (50%) had radiographic evidence of thoracic extension of their infection confirmed by positive bacterial cultures taken during surgical debridement in 9 of the 10 patients. Dental infections were the most common cause of the process in both groups. Presenting signs and symptoms were facial and neck edema, subcutaneous emphysema, pain, and toothache. Average time from onset of symptoms to hospital presentation was 3.6 days for patients with thoracic extension and 7 days for those without. Radiographic findings for patients with thoracic extension included soft tissue inflammation, edema, and fat stranding in the mediastinum. Pleural effusion was noted in 86% of the patients with thoracic extension. Just 3 of 10 patients in each group were noted to have fluid or abscess collections on preoperative CT scans. Microbiology in both groups was similar with both aerobic and anaerobic flora. Antimicrobial therapy was started immediately to cover gram-positive, gram-negative, and anaerobic organisms. Surgical debridement was needed in >50% of both groups as was tracheostomy. Length of hospital and ICU stays were almost equal in both groups (21 days in the hospital, 11 days in ICU). Mortality was 40% for patients with thoracic extension. Comorbidities included diabetes, alcoholism, and hypertension.

Conclusions: Dental infections are a common cause of craniocervical necrotizing fasciitis. Patients with thoracic extension of this process have poorer clinical outcomes with sepsis, disseminated intravascular coagulation, and multiple organ failure the usual cause of morbidity.

Reviewer's Comments: We have seen and treated more of this type patient in recent years than ever before. Treatment protocols include good wound care, broad spectrum IV antibiotics, aggressive surgical debridement, fluid management, and vigilant ICU care. Good review article! (Reviewer-Sterling R. Schow, DMD).

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Keywords: Craniocervical Necrotizing Fasciitis

Print Tag: Refer to original journal article
Surgical revision of tissue overgrowth of temporal bone implants may be avoided by topical application of clobetasol steroid gel.

**Objective:** To report the authors’ experience with topical clobetasol, a 0.05% steroid gel, in the treatment of soft-tissue overgrowth of temporal bone implants for bone-anchored hearing aids.

**Design:** Clinical experience; retrospective analysis.

**Participants:** 88 patients with temporal bone implants for bone-anchored hearing aids.

**Methods:** The records of all patients who had bone-anchored hearing aid implants and abutments in the authors’ institution over a 4-year period were reviewed. The surgical technique for implant placement involved elevating an inferiorly based split-thickness or full-thickness skin graft over the mastoid bone with either removal or elevation of subcutaneous tissue leaving periosteum attached to bone. After implant and abutment placement, skin edges were undermined and sutured to periosteum leaving peri-implant periosteum exposed to be covered by the split- or full-thickness graft. Bone-anchored hearing aids were placed on the abutments 8 weeks later. If patients experienced skin overgrowth of the abutment, the overgrowth was treated either with topical clobetasol gel or revision surgery.

**Results:** 90 implants and abutments were placed in 88 patients; 26 patients were treated using a full-thickness skin graft and 64 with a split-thickness skin graft technique. The most common complication was skin overgrowth of the abutment, which occurred in 20 (22%) of the 90 sites. Eighteen of the 20 overgrowth situations occurred in sites covered with a split-thickness skin graft, usually when there had been incomplete graft survival. Thirteen of the 20 areas of overgrowth were treated with clobetasol cream 0.05% applied twice daily. Seven sites were treated with surgical revision procedures. Of the 13 clobetasol-treated sites, 11 (85%) had resolution of the skin overgrowth, with a mean treatment time of 7 weeks. Of the 7 sites of surgically treated overgrowth, 4 required multiple revision procedures.

**Conclusions:** Clobetasol can be used effectively to treat skin overgrowth on bone-anchored hearing aid abutments.

**Reviewer’s Comments:** For those of us who place implants for extraoral prostheses of any kind, this might be a valuable article. This paper not only demonstrates the effective use of clobetasol, it also nicely describes and illustrates the techniques the authors use for temporal bone implant placement. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Implants

Print Tag: Refer to original journal article
In patients with severe trauma, early intubation for both emergency and discretionary indications is safe and effective.

**Objective:** To evaluate the practice of early intubation of trauma patients and assess the outcomes and incidence of early intubations done for the Eastern Association for the Surgery of Trauma (EAST) published indications or at discretionary indications determined by attending trauma surgeons.

**Design:** Retrospective review of patient records.

**Participants:** 1000 consecutive trauma patient intubations within 2 hours of the patient's emergency department arrival.

**Methods:** Intubations based on the EAST recommendations were done because of airway obstruction, hyperventilation, severe hypoxemia, severe cognitive impairment with a Glasgow Coma Scale (GCS) score ≤8, cardiac arrest, and severe hemorrhagic shock. Other trauma surgeon discretionary intubations in the initial 2 hours included facial injury with potential airway risks, altered mental status, combativeness, respiratory distress, intoxication, and preoperative management. Details of the intubations were reviewed for indications, location of the intubation (trauma bay, operating room, etc), level and specialty of the intubator, route used, number of intubation attempts, and complications related to the intubation attempts. All reviews included patient age, gender, injury mechanism, Injury Severity Score (ISS), GCS score, length of hospital stay, and individual trauma surgeon's rates of intubation.

**Results:** 9.9% of the 10,137 trauma patients reviewed during the study were intubated within 2 hours of their arrival; 556 for EAST indications and 444 for trauma surgeon discretionary indications. Age and gender of the 2 groups were not significantly different. Patients with EAST intubation conditions were more severely injured than those intubated at the trauma surgeon's discretion and generally had a longer hospital stay and higher mortality rate. The most common reason for early intubation was an altered mental status, a discretionary indication accounting for 24.8% of the intubations. The second most common indication was an EAST intubation for hypoventilation or hypoxemia in 19.4%. These were followed by airway obstruction, cognitive impairment, combativeness, hemorrhagic shock, and preoperative management; 97% of the early intubations were done in the trauma bay. Successful oral intubation was accomplished for 99.2% of the patients, with 85.6% of intubations successful on the first attempt, and 38.2% intubations were performed by resident physicians. Only 0.7% of patients required a cricothyroidotomy; 11.6% of patients had intubation-related complications (eg, aspiration, oral trauma, hypoxemia, esophageal intubation, and mainstem bronchus intubation). Overall, 15.7% of the patients died as a result of their injuries, but not as a result of failure to secure an airway. Individual trauma surgeon intubation rates for discretionary reasons varied.

**Conclusions:** Early intubation of trauma patients for EAST or discretionary indications is safe and effective with minimal complications.

**Reviewer's Comments:** Nothing is more important than establishing and maintaining an effective airway. Surgical judgement is often important in deciding when early intubation is indicated. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Trauma

Print Tag: Refer to original journal article
Risk factors for localized osteitis are usually very clear, but may also be obscure. Prevention includes adherence to a meticulous surgical technique.

**Objective:** To provide a comprehensive review of the etiology, pathophysiology, and current treatment of "dry sockets."

**Results:** This interesting paper's authors searched the Medline database (Ovid version) for English language publications. Ultimately, 62 of 317 articles identified in the literature were selected for this review. The peak incidence of dry socket is in patients aged 40 to 45 years old at a rate of 1% to 4% for all tooth removals and 5% to 30% for impacted lower third molars. The incidence of dry socket for mandibular molar extraction sites is at least 10 times higher than that for maxillary molars. The typical dry socket is diagnosed 1 to 3 days after tooth removal, with a duration of 5 to 10 days. Clinical features include severe throbbing pain, bad breath, and a foul taste. Pain may radiate to the temple, ear, and neck, and responds poorly to both over-the-counter and narcotic analgesics. Etiologic factors for dry socket include bacterial infection, trauma, and biochemical agents, while risk factors include gender, age, extraction site, surgical trauma, and smoking. Additional risk factors include pericoronitis, high oral bacterial counts, and inadequate irrigation during surgery. Different types of local anesthetic solutions have also been implicated in increasing dry socket sites as have injection techniques, such as the use of repeated periodontal ligament injections. The authors reviewed the pre-, post-, and intraoperative use of antibiotics as preventive measures for dry socket. A number of antibiotics used in various ways, but with different complications or contraindications, have been identified as sometimes helpful in prevention, but the more common frequently noted conclusion is that antibiotics, either systemic or placed in the surgical site, are not indicated in nonimmunocompromised patients. Chlorhexidine presurgical rinses have been helpful in reducing the incidence of dry socket. Dry socket treatment averages 7 to 10 days for exposed bone to be covered by granulation tissue. Patient discomfort during that time is usually treated with various packing materials and local irrigation.

**Conclusions:** Dry socket occurrence in everyday practice is not totally avoidable. Risk factors have been identified and can be reduced with good surgical technique and attention to detail.

**Reviewer's Comments:** An interesting review of a topic that is very familiar to us all. Preventive methods are important in avoiding the "dry socket." (Reviewer-Sterling R. Schow, DMD)
Sinus elevations with simultaneously placed or delayed placement of implants have good implant success rates. Smoking and complications like sinus membrane perforations increase the risks for implant failure.

**Objective:** To identify predictors of implant failure in the posterior maxilla.

**Design:** Retrospective cohort study.

**Participants:** 136 patients who received posterior maxillary implants.

**Methods:** All patients had a baseline radiograph taken on the day of implant surgery. The fate of the implants was determined by subsequent chart reviews and from clinical evaluations and radiographs. Information gathered included patient demographics, smoking history, implant dimensions, surgical techniques, surgical complications, and both early and late implant failures. Two separate groups of patients were considered, those who had a sinus elevation procedure for implant placement and those who had an adequate amount of native posterior maxillary alveolar bone to accommodate implants.

**Results:** 273 rough surface implants were placed in the posterior maxillae of the 136 patients; 42.6% of the patients were females. The mean patient age was 54.21 years. For the most part, the patients were healthy, but 5.1% were well controlled diabetics in whom 19 implants were placed, and 32 implants were placed in smokers. Approximately 19.9% of the patients had complications, 16 with sinus membrane perforations and 11 with post-surgical infections; 57 patients had sinus lifts and placement of 116 implants. Sinus grafts were usually bovine bone. Seventy-nine patients had 157 implants placed in native posterior maxillary bone with no sinus elevation procedure. In all, 14 implants failed in 13 patients (8 early before loading and 6 others after prosthetic loading). Nine implants failed in areas of sinus elevation, 5 in the native bone group; survival rates were 92.2% and 96.7%, respectively. The differences in implant failure or survival were not statistically significant. The only predictors of implant failure were smoking and surgical complications, which had odds ratios for implant failure of 6.4 and 8.2, respectively.

**Conclusions:** This study found no significant differences for implant survival between implants placed in the posterior maxilla with or without surgically augmented sinuses. Sinus floor elevation is not an independent risk factor for implant failure.

**Reviewer's Comments:** Bone quality at the time of implant placement was not evaluated as a risk factor in this study. Of interest is that sinus elevations were done for implant placement as a 1-step, a 2-step, or an osteotome technique with no reported differences in implant success or failure documented for the various treatment techniques or sequencing. (Reviewer-Sterling R. Schow, DMD).

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**Keywords:** Implants

Print Tag: Refer to original journal article
Objective: To report complications associated with an anteriomedial approach to the tibia for bone harvest.

Design: Retrospective clinical investigation.

Participants: 40 patients.

Methods: All participants where children presenting for grafting of an alveolar cleft. In all cases, the anteriomedial tibia was the site of harvest. A stab incision was made medial to the midline of the tibial tuberosity. Minimal dissection was performed and bone was harvested via cortical penetration with a serrated cutting-end trephine. Cores were harvested in a fan-like fashion through the cortical penetration. In all cases, hospital notes were reviewed for intraoperative complications. Long-term follow-up to evaluate for post-harvest complications was performed via telephone interviews utilizing a standardized questionnaire.

Results: The mean patient age at the time of the harvest was 10 years, 6 months. The majority of patients (63%) had a unilateral cleft grafted. In most cases, the right tibia was the site of harvest, but in 23% of cases, the harvest was performed bilaterally. The mean follow-up interval was 4 years and 4 months. Review of the hospital record revealed 6 cases of short-term complications: pain (n=3); scarring (n=2); and wound infection (n=1). Phone interviews revealed 4 postoperative complications: extended pain (2 weeks) in 2 patients; difficulty with walking in 1 patient; and purulent discharge from the harvest site in 1 patient.

Conclusions: No long-term complications were seen with an anteriomedial approach to the tibia. The quantity and quality of bone was sufficient for alveolar cleft grafting.

Reviewer's Comments: A very interesting preliminary investigation for this harvest site. The one concern I have is the logistics of this harvesting site. Since the complication rates were very similar to the lateral approach, it seems cumbersome to harvest from the medial site. (Reviewer-David M. Grogan, DMD).

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Keywords: Donor Site Complications

Print Tag: Refer to original journal article
Nasoseptal cartilage appears to be a good autogenous tissue for grafting orbital floor defects.

**Objective:** To report the outcomes of nasoseptal cartilage utilized in grafting orbital floor defects.

**Design:** Retrospective clinical investigation.

**Participants:** 20 patients.

**Methods:** All patients presented for surgical correction of orbital floor defects associated with facial trauma. All defects involved >50% of the orbital floor. The orbital floor was approached in a routine fashion. The defects were measured to insure that the appropriate volume of graft was harvested. The nasal cartilage was harvested from the septum, and a nasal pack and splint were placed to prevent hematoma formation. The cartilaginous graft was placed to cover the entire floor defect, and none of the grafts were secured. The outcomes of the grafts were followed for a mean of 19 months with clinical and radiographic examinations.

**Results:** Radiographic analysis revealed that all of the grafts completely covered the floor defects, and follow-up revealed that none of the grafts had moved or had resorbed during the postoperative period. All preoperative ophthalmological abnormalities had resolved following the reduction of fractures and grafting of the floor defect. There was 1 case of enophthalmos following reduction and grafting. The etiology of the enophthalmos was secondary to poor reduction of the orbital fractures, not secondary to a failed graft.

**Conclusions:** Nasoseptal cartilage is a good autogenous tissue for grafting orbital floor defects. There was no morbidity associated with the harvest, and none of the grafts became infected or displaced.

**Reviewer's Comments:** A very good paper with good follow-up revealing the success of a cartilaginous graft to the orbital floor. I still prefer to utilize a plate or alloplastic material to avoid the potential complications associated with the donor site. (Reviewer-David M. Grogan, DMD).

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Keywords: Traumatic Fractures

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Periosteal and floor of mouth musculature are to blame for lingual tipping.

**Objective:** To determine the amount of vertical gain and lingual tipping of anterior mandibular segments distracted due to mandibular atrophy.

**Design:** Retrospective clinical investigation.

**Participants:** 34 patients.

**Methods:** All patients had Cawood V-VI mandibles and poor retention of their mandibular denture. In all cases, the distractors were placed in a routine fashion. A latency period of 7 days was followed by activation at a rate of 0.5 mm/day. After the maximum distraction had been completed, a consolidation period of 12 weeks was utilized. Following consolidation, the distractor was removed and 2 endosseous implants were placed in the region of the cuspids. After 3 months, the implants were exposed and a bar-retained overdenture was fabricated. Cephalometric films were taken at the following times: prior to distractor placement, immediately after placement, at the start and end of the distraction period, at the end of consolidation, and on a yearly basis.

**Results:** The average height of the anterior mandible prior to distraction was 12.5 mm (range, 7.3 to 15.8 mm). The average gain in height following the distraction was 6.1 mm (range, 3.3 to 8.5 mm), with the resultant average ridge height following distraction of 18.5 mm (range, 13.9 to 22.4 mm). In all but 1 case, the distracted segment showed lingual tipping with a mean of 12% and a range from 0° to 30°. The lingual tipping meant that only 87% of the maximum height was realized.

**Conclusions:** In all but 1 of the cases, lingual tipping of the distracted segment was noted. The mean lingual tipping of the distracted segment was 12°. The pull of the mylohyoid and tongue along with the tension created by the lingual periosteum resulted in lingual tipping. The lingual tipping resulted in a loss of true vertical gain.

**Reviewer’s Comments:** The results of this paper are consistent with what I have seen with distraction of the anterior mandible. The distraction in this paper was performed with a unidirectional distractor, but the results I have seen with a multi-directional distractor appear similar. (Reviewer—David M. Grogan, DMD).

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Keywords: Mandibular Atrophy

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Approximately 95% of responding surgeons recommend medical treatment with carbamazepine as the first line of treatment of trigeminal neuralgia.

Objective: To present the current methods of assessment and treatment of trigeminal neuralgia in the United Kingdom.

Design: Questionnaire-based investigation.

Participants: 297 consultant oral surgeons.

Methods: A questionnaire was mailed to all consultant oral surgeons listed by the British Association of Oral and Maxillofacial Surgeons. Questions asked were related to the methods used in the assessment and treatment of patients presenting with symptoms consistent with trigeminal neuralgia. The responses were compared to the results achieved by Pemberton in 2001. A MEDLINE search was also performed to establish best practice results in the assessment and treatment of trigeminal neuralgia.

Results: 178 (60%) of the oral surgeons responded to the questionnaires; 92% included an evaluation of the cranial nerves in their evaluation, and the imaging of choice was an MRI. Ninety-five percent of surgeons stated that they initiated medical management as their first line of treatment, while 3% stated that their first line of treatment was a peripheral nerve operation and 2% stated that they made a direct referral to a neurosurgeon; 93% stated that their initial management consisted of a drug treatment with carbamazepine. Other drug therapies consisted of gabapentin and phenytoin. If the medical treatment failed, 59% attempted alternative medical treatment, 68% considered a peripheral nerve procedure, and 57% would make a referral to a neurosurgeon. Peripheral nerve procedures consisted of cryotherapy, neurectomy, or injection with alcohol, glycerol, or phenol.

Conclusions: The current standard of care suggests that all patients presenting with trigeminal neuralgia undergo an initial therapy of carbamazepine, which 93% of responding surgeons recommended. Peripheral nerve procedures are looked at as short-term alternatives to alleviate pain and should only be considered when patients reject neurosurgery.

Reviewer's Comments: A very nice survey and review of the current literature on the subject. It is nice to know that there is continuity between our British colleagues and us recommending medical therapy as the first line of treatment. (Reviewer-David M. Grogan, DMD).

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Keywords: Trigeminal Neuralgia

Print Tag: Refer to original journal article
Treatment of chronic lip fissures appears to be a safe and efficacious method of treatment.

**Objective:** To determine the efficacy and safety of treating chronic lip fissures with a carbon dioxide laser.

**Design:** Retrospective clinical investigation.

**Participants/Methods:** 11 patients presented for the treatment of long-standing lip fissures. There were 12 fissures in the 11 patients involved in this study. All were treated with a power setting of 18 watts, a spot width of 3 mm, and a pulse of 0.2 seconds. The first pass was made over the fissure, and then subsequent passes were made on either side of the fissure with as little overlap as possible. The fourth and final passes were made over the original site of the fissure. All wounds were dressed in soft paraffin.

**Results:** The majority of fissures were associated with males and located in the middle of the lower lip. None of the patients had a family history of lip fissures, and all had failed to see resolution with topical treatments. Ten of the treated fissures re-epithelialized completely within 6 weeks with no evidence of hypertrophic scarring. Two fissures failed to re-epithelialize within 6 weeks and were re-treated successfully. Patients were followed for a mean of 70 months. During that follow-up period, 1 fissure had recurred, but healed spontaneously.

**Conclusions:** Treatment of chronic lip fissures with a carbon dioxide laser appears to be a safe and efficacious method of treatment. Nine of the 11 fissures healed without incident, and 2 required retreatment. No untoward scarring was evident during the follow-up period.

**Reviewer's Comments:** A nice initial pilot study showing the safety of laser treatment. Some of these persistent fissures are difficult to eliminate, even with local excision, so this appears to be a viable treatment alternative. (Reviewer-David M. Grogan, DMD).

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Keywords: Chronic Lip Fissures

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