When given subcutaneously twice a year, denosumab reduced the incidence of vertebral, non-vertebral, and hip fractures in osteoporotic women with no adverse effects on fracture healing or cases of jaw osteonecrosis.

Objective: To evaluate denosumab, a human monoclonal antibody against the receptor activator of nuclear factor-κB (RANKL), a cytokine essential for formation, function, and survival of osteoclasts, as a treatment for osteoporosis in postmenopausal women.

Design: International, randomized, placebo-controlled trial.

Participants: 7868 women between the ages of 60 and 90 years with a bone mineral density T score of less than -2.5 at the lumbar spine or total hip.

Methods: 3933 patients treated with denosumab and 3935 controls were given subcutaneous injections of 60 mg denosumab or placebo every 6 months for 36 months after random assignment to treatment groups. All subjects received daily calcium supplements of at least 1000 mg as well as 800 IU vitamin D. Lateral spine radiographs were taken each year and were assessed for vertebral fractures. Subjects were also followed up for non-vertebral fractures. Bone mineral density was measured at baseline and then annually at the hip and lumbar spine. A committee of experts evaluated all subjects for adverse events, assessed the healing of non-vertebral fractures, and looked for denosumab-specific antibodies in serum collections. Side effects were also recorded.

Results: The groups were similar at baseline with mean bone mineral density T scores of -2.8 at the lumbar spine, -1.9 at the hip, and -2.2 at the femoral neck. Twenty-four percent of subjects had a vertebral fracture at baseline. Eight-two percent of subjects completed the 36-month study, and 76% received all the planned injections of denosumab. New radiographic vertebral fractures were seen over the 36 months in 7.2% of the placebo patients and only 2.3% of the study patients—a 68% reduction in relative risk. The drug also reduced the risk of non-vertebral fracture by 20% and the risk of hip fracture by 40%. After 36 months, the drug resulted in a relative increase of bone mineral density of 9.2%. At the same time, there were no significant differences in adverse events or the incidence of cancer, cardiovascular events, or infections. No cases of jaw osteonecrosis occurred in either the placebo or denosumab groups.

Conclusions: Subcutaneous, twice-annual 60-mg doses of denosumab for 36 months significantly decreased the risk of vertebral, non-vertebral, and hip fractures in postmenopausal, osteoporotic women while increasing bone density. This drug will be an alternative to osteoporosis treatment currently being used by decreasing bone resorption and increasing bone density through inhibition of RANKL.

Reviewer's Comments: In this study, there were no adverse effects on fracture healing and no cases of jaw osteonecrosis. There has yet to be a head-to-head trial comparing denosumab and the bisphosphonate drugs. The Food and Drug Administration (FDA) study committee has recommended denosumab for FDA approval. In addition, the next issue of this journal contains several good discussion letters about this article. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Denosumab, Osteoporosis

Print Tag: Refer to original journal article
3D-CT Shows Contact Between Third Molars and Inferior Alveolar Nerve

Assessment of the Relationship Between Impacted Mandibular Third Molars and Inferior Alveolar Nerve With Dental 3-Dimensional Computed Tomography.

Nakayama K, Nonoyama M, et al:


When a panographic film shows a close relationship between a third molar and the inferior alveolar nerve, a 3D-CT will clearly show if there is contact between the structures.

Objective: To evaluate the effectiveness of 3D-CT in predicting contact between the inferior alveolar nerve and a mandibular third molar and indicating the likelihood of nerve injury with extraction.

Design: A retrospective review of the records of patients who presented for removal of mandibular third molars.

Participants/Methods: 1539 patients with 1853 mandibular third molars were entered into the study. All patients had preoperative panoramic films that showed a likelihood of contact between the inferior alveolar canal and the third molar root, and 3D-CT was performed. The predictive variable was the anatomic relationship of the inferior alveolar nerve and the root of the third molar, which was determined as being in contact or not in contact. The primary outcome variable was nerve exposure at the time of surgery. The secondary outcome variable was nerve injury.

Results: 53 third molars in 47 patients were sufficiently suspicious of contact that CTs were performed. The third molar was thought to be in contact by the CT image in 35 cases. At the time of surgery, nerve exposure was observed in 17 of these patients. Eight of these patients subsequently had injury. Injury to the inferior alveolar nerve occurred in only 2.9% of cases in which there was no nerve exposure at the time of surgery. All 8 cases with nerve injury were included in the cases that showed contact on the CT scan.

Conclusions: Contact of the inferior alveolar nerve and root apices as seen on a 3D-CT scan results in a high incidence of nerve injury during extraction.

Reviewer's Comments: This is a very interesting study. A 3D-CT scan can clearly show contact between a mandibular third molar and the inferior alveolar canal; however, there are no data in this study to determine the additional expense of doing this procedure and whether this would justify its routine use in third molar surgery. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Dental Alveolar Surgery, Diagnosis

Print Tag: Refer to original journal article
Objective: To determine the global epidemiology of infections occurring in ICUs.
Design/Participants: A prospective, multicenter point prevalence investigation involving 14,414 patients.
Methods: 1265 ICUs participated in the Extended Prevalence of Infection in Intensive Care, which was held on May 8, 2007. For a 24-hour period, all participating ICUs provided the following information on all ICU admissions: demographic, bacteriological, physiological, and therapeutic data. Participating centers were required to provide all data on all patients until the patient was discharged or for 60 days. Infection was defined according to the International Sepsis Forum, and patients were categorized according to their etiology of admission: trauma, elective surgery, emergency surgery, or medical.
Results: 1265 ICUs participated from 75 countries, with the majority being from Western Europe. During the 24-hour period 14,414 patients were present in the ICUs. Of these, 13,796 were adults; 62% were surgical admissions, and 52% had at least 1 comorbidity. Fifty-one percent (7087 adult patients) were considered infected on the day of the survey; 71% were being treated with antibiotics, and 16% were treated with antifungals. The lungs were the most common site of infection (64%), followed by the abdomen (20%), blood (15%), and renal genitourinary (14%). Seventy percent of patients had positive microbial data, with the majority being gram negative. There was a positive correlation between the number of days in the ICU before the study began and the rate of infection. Also, the number of comorbidities correlated with a greater percentage of acquiring an infection. Infected patients had a higher rate of mortality. Africa had the lowest infection rate (46%), and Central and South America had the highest (60%).
Conclusions: Infections are common in modern ICUs, and the rate of infection increases with the duration of stay. The most frequent site of infection was the lungs. Infection was also associated with a higher mortality rate, twice that of noninfected patients.
Reviewer’s Comments: A very well-done and eye-opening study, with a take-home message that says to get your patients out of the unit as soon as possible. (Reviewer-David M. Grogan, DMD).

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Keywords: Infection, ICU

Print Tag: Refer to original journal article
Eminectomy vs Miniplate Placement for TMJ Dislocations

Treatment of Chronic Mandibular Dislocations: A Comparison Between Eminectomy and Miniplates.


Eminectomy is more consistently successful in treating dislocation of the TMJ than the placement of miniplates, which tend to fracture.

Objective: To compare eminectomy and miniplate placement for the management of chronic mandibular dislocation, and to perform a critical review of the literature.

Design: Retrospective review of the records of patients treated for chronic TMJ dislocation by either eminectomy or the placement of miniplates.

Methods: The records of 18 patients treated for chronic TMJ location were reviewed. Ten patients with 20 joints were treated with eminectomy, and 8 patients with 16 joints were treated with the placement of a 2-mm miniplate. Panoramic radiographs and conventional tomograms were taken preoperatively and postoperatively, along with a thorough history and physical examination. Preoperative and postoperative measurements of maximum mouth opening, frequency of dislocation, patient age, gender, the presence of pain, and joint noise were all part of the data collected. MRIs were used to determine joint damage in 3 of the eminectomy patients postoperatively. Mean follow-up for eminectomy patients was 37 months (range, 2 to 63 months). For miniplate patients, the average follow-up was 59 months (range, 48 to 69 months). The incidence of facial nerve injury was recorded at follow-up.

Results: There was a decrease in maximum mouth opening in the eminectomy patients and an increase in maximum mouth opening in the miniplate patients. In 2 of the miniplate patients, the plate fractured postoperatively, requiring removal and reoperation. There were no recurrences of dislocation in the eminectomy patients. No major complications were found in this group, and no nerve damage occurred in either group.

Conclusions: Eminectomy has a slight advantage over the placement of a miniplate due to the possibility of fracture of the plate in this group.

Reviewer's Comments: This is an interesting study showing that eminectomy in this group of patients was 100% successful with no significant complications. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: TMJ, Dislocation, Eminectomy, Miniplates

Print Tag: Refer to original journal article
Does Platform Switching Really Help Preserve Peri-Implant Crestal Bone?


Crespi R, Capparè P, et al:

Int J Oral Maxillofac Implants 2009; 24 (September-October): 920-926

Immediate implant placement in extraction sites immediately loaded using a platform-switching versus a non-platform-switching technique does not result in differences in crestal bone level changes.

Objective: To compare, after 2 years, the marginal bone around implants restored with conventional abutments to those restored with a platform-switched assembly.

Design: Prospective clinical study.

Participants: 45 patients needing removal and replacement of 1 or 2 single-rooted teeth.

Methods: All 45 patients needed 1 or 2 single-rooted teeth removed and were randomly assigned to 1 of 2 groups. One group received 34 implants at the time of tooth removal with an external hexagon abutment connection. The other group received 30 implants with a narrower platform-switched abutment connection. All implants were placed immediately when the teeth were removed, and all were immediately loaded. Flaps were not elevated during surgery. All osseous walls of each extraction site were present without defects. The implants were all placed with the apical ends at least 4 mm beyond the root apex. The residual gap between the socket walls and the implant surface was no greater than 2 mm. Some implants had a machined surface neck and an improved rough body surface. Others had an entirely rough surface. Insertion torque for all implants was at least 35 Ncm. Follow-up visits were completed 1, 3, 6, 12, and 24 months after the procedures. Digital radiographs were made at implant placement and 12 and 24 months later. A blinded radiologist evaluated all sites for marginal bone changes.

Results: All the implants in both groups survived and had acceptable wound healing. Provisional crowns were replaced with definitive cemented restorations 6 months later. At 12 months, implants with a standard abutment connection had a mean overall bone loss of 0.82 mm and were essentially unchanged at 24 months. Platform-switched implants had a mean 0.78 mm loss at 12 months, which was essentially unchanged at 24 months. There was no significant difference in marginal bone loss between the 2 groups at either 12 or 24 months after extraction, immediate implant placement, and immediate loading.

Conclusions: Immediate placement and restoration of implants in a single-tooth (1 root) extraction site is predictably successful. This study showed no difference in crestal bone loss between platform-switched and conventional external-hexagon restored implants after 12 and 24 months of follow-up.

Reviewer's Comments: A really nice clinical study and well-presented paper. This is the first article I've seen that clearly demonstrated no difference in results between the 2 loading protocols. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Implants, Immediate Loading

Print Tag: Refer to original journal article
What are the British Seeing?
A Survey of Consultant Members of the British Association of Oral and Maxillofacial Surgeons Regarding Bisphosphonate-Induced Osteonecrosis of the Jaws.
Rogers SN, Hung J, et al:

This survey seems to show that the incidence of BONJ from both oral and IV agents is a growing clinical problem.

**Objective:** To determine the number of surgeons who are screening patients prior to initiation of bisphosphonate therapy and utilizing antibiotics prior to extractions and to estimate the number of new cases and the percentage of healing of previously diagnosed cases.

**Design:** A questionnaire survey.

**Participants:** 322 oral surgery consultants.

**Methods:** Questionnaires were sent to all consultant oral surgeons listed in the British Association of Oral and Maxillofacial Surgeons. If no response was generated, another copy of the questionnaire was mailed and reminders were sent every 3 weeks. Questions surveyed the following questions: (1) Do you stop bisphosphonates prior to an extraction and if so, when do you restart them? (2) Do you use antibiotics when extracting mandibular first molars and if so, which one? Do you use chlorhexidine mouthwash?

**Results:** 184 (57%) of surgeons responded to the questionnaire. Only 15% of responders stated that they had screened a patient in the last 3 months who was about to begin an IV bisphosphonate. Among the responders, 29% stated that their hospitals had existing protocols for the treatment of patients on oral or IV agents, and 17% of responders stated that they stop oral agents prior to an extraction; 39% stop an IV agent prior to extractions. If they recommended stopping the agent, the majority restarted the agent when healing had occurred. The vast majority used antibiotics following an extraction and the primary agent was Augmentin. Approximately 74% had seen new cases in the last year of patients on oral agents, and 68% stated that they were currently managing patients with bisphosphonate osteonecrosis of the jaws (BONJ) secondary to oral agents. For BONJ secondary to IV agents, 64% had seen new patients in the last year, 62% were currently managing patients, and approximately 20% of cases were estimated to be healed.

**Conclusions:** In the last 3 years, approximately 75% of responders had seen new cases of BONJ secondary to oral agents. The results in this investigation seem to point out that the overall incidence of BONJ is a growing problem.

**Reviewer's Comments:** This is a very enlightening paper even though it was a survey without much science behind it. The one take-home point is that there still is not a lot of really hard data to support the treatment of BONJ. The results were really scattered as it relates to stopping agents, when to restart, and the use of antibiotics following an extraction. (Reviewer-David M. Grogan, DMD).

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Keywords: Jaws, Bisphosphonate-Induced Osteonecrosis

Print Tag: Refer to original journal article
The presence of erupted mandibular third molars heralds the increased incidence of periodontal disease in the remaining dentition among older Americans.

Objective: To investigate the association between erupted mandibular third molars and the incidence and severity of periodontal pathology in the remaining dentition.

Design: Longitudinal cohort study of patients enrolled in 4 clinical sites across the country.

Participants/Methods: Patients aged 52 to 74 years and enrolled in the Dental Atherosclerosis Risk In Communities study from 4 distinct clinical sites were included. Oral examinations were conducted by trained calibrated examiners with probing depths at 6 sites around each tooth including the third molars. Probing depths $\geq 4$ mm and a clinical attachment level of $\geq 3$ mm were indicators for periodontal pathology. Experimental variables included the presence or absence of visible third molars. Other variables were gender, ethnicity, age, income level, education, and smoking status. The probing depths of $4$ mm or attachment levels of $3$ mm were compared between those with or without visible third molars. A total of 6,793 subjects were enrolled in the study, and 30% of the subjects had at least 1 visible third molar.

Results: The presence of visible third molars was significantly associated with male gender, black race, a younger age than the mean for the group, greater income, and no history of smoking. The probing depth was significantly greater in the first and second molar region in patients with visible third molars than in patients without visible third molars.

Conclusions: The presence of an erupted third molar was significantly associated with a probing depth of $\geq 4$ mm and an attachment depth of $\geq 3$ mm anterior to the third molar indicating a greater presence of periodontal pathology.

Reviewer's Comments: This again is a valuable study giving information for advising patients on the danger of retaining erupted third molars throughout life. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Erupted Third Molars, Periodontal Pathology

Print Tag: Refer to original journal article
Improving Neurologically Intact Survival Rates


Bobrow BJ, Ewy GA, et al:


Minimally interrupted cardiac resuscitation with initial passive ventilation as compared to bag-valve-mask ventilation in ventricular fibrillation may improve neurologically intact survival rates.

**Objective:** To compare adjusted neurologically intact survival of out-of-hospital cardiac arrest patients receiving initial passive ventilation versus patients receiving initial bag-valve-mask ventilation.

**Design:** Retrospective evaluation of out-of-hospital cardiac arrest patients who received initial resuscitation with minimally interrupted CPR, including uninterrupted preshock and postshock chest compressions, initial noninvasive airway management, and early epinephrine with patients whose initial resuscitation included bag-valve-mask ventilation.

**Participants:** 1019 out-of-hospital cardiac arrest patients were included in the study.

**Methods:** Resuscitation procedures were essentially the same for all patients, except for the method of providing for ventilation. Paramedics on the scene selected the method of initial noninvasive ventilation. Passive ventilation consisted of oropharyngeal airway insertion and high-flow oxygen by non-rebreather face mask without assisted ventilation. In the other cardiac arrest victims, resuscitation included bag-valve-mask ventilation at 8 breaths per minute. Victims' neurologically intact survival was determined from hospital records and public records, mail questionnaires, and telephone interviews.

**Results:** 459 of the arrest patients received passive ventilation and 560 were ventilated by bag-valve-mask. The adjusted neurologically intact survival after these witnessed out-of-hospital arrests was higher when passive ventilation was used (38.2%) than when bag-valve-mask ventilation was initiated (25.8%). Unwitnessed out-of-hospital cardiac arrest survival rates between passive and bag-valve-mask ventilation with CPR were not significantly different at 7.3% vs 13.8%, respectively. All arrests included in the study were characterized as either ventricular fibrillation or ventricular tachycardia.

**Conclusions:** For adult, witnessed, out-of-hospital cardiac arrests with ventricular fibrillation/ventricular tachycardia, minimally interrupted cardiac resuscitation with initial passive ventilation was superior to initial bag-valve-mask ventilation in achieving neurologically intact survival.

**Reviewer's Comments:** Initial passive ventilation during CPR for witnessed ventricular fibrillation out-of-hospital cardiac arrest nearly doubled survival achieved with bag-valve-mask ventilation. This was not, however, an advantage in arrests with nonshockable rhythms. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Systemic Disorders, Out-of-Hospital Cardiac Arrest, Neurological Status, Ventilation

Print Tag: Refer to original journal article
Cessation of smoking significantly reduces the risk of an unfavorable event, recurrence or development of new premalignant lesions, and the development of malignancies.

**Objective:** To determine if quitting smoking reduces the risk of recurrence or the development of new premalignant lesions.

**Design:** Retrospective clinical investigation.

**Participants/Methods:** 51 patients presenting for evaluation of oral lesions, leukoplakia, or erythroplakia were included. All lesions were biopsied and a histological diagnosis of a premalignant lesion was confirmed. Seven patients had multiple premalignant lesions and 39 had a single premalignant lesion. All patients were smokers, and at the time of biopsy, all patients were advised to quit smoking. Patients were followed every 3 months during the first year and then yearly throughout the study period. During the follow-up period, patients were divided into smokers and quitters. The recurrence of the initial lesion, development of new premalignant lesions, or the development of malignancies was documented over the study period.

**Results:** 71% of the initial lesions were homogeneous leukoplakia; the floor of the mouth was the most common site followed by the ventral surface of the tongue and gingiva. The mean follow-up was 56.6 months (range, 4 to 230 months). Twenty-five percent developed recurrences, 16% were diagnosed with new lesions, and 10% developed carcinomas during the follow-up period. Thirty-one percent of patients quit smoking and 69% continued to smoke. Thirty-three percent of those who continued to smoke developed a recurrence versus 6% in the quitters group. Eight new lesions and 5 carcinomas were found in the smokers group and no new lesions or carcinomas developed in the quitters group. Statistical analysis revealed that quitting smoking was the most significant variable as it relates to the development of new lesions or malignancies.

**Conclusions:** Patients who quit smoking at the time of original diagnosis of a premalignant lesion had a significantly lower rate of an unfavorable event, recurrence, new lesions, or the development of malignancies. Convincing patients to quit smoking should be a part of the treatment for all patients presenting with premalignant lesions.

**Reviewer’s Comments:** This is a very well done investigation with good data supporting the need to convince all patients to quit smoking, especially if they present with premalignant lesions. (Reviewer-David M. Grogan, DMD).

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**Keywords:** Oral Lesions, Smoking Cessation, Recurrence, Malignancy

**Print Tag:** Refer to original journal article
It is possible to treat a linear mandibular fracture with a single AO locking reconstruction plate with a high degree of success.

**Objective:** To evaluate the success of a single Arbeitsgemeinschaft für Osteosynthesefragen (AO) 2.0-mm locking reconstruction plate for linear mandibular fractures.

**Design:** Prospective study of patients with linear mandibular fractures treated with a single 2.0-mm AO locking reconstruction plate.

**Participants/Methods:** 45 patients with 74 fractures of the mandible were prospectively analyzed. Variables included age and gender, mechanism of injury, delay between admission to the hospital and surgery, location of the fracture, use of maxillomandibular fixation, surgical approach, status of healing, and complications. Fracture healing and the presence or absence of complications was recorded. Minor complications were those that did not require a second operation, and major complications required further surgical intervention. Patients were treated through an intraoral approach, and a single reconstruction plate was placed at the inferior border of the mandible with 3 screws on each side of the fracture.

**Results:** All patients healed satisfactorily with no major complications. There was 1 fracture of a reconstruction plate, however, this did not result in failure for the fracture to heal and was removed 6 months after the original surgery.

**Conclusions:** Linear fractures of the mandible can be successfully treated with a single 2.0-mm AO locking plate without the use of a second plate at the superior border of the mandible.

**Reviewer's Comments:** This is a classic study showing that with today's locking plates, mandibular fractures can be treated successfully with the use of 1 plate. (Reviewer-Edwin D. Joy, Jr, DDS).

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Keywords: Linear Mandibular Fractures, Reconstruction, Plates

Print Tag: Refer to original journal article
Seat belt sign is an indicator of underlying regional injuries in almost 50% of the patients in whom it is seen and includes both hollow viscous injuries as well as solid organ trauma.

**Objective:** SBS, defined as contusions, bruises, or ecchymosis over the abdomen, chest, or neck corresponding to the site of seat belt restraints, was evaluated for associated regional injuries.

**Design:** Prospective assessment of patients in motor vehicle collisions (MVC) with documented seat belt restraint use.

**Participants:** Restrained and unrestrained MVC patients.

**Methods:** When MVC patients were admitted, the use or nonuse of restraints was documented. SBS was confirmed if contusions, bruises, or ecchymoses over the abdomen, chest, or neck corresponding to the seat belt location were noted. Restraint use or nonuse, the presence or absence of SBS in both groups, injury severity scores (ISSs), revised trauma score, Glasgow Coma Scale (GCS) score, and length of stay were recorded. Regional injuries were assessed for head, chest, abdomen, spine, and extremities for all patients. Patients with only minor injuries were excluded from analysis of regional injuries.

**Results:** 641 MVC patients were included in the study. Of these, 55% were restrained, 27% were not restrained, and 18% had no known restrained status. Restrained patients had a mean age of 36 years, and unrestrained patients had a mean age of 28.3 years. Unrestrained patients were generally the most severely injured with a higher ISS, lower GCS scores, and a higher mortality rate (5.7% vs 1.1%). Unrestrained patients suffered more rib injuries, hemopneumothoraces, head, and extremity injuries. SBS was seen in 21% of restrained patients. Patients with SBS had higher Revised Trauma Scores and higher GCS scores than restrained patients without SBS. In patients with SBS, there was a greater incidence of chest and abdominal trauma. However, in patients with SBS, there was a 7.7-fold higher incidence of hollow viscous injury than in patients without SBS. Blunt intestinal and mesenteric trauma was 9.8-fold higher, solid organ trauma 5.7-fold higher, splenic injuries 24-fold higher, and liver injuries 3.1-fold higher in patients with SBS than in those without.

**Conclusions:** Patients in MVCs with SBS should be closely observed, even if CT scans are normal. SBS is associated with a higher incidence of hollow viscous injuries, solid organ trauma, and rib fractures than is seen in patients without SBS.

**Reviewer’s Comments:** Like many papers of this type, the amount of data is considerable and sorting it out can be difficult. The message is important. Patients with SBS and what appear to be just minor injuries may have more significant, less initially obvious findings when closely evaluated. (Reviewer-Sterling R. Schow, DMD).

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A need for re-intubation of patients after surgery may be an indicator of significant complications.

**Objective:** To look at the incidence, risk factors, and prognosis of unplanned intubation after general and vascular surgery and the value of a regularly deployed hospital-wide emergency team in dealing with this problem.

**Design:** A review of the medical records of patients who required unplanned intubation.

**Participants:** 2426 patients requiring postoperative intubation (1815 before deployment of a 24-hour medical emergency team (preMET) and 611 postMET) were included.

**Methods:** Patients entered into the study were general or vascular surgery patients. The primary outcome evaluated was unplanned intubation after surgery with a secondary outcome of 30-day mortality. The reasons for unplanned intubation included respiratory or cardiac failure manifest by respiratory distress, hypoxia, hypercardia, or respiratory acidosis within 30 days of surgery. Risk factors for unplanned intubation reviewed included age, sex, race, type of surgery, and data from the patient's work-up evaluation including social history, functional status, and medical comorbidities. The 2 groups evaluated were the pre- and postMET groups whose 30-day mortality records were reviewed. Data collected included the location, postoperative day, and the reason for intubation; medical records were reviewed for vital signs, progress notes, and evidence of physiologic instability.Fatality rates were calculated.

**Results:** During the study period, 2426 patients had a general or vascular procedure with no significant differences between the preMET and postMET groups. Factors found to be associated with a risk for unplanned intubation in the postoperative period were severe chronic obstructive pulmonary disease, acute hospital care transfer patients, ETOH abuse, dependent functional status, previous cardiac surgery, and peripheral vascular disease. Interestingly, race, sex, ascites, and disseminated cancer were not significant risks, while a history of stroke/transient ischemic attack and dialysis approached, but did not reach, significance. No significant differences were found in unplanned intubation rates or 30-day mortality risks after deployment of the 24-hour MET. The average need for unplanned intubation was 3 days after surgery, and the overall mortality rate resulting was 43%. Sepsis was the most common underlying reason for unplanned intubation, with a risk of death in the re-intubated septic patients of 36%. The risk of death for patients needing unplanned intubation as a result of a cardiopulmonary event was 71%.

**Conclusions:** Unplanned intubation after surgery is uncommon, but when needed, it may be associated with adverse outcomes and high fatality rates. METs may not be effective for reducing the need for unplanned intubation or the associated complications.

**Reviewer's Comments:** Probably, good preoperative risk stratification, comprehensive monitoring, and vigilance by all surgical and nursing staff will be of the most benefit in avoiding this problem. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Unplanned Intubation, Risk Factors, Prognosis

Print Tag: Refer to original journal article
Objective: To evaluate patients with carotid artery calcifications detectable on panoramic radiographs and to estimate their need for referral to a vascular surgeon if they are not symptomatic.

Design: Clinical/radiographic study of carotid artery occlusive disease patients.

Participants: 40 consecutive patients with proven carotid artery occlusive atherosclerotic problems.

Methods: All 40 patients had carotid artery endarterectomies. Before the surgery, each patient had a panoramic radiographic examination. Carotid artery calcification was identified when radiopaque nodular radiopacities independent of the hyoid bone, epiglottis and cervical vertebrae were present at or above the C3-C4 intervertebral disc. The incidence of several known risk factors for stroke development was compared to patients in 2 groups, those who did and those who did not have carotid artery calcified plaques identified on their radiographs.

Results: 17 of the 40 patients were symptomatic before endarterectomy having had at least 1 cerebral ischemic event. Among these patients, calcifications were detectable on the panoramic radiographs of 15. Among the 23 asymptomatic patients, calcifications were found in another 13. In all, just 12 of the 40 patients who had needed a carotid endarterectomy did not have identifiable carotid artery calcifications. Of interest, patients who had calcified carotid plaques visible on radiographs had a lower incidence of diabetes and hyperlipidemia, but were still more likely to have had a cerebral ischemic event. However, there was no significant difference between patients with calcified or noncalcified plaques when age, smoking habits, hypertension, and coronary artery disease were considered.

Conclusions: Most patients who are symptomatic as a result of carotid artery plaque formation have already been diagnosed and hopefully treated. Asymptomatic patients who have calcified plaques in their carotids may be at high risk for stroke because their plaques have not been identified and treated. Timely referral of these patients should be done before they become symptomatic.

Reviewer's Comments: Asymptomatic patients at risk for carotid atheroma development are more apt to have a panoramic radiograph than they are a carotid ultrasound study. Patients identified with carotid artery calcifications on panoramic examination need a referral for further evaluation. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Pathology & Immunology

Print Tag: Refer to original journal article
Complications With FFF Mandibular Reconstruction.


Chaine A, Pitak-Arnop P, et al:


There is a relatively high incidence of minor and major postoperative complications after FFF mandibular reconstruction, but flap survival is high.

**Objective:** To evaluate the type and incidence of complications following fibular free flap (FFF) transfer for mandibular reconstruction.

**Design:** Retrospective records review and clinical evaluation.

**Participants:** 25 patients who had FFF mandibular reconstruction procedures were included.

**Interventions:** All patients had been followed a minimum of 12 months after FFF surgery. Preoperatively, the extent of the mandibular defect was determined by panoramic films, computed tomography, or both. Leg angiography was done to determine the adequacy of the donor site peroneal circulation. A lateral approach, muscle sparing harvest of the fibula was performed under tourniquet. At least 6 cm proximal and distal ends of the fibula were left in situ to maintain ankle and knee joint stability. Data collected for each patient included age at surgery, gender, diagnosis, defect location and size, flap ischemia time, fibula length, skin paddle size, graft osteotomies, anticoagulant regimen, length of hospital stay, follow-up visits and early and late postop complications.

**Results:** 19 of the 25 patients had immediate FFF mandibular reconstruction after trauma or ablative surgery; 12% of the patients had radiation therapy prior to reconstruction and 20% had post-reconstruction radiation treatment. Preoperative donor site angiography showed 1 to 4 perforator vessels. Skin paddles were harvested along with the fibula in 21 of the patients (average paddle size, 36 cm²). FFF donor sites were primarily closed for 24 of the 25 patients; a split thickness skin graft covered the 25th donor site. The mean number of fibula osteotomies was 1.6. Miniplates and screws fixed each osteotomy site or fibula/native mandible junction. Heparinized saline was used in donor and recipient vessels. Total flap ischemia time was a mean 225 minutes. Postoperatively, low molecular weight heparin was used for several days. Patients were in the hospital about 2 weeks and were non–weight-bearing for just 3 to 5 days; 56% of the patients had some postoperative complications. Two patients had to have salvage procedures and 2 had flap failures. Five skin paddles were partially or totally lost. Five patients developed orocutaneous fistulae. Radiation therapy had to be postponed for 5 patients. Late complications included malunion of fibula osteotomies in 3 patients, marked asymmetry in 2 patients, and nausea because of oral hair growth. There were no significant donor site morbidities.

**Conclusions:** In spite of what appears to be a high complication rate, the FFF for mandibular reconstruction is the procedure of choice for the authors because of the versatility of the procedure, especially in irradiated or poorly vascularized recipient areas.

**Reviewer's Comments:** This is a nicely designed study and a well written paper. The lengthy discussion is excellent. Minor complications early in the postoperative period can usually be effectively treated, especially as surgeons become more experienced with the procedure. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Grafts

Print Tag: Refer to original journal article
Objective: To prospectively evaluate a surgical protocol for immediate rehabilitation of edentulous maxillae with a fixed prosthesis.

Design: Open, single-cohort prospective clinical evaluation.

Participants/Methods: 20 patients with edentulous maxillae were consecutively enrolled in this study. All were ASA I or II status patients capable of having implant procedures. All had adequate anterior maxillary bone to place and support axially positioned implants (2) and enough bone in the anterior and posterior walls of the maxillary sinus for placement of angled implants at least of 4 x 10 mm dimension. Implant sites in most areas were slightly underprepared and were not countersunk to preserve crestal cortical bone; they also had implant insertion torques of at least 30 Ncm. A total of 120 Mark IV or Nobel Speedy Groovy implants were placed, 40 in fresh extraction sockets. The implants were immediately loaded with a transitional acrylic resin prosthesis within 4 hours of surgery. Final definitive restorations were placed 6 months later. Patients were followed every 6 months for 2 years and then yearly. At follow-up visits, periapical radiographs were taken to assess crestal bone level changes, periodontal examinations were completed and patient satisfaction levels were determined.

Results: Outcome measures included a 100% implant success rate with the same prosthetic success. All patients had an immediate provisional prosthesis placed. There were no significant surgical or prosthetic complications. All patients kept their scheduled follow-up visits, and ultimately, 83% judged their esthetic result as excellent or good and virtually all their ability to masticate food as very good or excellent. Marginal bone loss around the tilted and axial implants after 1 year of function was just 0.9 mm ± 0.5 and 0.8 ± 0.4 mm respectively, with the difference being insignificant.

Conclusions: A combination of axial and tilted implants in the edentulous maxilla will reliably support immediate loading with a transitional prosthesis.

Reviewer’s Comments: The authors emphasize the importance of adequate primary implant stability when considering immediate loading protocols. The paper’s discussion does a nice job of reviewing the many benefits of tilted implants. (Reviewer-Sterling R. Schow, DMD).

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Keywords: Implants, Edentulous Maxilla

Print Tag: Refer to original journal article
Anterior Maxillary Segment Distraction Effectively Treats Hypoplastic Maxilla


Anterior segment distraction on cleft lip/palate patients appears to be an effective measure to improve facial esthetics and increase the dental arch length.

**Objective:** To present preliminary data regarding the outcomes associated with distraction of the anterior maxillary segment in cleft patients.

**Design:** A prospective clinical investigation.

**Participants/Methods:** 7 patients presenting with significant maxillary hypoplasia secondary to cleft lip/palate and severe anterior dental crowding were included. Patients were assigned to 1 of 2 groups: distraction with bilateral internal distraction devices (n=3) or distraction with a rigid external distraction device (n=4). A circumvestibular incision was made, and the horizontal osteotomy was performed 5 mm above the apices of the maxillary teeth; the posterior vertical osteotomy was performed either between the cuspid and first bicuspid or between the bicusps. The segment was then mobilized and distractors were placed. Following a 5-day latency period, the devices were activated 4 times per day for a total 1-mm advancement per day. Following the distraction, the devices were left intact during the 9 to 16 weeks of consolidation.

**Results:** The mean segment advancement was 10.1 mm (range, 6 to 18 mm). The maxillary dental arch length was increased from 43.9 mm to 54 mm, creating enough arch length to orthodontically correct the dental crowding. No changes were noted in the length of the soft palate or the distance from the posterior nasal spine to the posterior pharyngeal wall. One internal distractor was lost due to infection following 7 mm of advancement. The distracted segment was then stabilized with rigid internal fixation.

**Conclusions:** Anterior maxillary segment distraction can effectively treat the hypoplastic maxilla associated with cleft lip and palate without affecting velopharyngeal competency. Dental crowding was also effectively treated by increasing the dental arch length.

**Reviewer’s Comments:** This is a very nice preliminary study on a very small number of patients. There are advantages and disadvantages associated with both Le Fort I and distraction of the anterior segment in this patient population, but this procedure appears to be limited to only cases in which there is no transverse deficiency. (Reviewer-David M. Grogan, DMD).

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Keywords: Maxillary Hypoplasia, Dental Crowding, Cleft Palate, Anterior Maxillary Segmental Distraction

Print Tag: Refer to original journal article
Most practitioners have insufficient knowledge and lack interest in treating patients with oral mucosal lesions.

Objective: To ascertain and analyze dentists’ knowledge of oral mucosal lesions.

Design: Questionnaire investigation.

Participants/Methods: 300 dentists were stratified into 1 of 3 groups, which included private practice, a large clinic setting, or a university setting. The 17-question questionnaire was administered to the participating dentists face-to-face by one of the authors. It covered the following topics: knowledge of mucosal lesions; difficulty in diagnosing lesions; biopsy techniques; treat or refer patients; and specific difficulty in recognizing specific oral lesions.

Results: Just over one-third of practicing dentists kept up with the literature on mucosal lesions, and no significant differences were noted between the 3 groups. The most common reason cited for failure to review current literature on the subject was "have no interest." Private practitioners and those in larger clinics saw more patients with oral lesions than did the university setting dentists. Over 60% of dentist in large clinics admitted "insufficient knowledge" in treating these patients. Approximately 50% of dentists admitted insufficient knowledge in proper biopsy techniques. The majority of the dentists that did perform biopsies sent the specimens to university centers for diagnosis. The most commonly prescribed treatment for oral lesions was an antiseptic mouth rinse followed by topical corticosteroids.

Conclusions: Most practitioners surveyed have insufficient knowledge regarding mucosal lesions and difficulties in making a proper diagnosis. Over 90% of those interviewed did not perform biopsies nor consult with specialists.

Reviewer's Comments: Even though this study was performed in Turkey, I do not think there would be many differences if the study was performed here. One has to have an interest in treating these patients and a desire to keep up with the literature. But it was still shocking to see that >90% of those surveyed were not knowledgeable of routine biopsy techniques. (Reviewer-David M. Grogan, DMD).

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Keywords: Oral Mucosal Lesions, Dentists’ Knowledge

Print Tag: Refer to original journal article
With further standardization of techniques, US may become a useful tool to aid in the diagnosis of TMJ disorders.

**Objective:** To determine if ultrasonography (US) is an appropriate aid in diagnosing TMJ disorders.

**Design:** Literature review.

**Methods:** A literature search was performed utilizing the terms ultrasonography and TMJ disorders. A total of 38 papers were initially designated as useful in determining the accuracy of US. Eighteen papers were excluded due to lack of scientific merit or case reports. Of the 18 papers that appeared to determine the accuracy of US, the majority reported the accuracy of diagnosing disc displacement followed by joint effusion and osteoarthrosis.

**Results:** In the majority of studies, the accuracy was compared to MR images. The early papers showed extreme variability in their accuracy to accurately diagnose, but the accuracy improved following the introduction of high-resolution US. Reports still show significant variability with disc positioning following the introduction of high-resolution US. Uysal's paper showed 100% agreement with MR images, while Manfredini's paper showed a sensitivity of 57% to 66% and a specificity of 74% to 80%. The ability of US in the detection of joint effusion results were also variable, with specificity ranging from 72% to 95%. The accuracy of US to detect condylar erosions ranged from 56% to 93%.

**Conclusions:** Ultrasonography has the potential for being a useful tool in the diagnosis of TMJ pathology; it remains dependent upon the skills of the technician, and imaging techniques need to become standardized.

**Reviewer’s Comments:** Once imaging techniques become standardized, one may see useful diagnostic information from US. If future results show greater specificity and accuracy, there may be a place for US since it is less expensive to perform compared to MRI. (Reviewer-David M. Grogan, DMD).

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Keywords: TMJ, Ultrasound

Print Tag: Refer to original journal article
Both blood loss and length of surgery are significantly less when a hypotensive anesthetic technique is used.

Objective: To evaluate changes in endocrine function, blood loss, and arterial blood gas profiles between 2 different techniques utilized for hypotensive anesthesia.

Design: Prospective, randomized, clinical investigation.

Participants/Methods: 36 patients (all were ASA I or II) presenting for a mandibular osteotomy were included. Patients were randomized into 1 of the following groups: group 1, normotensive anesthesia maintained with sevoflurane; group 2, hypotensive anesthesia with sevoflurane and sodium nitroprusside; or group 3, hypotensive anesthesia with sevoflurane and nitroglycerin. Routine vital signs were monitored. Additional monitoring consisted of the following: continuous arterial blood pressure; arterial blood gas analysis; and analysis of a blood sample at the end of the procedure for adrenocorticotrophic hormone (ACTH), cortisol, vasopressin, norepinephrine, dopamine, pyruvate, and lactate.

Results: The mean arterial blood pressure (MAP) during the hypotensive techniques was significantly lower than the normotensive sevoflurane group. Heart rate was not significantly different in the 3 groups. ACTH and norepinephrine were both significantly increased in all 3 groups, but no differences were noted among the groups. None of the other hormones investigated showed any significant changes during the anesthetic. No significant differences were noted among the groups for the following parameters measured: PaO₂, HCO₃, pH, and PaCO₂. No significant metabolic changes were noted among the 3 groups. The hypotensive groups had a shorter time of surgery and their total blood loss was significantly lower when compared to the normotensive group.

Conclusions: Both of the hypotensive techniques used resulted in a significant reduction in blood loss and a shorter operating time. No significant differences were noted between the 2 hypotensive techniques as it related to endocrine responses and metabolic changes.

Reviewer's Comments: A very well done investigation that showed no significant alterations in endocrine or metabolic responses as it relates to the anesthetic technique utilized. Both are safe and effective means of producing a hypotensive anesthetic. (Reviewer-David M. Grogan, DMD).

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Keywords: Hypotensive Anesthesia, Blood Loss, Endocrine Responses, Mandibular Osteotomy

Print Tag: Refer to original journal article
Will Resection of the Tendon Help?

*Long-Term Results of Surgical Therapy for Masticatory Muscle Tendon-Aponeurosis Hyperplasia Accompanied by Limited Mouth Opening.*

Yoda T, Sato T, et al:


Resection of the hyperplastic aponeurosis associated with the masseter, in combination with bilateral coronoidectomies, appears to be effective treatment for hyperplastic muscle tendon-aponeurosis.

**Objective:** To present the long-term outcomes of surgical intervention for the treatment of masticatory muscle tendon-aponeurosis hyperplasia.

**Design:** Retrospective clinical investigation.

**Participants/Methods:** 10 patients presented with a chief complaint of limited mouth opening, which was first recognized in all patients at a mean age of 19 years. Several of the patients had undergone splint therapy and TMJ surgical interventions without success. Eight of the 10 patients presented with hyperplasia of the mandibular angle and coronoid hyperplasia without impingement on the zygomatic arch. MRI revealed elongated and thick aponeuroses within the body of the masseter and on the anterior margin of the masseter bilaterally. An intraoral incision over the external oblique ridge was made, and the masseter muscle was dissected. The aponeurosis was identified on the anterior border and resected. Physical therapy was started on postoperative day 4 or 5. Patients were followed for 5 years.

**Results:** All patients underwent bilateral aponeurectomies and coronoidectomies. Histological examination of the tendons revealed dense collagen fibers. Immediate postoperative interincisal opening ranged from 45 to 60 mm. At the time of final follow-up, 4 patients had an interincisal opening >44 mm, 3 patients had 35 to 39 mm, and 2 patients had <33 mm. Four patients rated their outcomes as excellent and 3 patients rate their outcomes as good.

**Conclusions:** Resection of the hyperplastic aponeurosis associated with the masseter muscle in combination with a coronoidectomy produced good long-term results for patients with masticatory muscle tendon-aponeurosis hyperplasia. Patients rated the outcomes as excellent or good.

**Reviewer's Comments:** A very well done investigation. One interesting point is why did the authors perform bilateral coronoidectomies when their MRI images only showed thickening of the aponeuroses on the anterior border of the masseter and within the confines of the masseter muscle? (Reviewer-David M. Grogan, DMD).

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Keywords: Masticatory Muscle Tendon-Aponeurosis Hyperplasia, Surgical Therapy

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