Oral & Maxillofacial Surgery
Evidence Update

September 2017
Bimonthly
Lunchtime Drop-in Sessions

*All sessions last one hour*

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## Latest Evidence

### Guidelines for the Provision of Anaesthetic Services (GPAS) 2016

**Source:** Royal College of Anaesthetists - 03 July 2017

### Open versus closed surgical exposure of canine teeth that are displaced in the roof of the mouth

Nicola Parkin, Philip E Benson, Bikram Thind, Anwar Shah, Ismail Khalil, Saiba Ghafoor

Online Publication Date: August 2017

### OpenAthens login required. Register here: [https://openathens.nice.org.uk/](https://openathens.nice.org.uk/)
Recent Database Articles on Oral and Maxillofacial Surgery

Below is a selection of articles on oral and maxillofacial surgery recently added to the healthcare databases, grouped into the following categories:

- Oral surgery
- Bisphosphonate-related osteonecrosis of the jaw
- Maxillofacial
- Cleft lip and palate

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

Oral surgery

The bone lid technique in oral surgery: A case series study

Author(s): Sivolella S.; Brunello G.; Fistarol F.; Stellini E.; Bacci C.
Publication Type(s): Article In Press

Abstract: The aim of this case series study was to illustrate the bone lid technique implemented using piezoelectric surgery to access mandibular alveolar bone diseases and to assess the clinical and radiographic outcomes. The technique was used to treat 21 consecutive patients with various conditions: cysts in six cases, impacted teeth with associated cysts in nine, keratocystic odontogenic tumours in three, impacted teeth in two, and an endodontic lesion in one. The bone lid was fashioned using piezoelectric surgery and a thin osteotomy insert. After the surgical procedure, the bone lid was replaced and fixed with miniplates. On clinical and radiological follow-up at 12 months, the outcome measures were bone lid integration and alveolar bone volume recovery. Any complications were also documented. The lesion and bone lid healed completely in 19 cases; one patient experienced permanent mild paresthesia and one experienced trauma-induced bone lid necrosis. Computed tomography volumetric analyses conducted on 11 cases indicated a mean recovery of 93.8% of the volume of bone lost. Based on healthy biological reasoning, the bone lid technique with piezoelectric surgery and rigid fixation may be considered a valid alternative to ostectomy for the purposes of bone tissue healing. Copyright © 2017 International Association of Oral and Maxillofacial Surgeons.

Peri-operative management of a patient with severe anorexia nervosa who underwent oral maxillofacial surgery: A case report

Author(s): Hiranuma K.; Nishimura A.; Hoshi T.; Okumura N.; Abe K.; Iijima T.
Source: Journal of Japanese Dental Society of Anesthesiology; 2017; vol. 45 (no. 2); p. 205-207
Publication Type(s): Article
Abstract: Anorexia nervosa is a chronic illness characterized by severe weight loss and an extreme aversion to food. We experienced a surgical case of a patient with severe anorexia nervosa who had repeating binge-eating episodes followed by self-induced vomiting. A 32-year-old woman underwent a sagittal split ramus osteotomy and surgical fixation for a jaw deformity under general anesthesia. She had felt severe stress of to the hospitalization and surgery, and she was afraid of the intermaxillary fixation and tube feeding. We planned the postoperative management by intravenous sedation with dexmedetomidine hydrochloride to control her eating impulses until the removal of the drain from the wounded area as well as the use of a feeding tube. General anesthesia was maintained with air-oxygen-sevoflurane and intravenous remifentanil. Additionally, 2% lidocaine with 1/80,000 adrenaline and 0.75% ropivacaine hydrochloride hydrate was injected for local anesthesia. Tracheal tube was extubated after sufficient spontaneous breathing, and immediately continuous administration of dexmedetomidine started. The drain and the feeding tube were removed the next morning. The patient tolerated the surgical procedure and the postoperative management under sedation, and no binge-eating episodes appeared during the period of hospitalization even after sedation. The patient was discharged from hospital 8 days later without any complications or eating disorder. The combination of general anesthesia and subsequent postoperative sedation was effective for the patient to control her abnormal eating compulsion. We should make an anesthetic plan including postoperative period for patients with anorexia nervosa, as they feel severe stress not only to the surgical procedure but also hospitalization.

Spatial variations in the arrangement of the facial nerve within the parotid gland and its relationship to the retromandibular vein, and the analysis of its anatomic significance to the extra-oral surgical approaches to the mandibular condyle

Author(s): El Kininy W.; Davy S.; Barry D.; Stassen L.F.A.

Source: Journal of Anatomy; Sep 2017; vol. 231 (no. 3); p. 462-463

Publication Type(s): Conference Abstract

Available in full text at Journal of Anatomy - from National Library of Medicine

Abstract: The mandibular condyle presents a surgical region fraught with risks to the facial nerve. In traumatic settings, the mandibular condyle fracture is a controversial area of discussion in terms of the most appropriate management—either open or closed reduction. Historically, the majority of these fractures were managed with closed reduction; however, there is a growing body of evidence to support open treatment. A gap exists in the literature as to the impact of facial nerve variations or variations of the facial nerve to the retromandibular vein on the various approaches to the mandibular condyle. The current extra-oral surgical approaches grossly rely on the normal position and divisions of the facial nerve and the retromandibular vein as a landmark and guide. As part of an MD on the impact of facial nerve variation in mandibular condyle surgery, using 13 donors (eight female, five male) donated as part of the anatomy teaching programme in the Department of Anatomy, TCD—we are in the process of dissecting 26 parotid glands to elucidate any variations within this Irish population of donors. Fourteen parotid glands dissections have already been performed. Provisional results have shown significant variations: 21% have shown variation in the relationship of the facial nerve to the intra-parotid venous structures. In one case, the facial nerve main trunk was found deep to the superficial temporal vein (STV), exiting between it and the maxillary vein (MV), continuing superficial to the MV. This particular variation has not been reported previously in the literature. We report our provisional results and discuss the current literature on facial nerve variation. Consent for dissection of the human donors with imagery of their facial nerves was obtained for each individual donor under the voluntary consent process provided by each donor when signing onto the Trinity College Anatomy Department donor programme prior to their death. The consent form explicitly states that dissections for teaching and research along with appropriate imagery are allowed.

Author(s): Kumar, Sanjeev

Source: Journal of maxillofacial and oral surgery; Sep 2017; vol. 16 (no. 3); p. 269-276

Publication Type(s): Journal Article Review

Abstract: Due to historical reasons, many different training pathways exist across countries that lead to a degree in oral and maxillofacial surgery. Although it is generally accepted to be a specialty of dentistry, the complex nature of procedures being performed by OMF surgeons today, has necessitated extensive general surgical training. Many countries have thus made dual qualification mandatory, while others have extended training programs in OMFS with integrated medical teaching. In India, frequent contact with foreign experts, availability of world-class equipment and efforts of individual surgeons has ensured that the full scope of OMFS is practised in select centres of learning. However, the MDS curriculum dictated by DCI has not conformed to the requirements of the specialty as practiced today. This brief mini-review of the various training pathways aims at comparing our system with other countries and attempts to draw lessons which could help improve future OMFS training in India.

Surgical Navigation: A Systematic Review of Indications, Treatments, and Outcomes in Oral and Maxillofacial Surgery.

Author(s): Azarmehr, Iman; Stokbro, Kasper; Bell, R. Bryan; Thygesen, Torben

Source: Journal of Oral & Maxillofacial Surgery (02782391); Sep 2017; vol. 75 (no. 9); p. 1987-2005

Publication Type(s): Academic Journal

Prospective Evaluation of Quality of Life in Patients Undergoing Primary Surgery for Oral Cancer: Preoperative and Postoperative Analysis

Author(s): Viana, Thales Salles Angelim; Silva, Paulo Goberlânio de Barros; Pereira, Karuza Maria Alves; Mota, Mario Rogério Lima; Alves, Ana Paula Negreiros Nunes; de Souza, Eric Fernandes; Sousa, Fabricio Bitu

Source: Asian Pacific journal of cancer prevention : APJCP; Aug 2017; vol. 18 (no. 8); p. 2093-2100

Publication Type(s): Journal Article

Abstract: Background: The purpose of the present study was to compare the preoperative and postoperative health related quality of life (HRQoL) of a sample of patients undergoing primary surgery for oral cancer in 2012-13. Materials and Methods: A cross-sectional, prospective study of 54 patients in a Brazilian population was performed. HRQoL was measured preoperatively (after histopathological diagnosis) and postoperatively (2 months after surgery) using the University of Washington Quality of Life Questionnaire (UW-QOL). Clinicopathological, sociodemographic and lifestyle data were collected. Results: Surgery had a negative impact on most HRQoL domains, but pain, mood and anxiety scores were significantly improved. Most patients rated their health-related and overall postoperative HRQoL as good or very good. Conclusions: The UW-QOL was efficient at measuring HRQoL in our sample of patients with oral cancer. Surgery had a negative impact on HRQoL, especially due to sequelae affecting the stomatognathic system, yet patients classified their postoperative health-related and overall QoL as positive. Qualitative studies are necessary for confirmation of our results and further exploration.


Author(s):


**Source:** British dental journal; Aug 2017; vol. 223 (no. 4); p. 254  
**Publication Type(s):** Journal Article  
**Abstract:** No improvement in quality of life after implant prosthetic reconstruction following resective surgery for cancer.


**New horizons in anticoagulation: Direct oral anticoagulants and their implications in oral surgery.**  
**Author(s):** Serrano-Sánchez, V; Ripollés-de Ramón, J; Collado-Yurrita, L; Vaello-Checa, I; Colmenero-Ruiz, C; Helm, A; Ciudad-Cabañas, M; Serrano-Cuenca, V  
**Source:** Medicina oral, patología oral y cirugía bucal; Aug 2017  
**Publication Type(s):** Journal Article  
**Abstract:** Thrombotic disorders remain a leading cause of death in the Western World. For decades, vitamin K antagonists used in the prevention of this pathology, such as warfarin or sintrom, were the only oral agents available for long-term anticoagulation, in spite of their disadvantages. Therefore, in recent years, the so-called “new oral anticoagulants” have been introduced in clinical practice to treat those patients whose medical conditions require long-term anticoagulant treatment, replacing traditional oral anticoagulants. The new oral anticoagulants represent new therapeutic options, with a number of advantages such as poor interaction with food, minor drug interactions, and do not require periodic dose adjustments or routine controls. The purpose of this review is to establish an update on the new oral anticoagulants: Dabigatran, Rivarozaban, Apixaban and Edoxaban.

**Literature Review of Criteria for Defining Recipient-Site Infection after Oral Oncologic Surgery with Simultaneous Reconstruction.**  
**Author(s):** Akashi, Masaya; Kusumoto, Junya; Sakakibara, Akiko; Hashikawa, Kazunobu; Furudoi, Shungo; Komori, Takahide  
**Source:** Surgical infections; Aug 2017  
**Publication Type(s):** Journal Article  
**Abstract:** BACKGROUND The lack of uniformity of criteria for defining recipient-site infection after oral oncologic surgery with simultaneous reconstruction is problematic despite numerous studies on this issue. This study aimed to investigate the difference in the criteria for defining recipient-site infection after oral oncologic surgery with reconstruction. METHODS A Medline search was performed via PUBMED using the following combinations of key terms that were tagged in the title, abstract, or both: "surgical site infection-head neck," "surgical site infection-oral cancer," "antibiotic prophylaxis-head neck," and "surgical site infection-oral carcinoma." Search results were filtered between 2005 and 2017. Articles in which there was no mention of the criteria for definition of surgical-site infection were excluded. RESULTS The number of articles that met the inclusion criteria was 24. The lack of uniformity in the criteria for defining recipient-site infection in each article appeared to be attributable mainly to differences in whether an orocutaneous fistula and superficial incisional infection were regarded as recipient-site infection. CONCLUSION Reconsideration of the categorization of orocutaneous fistula as infection, regardless of the etiology, and differentiation of superficial and deep incisional infections are necessary for correct assessment of recipient-site infection in oral oncologic surgery.

**The effect of video-assisted oral feedback versus oral feedback on surgical communicative competences in undergraduate training.**  
**Author(s):** Ruesseler, M; Sterz, J; Bender, B; Hoefer, S; Walcher, F
Purpose:
Feedback can significantly improve future performance. Reviewing one’s performance by video is discussed as useful adjunct to debriefing, particularly for non-technical skills. Communicative competencies are an essential part of daily clinical practice; thus should be taught and assessed during undergraduate training. The aim of this study was to compare the educational value of video-assisted feedback versus oral feedback in communicative competencies in the surgical context.

Methods:
Fourth-year medical students completed a 210-min training unit of ‘taking patient’s history and obtaining informed consents prior to surgery’ using role plays. Oral feedback was received directly thereafter using agenda-led, outcome-based guidelines (ALOBA). In the study group, the role plays were video-taped and reviewed thereafter. Afterwards, students completed two OSCE stations, where they were assessed regarding their communicative competencies and the content of the clinical scenario.

Results:
One hundred students (49 receiving video-assisted feedback, 51 oral) participated in the study. Those receiving video-assisted feedback performed significantly better in overall score in both OSCE stations (p < 0.001), in all five assessed communicative competencies at taking patient history (p = 0.029 or better), and in 2 of 5 items at obtaining informed consent (p = 0.008, <0.001). The educational effect size for both tasks was large.

Conclusion:
Using our methodology, video-assisted feedback offered a significant educational benefit over oral feedback alone during a simulated patient encounter in a surgical context.

Bisphosphonate-related osteonecrosis of the jaw

Underlying mechanisms and therapeutic strategies for bisphosphonate-related osteonecrosis of the jaw (BRONJ)

Author(s):
Endo Y.; Takahashi T.; Kumamoto H.; Nakamura M.; Sugawara S.; Takano-Yamamoto T

Source:
Biological and Pharmaceutical Bulletin; 2017; vol. 40 (no. 6); p. 739-750

Abstract:
Bisphosphonates (BPs), with a non-hydrolysable P-C-P structure, are cytotoxic analogues of pyrophosphate, bind strongly to bone, are taken into osteoclasts during bone-resorption and exhibit long-acting anti-bone-resorptive effects. Among the BPs, nitrogen-containing BPs (N-BPs) have far stronger anti-boneresorptive effects than non-N-BPs. In addition to their pyrogenic and digestive-organ-injuring side effects, BP-related osteonecrosis of jaws (BRONJ), mostly caused by N-BPs, has been a serious concern since 2003. The mechanism underlying BRONJ has proved difficult to unravel, and there are no solid strategies for treating and/or preventing BRONJ. Our mouse experiments have yielded the following results. (a) N-BPs, but not non-N-BPs, exhibit direct inflammatory and/or necrotic effects on soft tissues. (b) These effects are augmented by lipopolysaccharide, a bacterial-cell-wall component. (c) N-BPs are transported into cells via phosphate transporters. (d) The non-N-BPs etidronate (Eti) and clodronate (Clo) competitively inhibit this transportation (potencies, Clo>Eti) and reduce and/or prevent the N-BP-induced inflammation and/or necrosis. (e) Eti, but not Clo, can expel N-BPs that have accumulated within bones. (f) Eti and Clo each have an analgesic effect (potencies, Clo>Eti) via inhibition of phosphate transporters involved in pain transmission. From these findings, we propose that phosphate-transporter-mediated and inflammation/infection-promoted mechanisms underlie BRONJ. To treat and/or prevent BRONJ, we propose (i) Eti as a substitution drug for N-BPs and (ii) Clo as a combination drug with N-BPs while retaining their anti-bone-resorptive effects. Our clinical trials support this role for Eti (we cannot perform such trials using Clo because Clo is not clinically approved in Japan).Copyright © 2017 The Pharmaceutical Society of Japan.
Retrospective study of patients with medication-related osteonecrosis of the jaw treated conservatively

Author(s): Konishi T.

Source: Supportive Care in Cancer; 2017; vol. 25 (no. 2)

Publication Type(s): Conference Abstract

Abstract: Introduction Treatment methods for medication-related osteonecrosis of the jaw (MRONJ) have yet to be established, and the number of patients with this condition is on the rise. Objectives In Japan, though several reports have described successful surgical treatments, there are few reports describing outcomes of patients receiving mainly conservative management because surgical treatment was considered to be difficult. We report a retrospective study of patients with MRONJ who received conservative treatment. Methods In total, 79 of the MRONJ patients who visited our department during the period from 2010 through 2016 were conservatively treated. These patients were retrospectively investigated. Results The patients were 38 men and 41 women, and their median age was 68 years. The most common primary disease was breast cancer, followed by prostate cancer. The median time to onset of MRONJ was 22 months (3-112 months). Factors considered to have caused osteonecrosis were tooth extraction, 23 patients; apical and/or marginal periodontitis, 29; ill-fitting dentures, 13; unknown, 13; and implant, 1. The disease stage at first presentation was 0 in 21 patients, 1 in 3, and 2 in 55. All of these patients were treated conservatively (oral care, oral cleaning, and antibacterial administration). Conclusions When surgical treatment for MRONJ is regarded as being difficult, rather than choosing a surgical approach to expedite healing as the first line therapy, the possibility of conservative management should be considered. Long-term administration of appropriate antibacterial agents is a potential alternative that may compare favorably with surgical treatment.

Conservative surgery treatment of medication related osteonecrosis of the jaw (mronj) stage ii and iii. a preliminary report

Author(s): Vardas E.; Papadopoulou E.; Kouri M.; Chatzihalepli C.; Vourli A.; Nicolatou-Galitis O.

Source: Supportive Care in Cancer; 2017; vol. 25 (no. 2)

Publication Type(s): Conference Abstract

Abstract: Introduction Conservative surgical management of MRONJ involves sequestrectomy and/or superficial surgical debridement of necrotic bone, in combination with oral antibiotics and chlorhexidine rinses. Objectives To present the clinical outcome of 14 oncology patients with metastatic bone disease and MRONJ, who were managed with a conservative surgical approach Methods Five patients had breast cancer, 6 prostate cancer and 3 multiple myeloma; 8 patients received zolendronic acid, 4 denosumab and 2 zolendronic acid followed by denosumab. Seven patients had MRONJ stage II and seven had stage III according to the AAOMS (2014) staging system. All patients were unresponsive to noninvasive treatments for MRONJ. Antiresorptives were interrupted and surgical interventions were performed under local analgesia. Primary wound closure was achieved and biopsies were obtained. The mean follow-up period was 6 months postoperatively. Results MRONJ affected maxilla in three patients and mandible in eleven. Necrotic bone was observed histologically. Eight patients healed with complete mucosal coverage. Six patients required additional surgery; 1 patient healed and 5 were stabilized at stage I. In total nine patients (5 with stage II and 4 with stage III) healed (64,29%) and four were stabilized (28,6%) at stage I (2 with stage II and 2 with stage III). One patient died. Conclusions In this cohort study, the relatively high healing rate of MRONJ (64,29 %) indicates that conservative surgical strategies can be beneficial when conservative measures have failed.

Treatment of bisphosphonate-related osteonecrosis of the jaw using platelet-rich fibrin.
BACKGROUND Bisphosphonates are commonly prescribed antiresorptive agents for the management of patients with osteoporosis, Paget's disease, multiple myeloma, and metastatic tumors. Platelet-rich fibrin (PRF) is a second generation platelet concentrate, and has the ability of regulating the inflammation and stimulation of chemotactic agents. The aim of this report is to present the treatment of Stage-3 bisphosphonate-related osteonecrosis of the jaw (BRONJ) by PRF.

CLINICAL PRESENTATION A 77-year-old male patient with Stage-3 BRONJ was treated with minimal surgical operations and PRF membrane. The patient was followed up for 18 months, and there was no recurrence or exposure.

CONCLUSION PRF may promote the healing of both bone and soft tissues even in Stage-3 patients. This technique is an alternative treatment modality for the closure of bone exposure and tissue healing in BRONJ patients.

AWARENESS OF MEDICATION RELATED OSTEONECROSIS OF THE JAW AMONGST DENTISTS AND DOCTORS IN THE UK.

THE ROLE OF PRE-MEDICATION DENTAL EVALUATION IN THE PREVENTION OF MEDICATION-RELATED OSTEONECROSIS OF THE JAW IN CANCER PATIENTS: THE MEMORIAL SLOAN KETTERING CANCER CENTER EXPERIENCE.

Treatment of Medication-Related Osteonecrosis of the Jaw and its Impact on a Patient’s Quality of Life: A Single-Center, 10-Year Experience from Southern Italy
increased in both groups (OSTEO group: +9.9% and +39.9%; ONC group: +35.4 and +97.2%, respectively). Pharmacological treatment was effective in reducing pain (OSTEO group: -22.0%; ONC group: -44.8%), and social contact troubles (OSTEO group: -40.3%; ONC group: -26.7%). At T2, GOHS and VAS further increased. Scores related to 'pain' and the troubles related to the 'social dimension' also decreased (OSTEO group: -91.3% and -72.0%; ONC group: 50.8% and -16.4%, respectively).

Conclusions: MR-ONJ-related QoL increased after pharmacological treatment and, more notably, after surgery, which may offer benefits to selected patients. QoL data may help clinicians in promoting tailored management of MR-ONJ.Copyright © 2017 Springer International Publishing AG

The effect of chronic dental inflammation on development of Stage 0 medication-related osteonecrosis of the jaw

Author(s): Topaloglu G.; Koseoglu O.T.; Karaca C.; Kosemehmetoglu K.

Source: Journal of Cranio-Maxillofacial Surgery; Aug 2017; vol. 45 (no. 8); p. 1158-1164

Publication Type(s): Article

Abstract: Objective The pathogenesis of medication-related osteonecrosis of jaw (MRONJ) is poorly understood. The aim of this prospective study was to determine the effect of chronic dental inflammation on the development of Stage 0 MRONJ based on histopathological findings. Methods The study involved patients with a history of bisphosphonate use and an indication for tooth extraction. Before surgery, C-terminal telopeptide test (CTX) values were collected from all patients. All tooth extractions were performed according to a determined protocol. To detect whether any medication-related osteonecrotic changes were present in the non-exposed bone, biopsy samples were taken from the alveolar bone. Results A total of 50 patients were included in the study (39 women and 11 men). The patients were mean age of 57.4 +/- 12.1 years. In total, 74 teeth were extracted (29 maxillary and 45 mandibular). Histologic examination of three patients (6%) revealed Stage 0 MRONJ. Postoperatively, the complete mucosal healing success rate was 96%. MRONJ risk was not significantly correlated with low CTX value (p = 0.285). Conclusions Chronic inflammation may contribute to Stage 0 MRONJ; however, its role may not be sufficient alone for its development. Application of a predetermined protocol for dentoalveolar processes will help to prevent MRONJ development.Copyright © 2017 European Association for Cranio-Maxillo-Facial Surgery

Bisphosphonate-Related Osteonecrosis and Metastasis Within the Same Site of the Jaw

Author(s): Corsi A.; Riminucci M.; Ungari C.; Agrillo A.

Source: Journal of Oral and Maxillofacial Surgery; Aug 2017; vol. 75 (no. 8); p. 1679-1684

Publication Type(s): Article

Abstract: Osteonecrosis of the jaw (ONJ) is a well known complication in patients treated with bisphosphonates (BPs) for skeletal metastasis and multiple myeloma (MM). Few oncologic patients under treatment with BPs and with ONJ and metastasis or MM at the same site of the jaw have been described. We report here on a 54-year old white female who was treated with intra-venous zoledronic acid for skeletal metastasis of breast cancer who developed ONJ. Because of a fracture at the site of ONJ, resection of the affected segment was performed. Although metastasis was not suspected by pre-operative image analysis, histological examination revealed synchronous osteonecrosis and breast cancer metastasis in the resected mandibular segment. This case highlights that, in oncologic patients treated with BPs, ONJ may hide malignancy and that histology is the unique tool by which the diagnosis of either osteonecrosis or malignancy or both can be made definitely.Copyright © 2017 American Association of Oral and Maxillofacial Surgeons
A multicenter retrospective study of the risk factors associated with medication-related osteonecrosis of the jaw after tooth extraction in patients receiving oral bisphosphonate therapy: can primary wound closure and a drug holiday really prevent MRONJ?


Source: Osteoporosis International; Aug 2017; vol. 28 (no. 8); p. 2465-2473

Publication Type(s): Article

Abstract: Summary: Root amputation, extraction of a single tooth, bone loss or severe tooth mobility, and an unclosed wound were significantly associated with increased risk of developing medication-related osteonecrosis of the jaw (MRONJ). We recommend a minimally traumatic extraction technique, removal of any bone edges, and mucosal wound closure as standard procedures in patients receiving bisphosphonates. Introduction: Osteonecrosis of the jaws can occur following tooth extraction in patients receiving bisphosphonate drugs. Various strategies for minimizing the risk of MRONJ have been advanced, but no studies have comprehensively analyzed the efficacy of factors such as primary wound closure, demographics, and drug holidays in reducing its incidence. The purpose of this study was to retrospectively investigate the relationships between these various risk factors after tooth extraction in patients receiving oral bisphosphonate therapy. Methods: Risk factors for MRONJ after tooth extraction were evaluated using univariate and multivariate analysis. All patients were investigated with regard to demographics; type and duration of oral bisphosphonate use; whether they underwent a discontinuation of oral bisphosphonates before tooth extraction (drug holiday), and the duration of such discontinuation; and whether any additional surgical procedures (e.g., incision, removal of bone edges, root amputation) were performed. Results: We found that root amputation (OR = 6.64), extraction of a single tooth (OR = 3.70), bone loss or severe tooth mobility (OR = 3.60), and an unclosed wound (OR = 2.51) were significantly associated with increased risk of developing MRONJ. Conclusions: We recommend a minimally traumatic extraction technique, removal of any bone edges, and mucosal wound closure as standard procedures in patients receiving bisphosphonates. We find no evidence supporting the efficacy of a pre-extraction short-term drug holiday from oral bisphosphonates in reducing the risk of MRONJ.

Medication-related osteonecrosis of the jaw: Risk factors in patients under biphosphonate versus patients under antiresorptive-antiangiogenic drugs

Author(s): Ghidini G.; Manfredi M.; Giovannacci I.; Mergoni G.; Sarraj A.; Mureddu M.; Giunta G.

Source: Minerva Stomatologica; Aug 2017; vol. 66 (no. 4); p. 135-140

Publication Type(s): Article

Abstract: BACKGROUND: Biphosphonate-related osteonecrosis of the jaw (BRONJ) is a potential side effect associated with the administration of bisphosphonates; the aim of this work is to highlight the possible epidemiological differences between two groups of patients affected by medication related osteonecrosis of the jaw (MRONJ) treated at the Center of Oral Medicine, Pathology and Laser Surgery of the Academic Hospital at the University of Parma, Italy, between January 2004 and June 2016. METHODS: Medical charts of 303 patients (214 females and 89 males, mean age: 67 years old) treated at the Center of Oral Medicine, Pathology and Laser Surgery of the Academic Hospital at the University of Parma, between January 2004 and June 2016, were retrospectively analyzed. Patients were divided in 2 groups according to drugs therapy they underwent: group 1 (G1) including patients treated with bisphosphonates alone and group 2 (G2) including patients receiving antiresorptive-antiangiogenic drugs in association with bisphosphonates or antiresorptive-antiangiogenic drugs.
alone. Than 269 MRONJ sites treated with 5 different therapeutical approaches were analyzed.

RESULTS: Results showed G1 consisting mainly in female patients undergoing bisphosphonates for oncologic disease, stage II was most frequently diagnosed and MRONJ developed mainly after dental extraction or bone surgery. G2 consisted mainly in males patients, whom took antiresorptive-antiangiogenic drugs in association with bisphosphonate or antiresorptive-antiangiogenic drugs alone for oncologic disease. Stage II was most frequently diagnosed and MRONJ developed most frequently "spontaneous". CONCLUSIONS: This study showed how a new population affected by MRONJ is emerging. Men affected by kidney cancer treated with new antiresorptive-antiangiogenic drugs will represent a growing portion of the pool of patients at risk. In our experience, a strict follow-up is of outmost importance to early detect MRONJ also in patients with spontaneous cases. When MRONJ occurs, surgical laser treatment with Er:YAG seems to represent the option with highest percentage of success; for patients with contraindication to surgery, LLLT helps to improve outcomes of the medical therapy. (Cite this article as: Ghidini G, Manfredi M, Giovannacci I, Mergoni G, Sarraj A, Mureddu M, et al. Medication-related osteonecrosis of the jaw: risk factors in patients under bisphosphonate versus patients under antiresorptive-antiangiogenic drugs. Copyright © 2017 EDIZIONI MINERVA MEDICA.

Serum levels of RANKL and OPG, and the RANKL/OPG ratio in bisphosphonate-related osteonecrosis of the jaw: Are they useful biomarkers for the advanced stages of osteonecrosis?

Author(s): Bagan, L; Jiménez, Y; Leopoldo, M; Rubert, A; Bagan, J

Source: Medicina oral, patologia oral y cirugia bucal; Aug 2017

Publication Type(s): Journal Article

Abstract: BACKGROUND We determined whether serum levels of Receptor Activator for Nuclear Factor κ B Ligand (RANKL), Osteoprotegerin (OPG), and the RANKL/OPG ratio could be useful biomarkers for the severity of oral lesions in bisphosphonate-related osteonecrosis of the jaw (BRONJ). MATERIAL AND METHODSA case-control study in which Group 1 consisted of 41 patients with BRONJ due to intravenous bisphosphonates, and Group 2 consisted of 44 healthy control cases. The plasma levels of RANKL and OPG were analyzed by an ELISA assay. The OPG/RANKL ratio was also calculated. We determined if the mean serum values differed among the different stages of BRONJ. RESULTS Serum levels of RANKL were lower in Group 1 than in Group 2 (p =0.01), and serum levels of OPG were higher in patients with BRONJ than in the controls (p =0.006). The ratio of RANKL/OPG was greater in the controls than in Group 1 (p >0.01). There were no significant differences in the serum levels of RANKL and OPG among the different stages of osteonecrosis (p >0.05). CONCLUSIONSSerum levels of RANKL and OPG, and the RANKL/OPG ratio were not valuable biomarkers for determining the severity of oral lesions in patients with BRONJ.

Insufficient evidence of superiority of any treatment for medication-related osteonecrosis of the jaw.

Author(s): Brignardello-Petersen, Romina

Source: Journal of the American Dental Association (1939); Aug 2017

Publication Type(s): Journal Article

Effectiveness of treatments for medication-related osteonecrosis of the jaw: A systematic review and meta-analysis.

Author(s): El-Rabbany, Mohamed; Sgro, Adam; Lam, David K; Shah, Prakashkumar S; Azarpazhooh, Amir

Source: Journal of the American Dental Association (1939); Aug 2017; vol. 148 (no. 8); p. 584
Publication Type(s): Journal Article Review

Abstract: BACKGROUND The effectiveness of management strategies used for the treatment of medication-related osteonecrosis of the jaw (MRONJ) remains poorly understood. The authors evaluated systematically the effectiveness of the various treatment modalities used for MRONJ. TYPES OF STUDIES REVIEWED The authors conducted a comprehensive search of MEDLINE, Embase, the Cochrane Library, and Scopus to identify randomized controlled trials, nonrandomized controlled trials, and prospective cohort studies to evaluate comparatively the effectiveness of management strategies for the treatment of MRONJ. The authors conducted the identification of eligible studies in duplicate and synthesized the extracted data by means of a meta-analysis, when feasible. RESULTS The authors found 13 studies with a medium-to-high risk of bias that met the inclusion criteria of this review. The authors found that, compared with medical treatment of local antimicrobials with or without systemic antimicrobials, the study investigators associated surgical treatment with higher odds of complete resolution of the condition (2 studies; 76 participants; unadjusted odds ratio, 3.55; 95% confidence interval, 1.12 to 11.19). The effectiveness of other therapies, such as bisphosphonate drug holidays, teriparatide, and hyperbaric oxygen, was uncertain. CONCLUSIONS AND PRACTICAL IMPLICATIONS On the basis of the results of an unadjusted analysis, the results of the studies that were deemed to be medium to low quality and to have medium-to-low statistical power suggested that there are higher odds of resolving MRONJ with surgical treatment compared with medical treatment. High-quality research is required for conclusive statements to be made regarding treatment strategies for management of MRONJ.

Exposed necrotic bone in 183 patients with bisphosphonate-related osteonecrosis of the jaw: Associated clinical characteristics.

Author(s): Bagan, L; Jiménez, Y; Leopoldo, M; Rubert, A; Bagan, J

Source: Medicina oral, patología oral y cirugía bucal; Aug 2017

Publication Type(s): Journal Article

Abstract: BACKGROUND The main objective of our study was to identify oral symptoms and signs most likely to be associated with the exposure of necrotic bone in bisphosphonate-related osteonecrosis of the jaw (BRONJ). MATERIAL AND METHODS The study group consisted of 183 patients with BRONJ. We recorded data on the underlying disease, bisphosphonate used, location of osteonecrosis, symptoms, pain, fistula development, suppuration, infection, exposed necrotic bone, and BRONJ stage. RESULTS The mean age of the patients was 68.22 ± 12.19 years. The sample included 118 (64.5%) women. Breast cancer and multiple myeloma were the most common underlying diseases, and 50 patients received oral bisphosphonates for osteoporosis. Dental extractions (69.4%) and mandibular location (74.3%) predominated. The only two variables influencing the possibility of necrotic bone exposure were intravenous bisphosphonate administration and the presence of an intraoral fistula (p < 0.05). CONCLUSIONS Intravenous bisphosphonate use and intraoral fistula presence were associated with a major predisposition to bone exposure in patients with BRONJ.

Selective Percutaneous Controlled Radiofrequency Thermocoagulation of the Gasserian Ganglion to Control Facial Pain Due to Medication-Related Osteonecrosis of the Jaw.

Author(s): Taniguchi, Ayano; Fukazawa, Keita; Hosokawa, Toyoshi

Source: Journal of palliative medicine; Aug 2017

Publication Type(s): Journal Article

Abstract: BACKGROUND Medication-related osteonecrosis of the jaw (MRONJ) is an important complication in patients treated with antiresorptive agents such as bisphosphonates and the receptor activator of nuclear factor κB ligand inhibitor (denosumab). Treatment of MRONJ is
extremely difficult, which makes it a distressing long-term complication. OBJECTIVES We report a case of intractable facial pain due to MRONJ that was successfully controlled with selective percutaneous controlled radiofrequency thermocoagulation of the Gasserian ganglion. SETTING A 68-year-old woman with breast cancer was diagnosed as having MRONJ. She was very distressed because of jaw pain and infections secondary to MRONJ. Her quality of life (QOL) was severely decreased. Since alleviation of the MRONJ could not be expected within the patient’s life expectancy, it was decided to investigate the usefulness of selective percutaneous controlled radiofrequency thermocoagulation of the Gasserian ganglion to control the pain. RESULTS After the procedure, the anesthesia was obtained in the distribution of the third branch of the trigeminal nerve, and the pain completely disappeared. Although hypoesthesia was provoked as a complication, it was tolerated by the patient and she was very satisfied. Up to the time of death, there was no recurrence of pain or worsening of the MRONJ. DISCUSSION This procedure is a common technique for treating trigeminal neuralgia. Its effect is immediate and long lasting, although it provokes hypoesthesia in treated division, and it is also suited for cancer patients in terminal stage. This case suggests that the procedure was useful for improving the patient’s QOL.

Effectiveness of treatments for medication-related osteonecrosis of the jaw.

Author(s): El-Rabbany, Mohamed; Sgro, Adam; Lam, David K.; Shah, Prakeshkumar S.
Source: Journal of the American Dental Association (JADA); Aug 2017; vol. 148 (no. 8); p. 584-596
Publication Type(s): Academic Journal
Abstract: Background. The effectiveness of management strategies used for the treatment of medication-related osteonecrosis of the jaw (MRONJ) remains poorly understood. The authors evaluated systematically the effectiveness of the various treatment modalities used for MRONJ. Types of Studies Reviewed. The authors conducted a comprehensive search of MEDLINE, Embase, the Cochrane Library, and Scopus to identify randomized controlled trials, nonrandomized controlled trials, and prospective cohort studies to evaluate comparatively the effectiveness of management strategies for the treatment of MRONJ. The authors conducted the identification of eligible studies in duplicate and synthesized the extracted data by means of a metaanalysis, when feasible. Results. The authors found 13 studies with a medium-to-high risk of bias that met the inclusion criteria of this review. The authors found that, compared with medical treatment of local antimicrobials with or without systemic antimicrobials, the study investigators associated surgical treatment with higher odds of complete resolution of the condition (2 studies; 76 participants; unadjusted odds ratio, 3.55; 95% confidence interval, 1.12 to 11.19). The effectiveness of other therapies, such as bisphosphonate drug holidays, teriparatide, and hyperbaric oxygen, was uncertain. Conclusions and Practical Implications. On the basis of the results of an unadjusted analysis, the results of the studies that were deemed to be medium to low quality and to have medium-to-low statistical power suggested that there are higher odds of resolving MRONJ with surgical treatment compared with medical treatment. High-quality research is required for conclusive statements to be made regarding treatment strategies for management of MRONJ.

USE OF PLATELET-RICH PLASMA IN MEDICATION RELATED OSTEONECROSIS OF JAW TREATMENT: EXPERIMENTAL STUDY.

Author(s): CARDOSO, CAMILA LOPES; CURRA, CLÁUDIA; CURI, MARCOS MARTINS;
Source: Oral Surgery, Oral Medicine, Oral Pathology & Oral Radiology; Aug 2017; vol. 124 (no. 2)
Publication Type(s): Academic Journal
Maxillofacial

Epidemiologia de la patología quirúrgica que afecta al territorio maxilofacial, tratada bajo anestesia general en el Hospital de Urgencia Asistencia Pública entre 2014 y 2016. 

Epidemiology of surgical pathology affecting the maxillofacial area, treated under general anesthesia at the Emergency Hospital Public Assistance between 2014 and 2016

Author(s): Sandoval Tobar M.E.; Reyes Court D.; Sanhueza Olea V.

Source: Revista Chilena de Cirugía; 2017; vol. 69 (no. 4); p. 289-296

Publication Type(s): Article

Abstract: Objective To determine the experience of the specialty in Oral and Maxillofacial Surgery and Traumatology at the Hospital Emergency Assistance Publique, through epidemiology of surgical treatments carried out in major operating room, under general anesthesia during the period between November 2014 and July 2016. Material and methods A retrospective study where the operative protocols of patients operated during the period analyzed was performed. Database information from major operating room for diagnosis, age, sex and type of surgical procedures was collected. 125 surgical procedures performed in 109 patients were included. Results The average age of the operated patients was 38 years with a preponderance of males (70.6%); 50.4% of surgical procedures were for injuries in the maxillofacial area, where the mandibular fracture was the most common lesion (68.3%); 46.4% of the procedures were for infections in maxillofacial area, where the most common location was the submandibular anatomical space (25.8%). The rest of the procedures related to other diseases (3.2%). Discussion In general the results are consistent with similar studies in emergency care hospitals. Conclusion Within the pathologies of urgency of the maxillofacial territory, traumatic injuries and infections are those that most frequently require major surgery under general anesthesia. Patients undergoing surgery under general anesthesia in major operating room are mainly men, with mandibular fractures and submandibular space infections being the most frequent lesions in each type of pathology. Copyright © 2016 Sociedad de Cirujanos de Chile

Cone-beam computed tomography evaluation of the maxillofacial features of patients with unilateral temporomandibular joint ankylosis undergoing condylar reconstruction with an autogenous coronoid process graft.

Author(s): Liu, Li; Li, Jiayang; Ji, Huanzhong; Zhang, Nian; Wang, Yiyao; Zheng, Guangning; Wang, Hu;

Source: PloS one; 2017; vol. 12 (no. 3); p. e0173142

Publication Type(s): Journal Article

Abstract: OBJECTIVE To evaluate the changes in the jaws and the upper airways of unilateral temporomandibular joint ankylosis patients who underwent condylar reconstruction via autogenous coronoid process grafts using cone-beam computed tomography (CBCT). STUDY DESIGN The 27 included patients underwent CBCT examinations at three stages: T0 (within two weeks before surgery), T1 (two weeks after surgery), and T2 (an average of 13 months after surgery). Forty items related to the maxillofacial hard tissues and the upper airway collected at the three times and the coronoid process graft volumes after surgery were compared. RESULTS Some integral items related to the mandibular hard tissues exhibited statistical difference shortly after surgery. Some integral items related to maxillofacial hard tissues changing obviously long period after surgery may result from graft remodeling. Asymmetry-related item regarding local neo-condyle and some airway items were significantly different between T0 and T1. Due to variations in graft remodeling, some related local asymmetry items and airway items differed significantly between T0 and T2. CONCLUSIONS Anteriorly and inferiorly located neo-condyles and a trend toward the pronation of the mandible were...
observed and the narrowness of the upper airway was improved shortly after surgery. The grafts remodeled differently and some integral and asymmetry items related to neo-condyle changed. The improvements in the upper airway were slightly reduced.

**Anaesthesia for maxillofacial surgery**

**Author(s):** Kersan L.; Ratnasabapathy U.

**Source:** Anaesthesia and Intensive Care Medicine; Sep 2017; vol. 18 (no. 9); p. 442-446

**Publication Type(s):** Review

**Abstract:** Airway management is central to anaesthesia for maxillofacial surgery. Not only is there a shared airway to contend with, difficult airways are frequently encountered. The main pathologies that present for surgery include trauma, infection, cancer and craniofacial deformities. All of these may present an airway challenge in either elective or emergency settings but a similar approach to the airway can be used in all these scenarios. Other surgical procedures include dental extractions, temporomandibular joint (TMJ) arthrocentesis, salivary gland surgery and facial aesthetic surgery. It is vital that clear airway management plans including rescue plans are made at the outset. These must be communicated to the surgical and anaesthetic team in advance. Trauma is excluded as it will be covered in a separate review article. Copyright © 2017

**Contemporary management of maxillofacial ballistic trauma**

**Author(s):** Breeze J.; Tong D.; Gibbons A.

**Source:** British Journal of Oral and Maxillofacial Surgery; Sep 2017; vol. 55 (no. 7); p. 661-665

**Publication Type(s):** Review

**Abstract:** Ballistic maxillofacial trauma in the UK is fortunately relatively rare, and generally involves low velocity handguns and shotguns. Civilian terrorist events have, however, shown that all maxillofacial surgeons need to understand how to treat injuries from improvised explosive devices. Maxillofacial surgeons in the UK have also been responsible for the management of soldiers evacuated from Iraq and Afghanistan, and in this review we describe the newer types of treatment that have evolved from these conflicts, particularly that of damage-control maxillofacial surgery. Copyright © 2017

**Three-dimensional scanning electron microscopy of maxillofacial biomaterials**

**Author(s):** Pabst A.M.; Ackermann M.; Muller W.E.G.

**Source:** British Journal of Oral and Maxillofacial Surgery; Sep 2017; vol. 55 (no. 7); p. 736-739

**Publication Type(s):** Article

**Corrigendum to Aetiology, pathogenesis, and specific management of Stahl’s ear: role of the transverse muscle insertion: [British journal of Oral and Maxillofacial Surgery 51/8 (2013) e230-233] (S026643561300048X) (10.1016/j.bjoms.2013.01.018))**

**Author(s):** Gleizal A.; Bachelet J.T.; Viard R.

**Source:** British Journal of Oral and Maxillofacial Surgery; Sep 2017; vol. 55 (no. 7)

**Publication Type(s):** Erratum

**Abstract:** The authors regret that Figures 1, 3, and 4 are from Dr Viard’s collection at Hopital Saint Luc Saint Joseph Lyon, which had previously not been acknowledged in the text. The authors would like to apologise for any inconvenience caused. Copyright © 2016 The British Association of Oral and Maxillofacial Surgeons
Facial twitches in patients after maxillofacial surgery: A case series

**Author(s):** Grosjean L.; Van der Cruyssen F.; Schoenaers J.; Politis C.; Van de Vyvere G.; Sasserath C.

**Source:** Oral and Maxillofacial Surgery Cases; Sep 2017; vol. 3 (no. 3); p. 76-79

**Publication Type(s):** Article

**Abstract:** Oral and maxillofacial procedures can potentially injure one or more cranial nerves, leading to facial nerve palsy. Iatrogenic trauma resulting in facial twitching due to aberrant regeneration of nerve fibers is a potential consequence. However, facial twitches have a broad differential diagnosis and are seen in both benign and life-threatening neurological conditions. Few reports describe twitches like orofacial fasciculations, myokymia, or other movement disorders after maxillofacial surgery. This case series aims to raise awareness of this phenomenon by reviewing three patients with different types of facial twitches after oral and maxillofacial surgery. The literature concerning facial movement disorders and their possible etiology is discussed. Copyright © 2017 The Authors

MALT Lymphoma occurring in the maxillofacial region: A review of the literature and case report

**Author(s):** Merino F.; Vazquez Martinez C.; Zubillaga I.; Sanchez Aniceto G.; Ballestin C.

**Source:** Oral and Maxillofacial Surgery Cases; Sep 2017; vol. 3 (no. 3); p. 70-75

**Publication Type(s):** Article

**Abstract:** Introduction Mucosa-associated lymphoid tissue (MALT) lymphoma is a non-Hodgkin Lymphoma (NHL) localized all along the aerodigestive tract. The aim of this report is to present the case of a patient with MALT lymphoma in soft palate treated in our department. Case report Case of a 26-year-old female who visited our department. She presented a tumor in soft palate that she reported a year ago. A biopsy was performed with the diagnosis of a Low-B-grade MALT lymphoma type. Due to the low initial stage of the lesion the haematologist decided to start monotherapy with Rituximab. The therapy was changed to R-Bendamustine. At present and after two years since diagnosed (May, 2015-February, 2017), the patient is disease-free. Discussion The MALT lymphoma constitute 8% of the NHL. Progression to aggressive lymphoma is rare, occurring in under 10% of cases. Tumors are sensitive to radiotherapy and local treatment, both options can be followed by a prolonged disease-free period. The optimal treatment of MALT Lymphoma has not been agreed yet. Conclusion MALT lymphoma is a rare disease in maxillofacial area, with tendency to remain in the original location for long periods. The optimal treatment of MALT Lymphoma has not been agreed yet. Due to persistent disease and concomitant Sjogren's syndrome, in our case it was agreed that combination of Rituximab with other chemotherapy agents was indicated, with a good response. Copyright © 2017 The Authors

Submental intubation - Practical alternative airway in maxillofacial surgeries

**Author(s):** Lim D.; Palasuntharam S.; Parumo R.; Ma C.B.

**Source:** Journal of Clinical Anesthesia; Sep 2017; vol. 41 ; p. 97-98

**Publication Type(s):** Letter


**Author(s):** Gleizal, A; Viard, R; Bachelet, J T

**Source:** The British journal of oral & maxillofacial surgery; Sep 2017; vol. 55 (no. 7); p. e48
Are oral and maxillofacial surgery residents being adequately trained to care for pediatric patients?

Author(s): Abramowicz, Shelly; Kaban, Leonard B; Wurtzel, Andrew S; Roser, Steven M

Source: Oral surgery, oral medicine, oral pathology and oral radiology; Sep 2017; vol. 124 (no. 3); p. 220-224

**Abstract:**
OBJECTIVE To evaluate whether current oral and maxillofacial surgery (OMS) residents are receiving adequate training and experience to perform specific surgical procedures and anesthesia for pediatric patients. STUDY DESIGN A 17-question survey was sent electronically to fellows of the American Academy of Craniomaxillofacial Surgeons. Descriptive data for individual surgeons, their associated residency programs, and the quantity of specific pediatric procedures they performed were collected. Resident case load for inpatient and outpatient procedures and overall experience in medical, surgical, and anesthetic management of pediatric OMS patients were explored. RESULTS Surveys were sent to 110 active fellows; 64 completed the questionnaire (58%). There were 59 male fellows and 5 female fellows, with a mean age of 50.4 years. Of those, 68.8% practice in an academic setting. Specifically, 93.8% take after-hours emergency calls covering adult and pediatric patients and 98.4% have admitting privileges at a children’s hospital or a pediatric unit in an adult hospital. Their affiliated residency programs include required rotations in pediatrics or pediatric subspecialties. In their opinion, >90% of graduating OMS residents have the appropriate skill set to perform dentoalveolar procedures, outpatient anesthesia, orthognathic procedures, and alveolar bone grafts. However, residents have limited ability to reconstruct pediatric ramus-condyle unit with a costochondral graft.

CONCLUSIONS Results of this study indicate that, in the opinion of the respondents, graduates of OMS residency programs have adequate training to perform dentoalveolar procedures, outpatient anesthesia, orthognathic surgery, and alveolar bone grafts in pediatric procedures, but have limited experience with reconstruction of pediatric ramus-condyle unit via costochondral graft.

The efficacy of diagnostic imaging should guide oral and maxillofacial radiology research.

Author(s): Geist, James R

Source: Oral surgery, oral medicine, oral pathology and oral radiology; Sep 2017; vol. 124 (no. 3); p. 211-213

**Ameloblastic Carcinoma: A Rare Malignant Tumour in Maxillofacial Region.**

Author(s): Gawande, Pushkar Devidas; Khande, Kiran; Agrawal, Gaurav; Aditya, Amita

Source: Journal of maxillofacial and oral surgery; Sep 2017; vol. 16 (no. 3); p. 377-381

**Abstract:** Ameloblastic carcinoma (AC) is a rare malignant odontogenic tumor with poor prognosis. It has an aggressive clinical course with extensive local destruction. It occurs primarily in the mandible. It may clinically present as a cystic lesion with benign clinical feature or as a large mass with ulceration, significant bone resorption and mobility of teeth in the affected region. Reliable evidence of its biological activity along with extensive local destruction, direct extension of tumor, lymph node involvement and metastasis to various sites (frequently lung) have been reported. Wide local excision is the treatment of choice along with regional lymph node dissection. Because of recurrence...
close periodic assessment of the patient is advocated. The authors discussed a rare case of AC of mandible; with metastasis to regional lymph nodes in a 45 year old male along with a long-term follow up.

**Animal Inflicted Maxillofacial Injuries: Treatment Modalities and Our Experience.**

*Author(s):* Yadav, Anjani Kumar; Jaisani, Mehul Rajesh; Pradhan, Leeza; Dongol, Ashok; Singh, Arpita  
*Source:* Journal of maxillofacial and oral surgery; Sep 2017; vol. 16 (no. 3); p. 356-364  
*Publication Type(s):* Journal Article  
*Abstract:* INTRODUCTION Animal inflicted injuries to the face and neck are becoming much more common as people lavish affection on pets. Injuries caused by animal attacks to the face can cause complex injuries to soft and hard tissues, presented as perforations, lacerations, crushes, avulsion or fractures. An uncountable number of bacteria and virus can be found in such injuries, with a potential pathological effect to humans, regarding infections. Although the infection rate is low due to excellent blood supply to face, the injuries have disfiguring effect with possible psychological repercussion to the patients. The treatment of animal inflicted injuries must address the soft tissue defect, neurovascular injuries, and bone injuries as well as prevention of post treatment infection. Primary wound repair is the treatment of choice for most clinically uninfected bite wound where as delayed closure should be reserved for wounds at high risk of infection or already infected wounds and tissue defect may require local flap or micro-vascular re-implantations. MATERIAL AND METHODS In this article, we have elicited up to date considerations regarding the management of animal inflicted injuries to the face based on literature search and exemplified by multiple case reports. CONCLUSION For bite injuries on face, immediate primary wound repair after meticulous wound debridement and irrigation with sufficient volume added by antibiotic prophylaxis gives good cosmetic results with minimum risk of infection. Depending upon type of attack and age of victims, psychiatric or social counseling may also be required.

**Training Pathways in Oral and Maxillofacial Surgery Across the Globe-A Mini Review.**

*Author(s):* Kumar, Sanjeev  
*Source:* Journal of maxillofacial and oral surgery; Sep 2017; vol. 16 (no. 3); p. 269-276  
*Publication Type(s):* Journal Article Review  
*Abstract:* Due to historical reasons, many different training pathways exist across countries that lead to a degree in oral and maxillofacial surgery. Although it is generally accepted to be a specialty of dentistry, the complex nature of procedures being performed by OMF surgeons today, has necessitated extensive general surgical training. Many countries have thus made dual qualification mandatory, while others have extended training programs in OMFS with integrated medical teaching. In India, frequent contact with foreign experts, availability of world-class equipment and efforts of individual surgeons has ensured that the full scope of OMFS is practised in select centres of learning. However, the MDS curriculum dictated by DCI has not conformed to the requirements of the specialty as practiced today. This brief mini-review of the various training pathways aims at comparing our system with other countries and attempts to draw lessons which could help improve future OMFS training in India.

**DERMATOLOGIC LESIONS SUBMITTED TO AN ORAL AND MAXILLOFACIAL PATHOLOGY BIOPSY SERVICE: AN ANALYSIS OF 2487 CASES.**

*Author(s):* Reddy, R.; Fitzpatrick, S.; Davidova, L.; Bhattacharyya, I.; Cohen, D.; Islam, M.  
*Source:* Oral Surgery, Oral Medicine, Oral Pathology & Oral Radiology; Sep 2017; vol. 124 (no. 3)
**Publication Type(s):** Academic Journal

**A 33-YEAR RETROSPECTIVE ANALYSIS OF METASTATIC TUMORS TO THE ORAL AND MAXILLOFACIAL REGION.**

**Author(s):** Kyles, B.J.; Glass, S.; Reich, R.; Freedman, P.

**Source:** Oral Surgery, Oral Medicine, Oral Pathology & Oral Radiology; Sep 2017; vol. 124 (no. 3)

**Publication Type(s):** Academic Journal

**Abstracts presented at the Annual Meeting of the American Academy of Oral and Maxillofacial Pathology, April 29 to May 3, 2017.**

**Author(s):**

**Source:** Oral Surgery, Oral Medicine, Oral Pathology & Oral Radiology; Sep 2017; vol. 124 (no. 3)

**Publication Type(s):** Academic Journal

**Influence of a Commercial Lead Apron on Patient Skin Dose Delivered During Oral and Maxillofacial Examinations under Cone Beam Computed Tomography (CBCT)**

**Author(s):** Schulze R.K.W.; Sazgar M.; Karle H.; de Las Heras Gala H.

**Source:** Health physics; Aug 2017; vol. 113 (no. 2); p. 129-134

**Publication Type(s):** Article

**Abstract:** The purpose of this paper is to investigate the impact of a commercial lead apron on patient skin dose delivered during maxillofacial CBCT in five critical regions by means of solid-state dosimetry. Five anatomical regions (thyroid gland, left and right breast, gonads, back of the phantom torso) in an adult female anthropomorphic phantom were selected for dose measurement by means of the highly sensitive solid-state dosimeter QUART didoSVM. Ten repeated single exposures were assessed for each patient body region for a total of five commercial CBCT devices with and without a lead apron present. Shielded and non-shielded exposures were compared under the paired Wilcoxon test, with absolute and relative differences computed. Reproducibility was expressed as the coefficient of variation (CV) between the 10 repeated assessments. The highest doses observed at skin level were found at the thyroid (mean shielded +/- SD: 450.5 +/- 346.7 mGy; non-shielded: 339.2 +/- 348.8 mGy, p = 0.4922). Shielding resulted in a highly significant (p < 0.001) 93% dose reduction in skin dose in the female breast region with a mean non-shielded dose of approximately 35 mGy. Dose reduction was also significantly lower for the back-region (mean: -65%, p < 0.0001) as well as for the gonad-region (mean: -98%, p < 0.0001) in the shielded situation. Reproducibility was inversely correlated to skin dose (R^2 = 0.748, p < 0.0001) with a mean CV of 10.45% (SD: 24.53%). Skin dose in the thyroid region of the simulated patient was relatively high and not influenced by the lead apron, which did not shield this region. Dose reduction by means of a commercial lead apron was significant in all other regions, particularly in the region of the female breast.

**Influence of ultra-low-dose and iterative reconstructions on the visualization of orbital soft tissues on maxillofacial CT**

**Author(s):** Widmann G.; Schullian P.; Steurer M.; Gassner E.-M.; Juranek D.; Waldenberger F.

**Source:** American Journal of Neuroradiology; Aug 2017; vol. 38 (no. 8); p. 1630-1635

**Publication Type(s):** Article
**Abstract:** BACKGROUND AND PURPOSE: Dose reduction on CT scans for surgical planning and postoperative evaluation of midface and orbital fractures is an important concern. The purpose of this study was to evaluate the variability of various low-dose and iterative reconstruction techniques on the visualization of orbital soft tissues. MATERIALS AND METHODS: Contrast-to-noise ratios of the optic nerve and inferior rectus muscle and subjective scores of a human cadaver were calculated from CT with a reference dose protocol (CT dose index volume = 36.69 mGy) and a subsequent series of low-dose protocols (LDPs I-IV: CT dose index volume 4.18, 2.64, 0.99, and 0.53 mGy) with filtered back-projection (FBP) and adaptive statistical iterative reconstruction (ASIR)-50, ASIR-100, and model-based iterative reconstruction. The Dunn Multiple Comparison Test was used to compare each combination of protocols (alpha = .05). RESULTS: Compared with the reference dose protocol with FBP, the following statistically significant differences in contrast-to-noise ratios were shown (all, P<=.012) for the following: 1) optic nerve: LDP-I with FBP; LDP-II with FBP and ASIR-50; LDP-III with FBP, ASIR-50, and ASIR-100; and LDP-IV with FBP, ASIR-50, and ASIR-100; and 2) inferior rectus muscle: LDP-II with FBP, LDP-III with FBP and ASIR-50, and LDP-IV with FBP, ASIR-50, and ASIR-100. Model-based iterative reconstruction showed the best contrast-to-noise ratio in all images and provided similar subjective scores for LDP-II. ASIR-50 had no remarkable effect, and ASIR-100, a small effect on subjective scores. CONCLUSIONS: Compared with a reference dose protocol with FBP, model-based iterative reconstruction may show similar diagnostic visibility of orbital soft tissues at a CT dose index volume of 2.64 mGy. Low-dose technology and iterative reconstruction technology may redefine current reference dose levels in maxillofacial CT.

The use of oral and maxillofacial pathology services by general pathologists and their attitude towards it in Saudi Arabia

Author(s): Binmadi N.O.; Almazrooa S.A.

Source: Saudi Medical Journal; Aug 2017; vol. 38 (no. 8); p. 857-862

Available in full text at Saudi medical journal [Saudi Med J] NLMUID: 7909441 - from EBSCOhost

Abstract: Objectives: To investigate the awareness and usage of oral and maxillofacial pathology (OMFP) subspecialty services among pathologists in Saudi Arabia. Methods: In this cross-sectional study, we conducted an electronic questionnaire survey of pathologists in all regions of Saudi Arabia. The study was conducted between July 2015 and August 2016. The questionnaire comprised 19 questions to evaluate the knowledge of pathologists regarding microscopic OMFP and their perceptions towards this subspecialty. Results: Most of the pathologists surveyed (94.6%) were aware of the OMFP subspecialty and its scope of practice. Although most of the pathologists recognized the importance and need of this subspecialty, 70% of them never referred or consulted an oral pathologist as they either diagnosed the cases themselves or did not know any oral pathologist (57.7%). The pathologists had the greatest difficulty in identifying and diagnosing odontogenic tumors, salivary gland tumors, and odontogenic cysts. Conclusion: Pathologists are aware of the OMFP subspecialty, but their utilization of the services offered by OMFP specialists in Saudi Arabia is quite low despite the strong demand for OMFP services. Copyright © 2017, Saudi Arabian Armed Forces Hospital. All rights reserved.

The epidemiological analysis of maxillofacial fractures in Italy: The experience of a single tertiary center with 1720 patients

Author(s): Bonavolonta P.; Dell'aversana Orabona G.; Abbate V.; Vaira L.A.; Lo Faro C.; Petrocelli M.

Source: Journal of Cranio-Maxillofacial Surgery; Aug 2017; vol. 45 (no. 8); p. 1319-1326

Publication Type(s): Article
Abstract: Purpose Maxillofacial fractures represent a serious public health problem. Their epidemiology is extremely variable, and its analysis is crucial to establish effective treatment and prevention of these injuries. However only two works have been published about maxillofacial fracture epidemiology in Italy. Materials and methods The records of 1720 patients diagnosed with maxillofacial fractures in a 15-years period (2001-2015) in our department were retrospectively reviewed. Results A total of 1108 male and 612 female patients were included in the study. The most frequent aetiology of fracture was road traffic injuries (57.1%), followed by assault (21.7%), falls (14.2%), work accidents (3.5%), sport accidents (3.3%) and other causes (0.2%). Significant variations of aetiology were detected between males and females and between Italians and individuals from other countries. The most frequently observed fracture involved the mandible (861 cases, 36%), followed by zygoma (489 cases, 20.4%), orbital walls (386 cases, 16.1%) and maxilla (282 cases, 11.8%). Conclusion Road traffic legislation enforcement and continuous public education regarding the use of security devices remain an ongoing problem in our region and should be encouraged. In the same way, as migration flows influence and change the epidemiology of facial traumas, it is crucial to establish social support programs that avoid these disadvantaged categories of victims of violence and crime. Copyright © 2017 European Association for Cranio-Maxillo-Facial Surgery

Health Policy Research May Ensure the Future of Oral and Maxillofacial Surgery
Author(s): Patel N.A.; Ji Y.D.; Dodson T.B.; Donoff R.B.
Source: Journal of Oral and Maxillofacial Surgery; Aug 2017; vol. 75 (no. 8); p. 1579-1580
Publication Type(s): Article

Surgical Correction of Maxillofacial Skeletal Deformities
Author(s): Cottrell D.A.; Farrell B.; Ferrer-Nuin L.; Ratner S.
Source: Journal of Oral and Maxillofacial Surgery; Aug 2017; vol. 75 (no. 8)
Publication Type(s): Article

Cone beam computed tomography for dental and maxillofacial imaging: technique improvement and low-dose protocols
Author(s): Feragalli B.; Macri M.; Festa F.; Caputi S.; Rampado O.; Abate C.; Guglielmi G.; Stromei F.
Source: La Radiologia medica; Aug 2017; vol. 122 (no. 8); p. 581-588
Publication Type(s): Article

Abstract: OBJECTIVE: The aim of this study was to evaluate images quality and radiation doses of Cone Beam Computed Tomography (CBCT) for dental and maxillofacial imaging testing five different acquisition protocols. METHODS: Dose measurements of different acquisition protocols were calculated for Pax Zenith three-dimensional (3D) Cone Beam (Vatech, Korea) and for conventional orthopantomography (OPT) and cephalometric skull imaging Ortophos (Sirona Dental Systems, Bernsheim, Germany). The absorbed organ doses were measured using an anthropomorphic phantom loaded with thermoluminescent dosimeters at 58 sites related to sensitive organs. Five different CBCT protocols were evaluated for image quality and radiation doses. They differed in FOV, image resolution, kVp, mA, acquisition time in seconds and radiation dose. Measurements were then carried out with the orthopantomograph. Equivalent and effective doses were calculated. RESULTS: The reference protocol with large FOV, high resolution quality images, 95 kVp, 5 mA and acquisition time of 24 s resulted in a DAP value of 1556 mGy cm2 instead the protocol with reduced kVp from 95 to 80 kVp translated into a value of DAP inferior to 35% (from 1556 to 1013 mGy cm2). Going from a high resolution to a normal resolution, there was a reduction of the acquisition time to 15 s which allowed further dose reduction of approximately 40% (628 mGy cm2);
this protocol resulted in a value of effective dose of 35 microSievert (μSv). Moreover, the effect of changing FOV has been evaluated, considering two scans with a reduced FOV (160 x 140 and 120 x 90 mm, respectively). CONCLUSIONS: CBCT low-dose protocol with large FOV, normal resolution quality images, 80 kVp, 5 mA and acquisition time of 15 s resulted in a value of effective dose of 35 microSievert (μSv). This protocol allows the study of maxillofacial region with high quality of images and a very low radiation dose and, therefore, could be proposed in selected case where a complete assessment of dental and maxillofacial region is useful for treatment planning.

Secondary reconstruction of maxillofacial trauma

Author(s): Castro-Nunez J.; Van Sickels J.E.
Source: Current Opinion in Otolaryngology and Head and Neck Surgery; Aug 2017; vol. 25 (no. 4); p. 320-325
Publication Type(s): Review

Abstract: Purpose of review: Craniomaxillofacial trauma is one of the most complex clinical conditions in contemporary maxillofacial surgery. Vital structures and possible functional and esthetic sequelae are important considerations following this type of trauma and intervention. Despite the best efforts of the primary surgery, there are a group of patients that will have poor outcomes requiring secondary reconstruction to restore form and function. The purpose of this study is to review current concepts on secondary reconstruction to the maxillofacial complex. Recent findings: The evaluation of a posttraumatic patient for a secondary reconstruction must include an assessment of the different subunits of the upper face, middle face, and lower face. Virtual surgical planning and surgical guides represent the most important innovations in secondary reconstruction over the past few years. Intraoperative navigational surgery/computed-assisted navigation is used in complex cases. Facial asymmetry can be corrected or significantly improved by segmentation of the computerized tomography dataset and mirroring of the unaffected side by means of virtual surgical planning. Navigational surgery/computed-assisted navigation allows for a more precise surgical correction when secondary reconstruction involves the replacement of extensive anatomical areas. The use of technology can result in custom-made replacements and prebent plates, which are more stable and resistant to fracture because of metal fatigue. Summary: Careful perioperative evaluation is the key to positive outcomes of secondary reconstruction after trauma. The advent of technological tools has played a capital role in helping the surgical team perform a given treatment plan in a more precise and predictable manner. Copyright © 2017 Wolters Kluwer Health, Inc. All rights reserved.


Author(s): Taub, Daniel; Yampolsky, Andrew; Diecidue, Robert; Gold, Lionel
Source: Oral and maxillofacial surgery clinics of North America; Aug 2017
Publication Type(s): Journal Article Review

Abstract: The management and treatment of odontogenic infection, and its frequent extension into the head and neck, remains an important section of oral and maxillofacial surgical practice. This area of maxillofacial expertise is widely recognized by the medical community and an essential component to the hospital referral system. Although the general principles of infection management have not changed, there have been modifications in the timing of treatment sequences and treatment techniques. These modifications are influenced by the development of diagnostic methods and advances in bacterial genetics and antibiotic usage. This article reviews treatment considerations and controversies surrounding this subject.
Effect of thixotropic agents as additives on the mechanical properties of maxillofacial silicone elastomers.

Author(s): Bibars, Abdel Rahim M; Al-Hourani, Zeid; Khader, Yousef; Waters, Mark

Source: The Journal of prosthetic dentistry; Aug 2017

Publication Type(s): Journal Article

Abstract: STATEMENT OF PROBLEM The incorporation of thixotropic agents to prevent slumping during the silicone packing procedure may alter some favorable mechanical properties of the silicone elastomers and could possibly influence the success of the prosthesis. PURPOSE The purpose of this in vitro study was to evaluate the effect of adding thixotropic agents on the mechanical properties of 3 commonly used silicone elastomers. MATERIAL AND METHODS Specimens of 3 maxillofacial silicones (M511, Z004; Technovent Ltd, and A2000; Factor II Inc) were prepared according to the manufacturers' instructions. Tear and tensile strength values and percentages of elongation and hardness were evaluated for each material with and without thixotropic agents. Data were analyzed using 1-way ANOVA and the Bonferroni post hoc test (α=.05). RESULTS Results showed that the 3 types of silicone elastomers had significantly different (P<.001) tensile and tear strength and hardness values and percentages of elongation. Z004 silicone showed the highest tensile and tear strength followed by A2000 and M511, regardless of the addition of thixotropic agent. The addition of a thixotropic agent decreased the tear strength (P<.001) but not the tensile strength for all types of silicone. Percentage of elongation was the highest in M511 and the lowest in A2000 and was significantly higher (P<.001) for silicones with no added thixotropic agent. Hardness was highest in A2000 and lowest in M511. Adding a thixotropic agent decreased hardness significantly (P<.001) for Z004 and A2000 only. CONCLUSIONSThe incorporation of thixotropic agents into the 3 maxillofacial silicone elastomers used in this study reduced some favorable mechanical properties, particularly tear strength and percentage of elongation. Z004 showed superior mechanical properties among the 3 tested silicones.

Comparison between flat-panel volume computed tomography and histologic assessments of bone invasion of maxillofacial tumors: utility of an instantaneous radiologic diagnostic tool.

Author(s): Schaaf, Heidrun; Wahab-Göthe, Takwa; Kerkmann, Heiko; Streckbein, Philipp

Source: Oral surgery, oral medicine, oral pathology and oral radiology; Aug 2017

Publication Type(s): Journal Article

Abstract: OBJECTIVE The aim of this study was to compare the accuracy of flat-panel volume computed tomography (fpVCT) to histopathologic evaluation of excised tumors of the jaws in the detection of the degree of tumor infiltration, the presence of tumor at the resection margins, and the sizes of lesions. STUDY DESIGN This preliminary study included 47 patients undergoing jaw resection for tumor invasion of bone. The specimens were examined by histology and 3-dimensional fpVCT, and the parameters of bone infiltration, resection margins, and tumor size were determined. RESULTS In 95.7% of cases, the fpVCT results of tumorous bone infiltration were in accordance with the histologic findings. An examination of the resection margins showed 100%
concordance between the 2 methods, and all resection margins were found to be clear in both fpVCT and the histologic examination. Identical pathologic and nonpathologic results were seen with the use of both diagnostic methods. Radiologic estimates of tumor size were larger than histologic measurements in the case of small tumors but the true sizes of the larger lesions were underestimated.

CONCLUSIONSThe intraoperative diagnostic gap can be closed by using fpVCT to investigate bone destruction, allowing one-step resections and reconstructions to become more reliable.

Impact of prone, supine and oblique patient positioning on CBCT image quality, contrast-to-noise ratio and figure of merit value in the maxillofacial region.

Author(s): Koivisto, Juha; van Eijnatten, Maureen; Järnstedt, Jorma; Holli-Helenius, Kirsi;
Source: Dento maxillo facial radiology; Aug 2017; vol. 46 (no. 6); p. 20160418
Publication Type(s): Journal Article

Abstract:OBJECTIVESTo assess the impact of supine, prone and oblique patient imaging positions on the image quality, contrast-to-noise ratio (CNR) and figure of merit (FOM) value in the maxillofacial region using a CBCT scanner. Furthermore, the CBCT supine images were compared with supine multislice CT (MSCT) images.

METHODSOne fresh frozen cadaver head was scanned in prone, supine and oblique imaging positions using a mobile CBCT scanner. MSCT images of the head were acquired in a supine position. Two radiologists graded the CBCT and MSCT images at ten different anatomical sites according to their image quality using a six-point scale. The CNR and FOM values were calculated at two different anatomical sites on the CBCT and MSCT images.

RESULTSThe best image quality was achieved in the prone imaging position for sinus, mandible and maxilla, followed by the supine and oblique imaging positions. 12-mA prone images presented high delineation scores for all anatomical landmarks, except for the ear region (carotid canal), which presented adequate to poor delineation scores for all studied head positions and exposure parameters. The MSCT scanner offered similar image qualities to the 7.5-mA supine images acquired using the mobile CBCT scanner. The prone imaging position offered the best CNR and FOM values on the mobile CBCT scanner.

CONCLUSIONSHead positioning has an impact on CBCT image quality. The best CBCT image quality can be achieved using the prone and supine imaging positions. The oblique imaging position offers inadequate image quality except in the sinus region.

Maxillofacial trauma patterns associated with external auditory canal fractures: Cone beam computed tomography analysis.

Author(s): Ali, Ibrahim K; Sansare, Kaustubh; Karjodkar, Freny R; Salve, Prashant; Vanga, Kavita
Source: Dental traumatology : official publication of International Association for Dental Traumatology; Aug 2017; vol. 33 (no. 4); p. 276-280
Publication Type(s): Journal Article

Abstract:BACKGROUND/AIMSThere is a paucity of literature on external auditory canal (EAC) fractures secondary to maxillofacial trauma, with most of the literature on EAC fractures consisting of isolated case reports. To the authors’ best knowledge, this is the first study to use cone beam computed tomography to evaluate the EAC region. The aim of this study was to assess the prevalence of external auditory canal (EAC) fracture following maxillofacial trauma and to evaluate the association between EAC fracture and other maxillofacial fractures and the region of trauma.

MATERIALS AND METHODSOne hundred patients were prospectively evaluated over 6 months from February to August 2016. The patients were referred for CBCT regarding temporomandibular joint or condylar fractures following maxillofacial trauma. Two observers (both experienced radiologists) assessed the EAC and associated fractures in the maxillofacial region.

RESULTSExternal auditory canal (EAC) fracture was confirmed in 32% of the patients. Of the
EAC fractures, 68.75% and 31.25% were associated with mandibular fractures and non-mandibular fractures, respectively. Of the EAC fractures, 68.75% were single fractures and 31.25% of patients had multiple comminuted fractures. Significant association was observed on cross-tabulation of the fractured region and region of trauma with the presence of EAC fracture using chi-square test.

**CONCLUSION**

External auditory canal (EAC) fracture is associated with maxillofacial fractures with increased incidence in mandibular fractures compared to non-mandibular fractures.

**Videos empower maxillofacial patients.**

**Author(s):** Hitchcock, Gill  
**Source:** Frontline (20454910); Aug 2017; vol. 23 (no. 14); p. 10-11  
**Publication Type(s):** Periodical

**History of the Parameters of Care for Oral and Maxillofacial Surgery.**

**Author(s):**  
**Source:** Journal of Oral & Maxillofacial Surgery (02782391); Aug 2017; vol. 75  
**Publication Type(s):** Academic Journal

**International Endorsement of the Parameters of Care for Oral and Maxillofacial Surgery.**

**Author(s):**  
**Source:** Journal of Oral & Maxillofacial Surgery (02782391); Aug 2017; vol. 75  
**Publication Type(s):** Academic Journal

**LANGERHANS CELLS HISTIOCYTOSIS: CASE REPORT OF MAXILLOFACIAL LESIONS.**

**Author(s):** CRUZ, ALINE FERNANDA; DE PAULA RODRIGUES DIAS, JÉSSICA; AMARAL, SÉRGIO ANTONUCCI; MATIAS, MICHELLE DANIELLE PORTO; DE ALBUQUERQUE, DANIEL RICALDONI; DE RESENDE, RENATA GONÇALVES; DE LACERDA, JÚLIO CÉSAR TANOS  
**Source:** Oral Surgery, Oral Medicine, Oral Pathology & Oral Radiology; Aug 2017; vol. 124 (no. 2)  
**Publication Type(s):** Academic Journal

**EPIDEMIOLOGIC SURVEY OF 581 ORAL AND MAXILLOFACIAL LESIONS BIOPSIED IN THE PERIOD FROM 2001 TO 2010.**

**Author(s):** DA COSTA PEREIRA, FRANCIELI BATISTA HAUS; PALMA, LUIZ FELIPE;  
**Source:** Oral Surgery, Oral Medicine, Oral Pathology & Oral Radiology; Aug 2017; vol. 124 (no. 2)  
**Publication Type(s):** Academic Journal

**Cleft lip and palate**

Electromyographic analysis of superior orbicularis oris muscle function in children surgically treated for unilateral complete cleft lip and palate  
**Author(s):** Szyszka-Sommerfeld L.; Wozniak K.; Matthews-Brzozowska T.; Kawala B.; Mikulewicz M.  
**Source:** Journal of Cranio-Maxillofacial Surgery; 2017
Purpose: The aim of this study was to assess the electrical activity of the superior orbicularis oris muscle in children surgically treated for unilateral complete cleft lip and palate (UCCLP). Material and methods: The sample comprised 45 patients 6.38-12.68 years of age with UCCLP and 40 subjects 6.61-11.71 years of age with no clefts. Electromyographical (EMG) recordings were taken with a DAB-Bluetooth Instrument (Zebris Medical GmbH, Germany) in the rest position and during saliva swallowing, lip protrusion and reciprocal compression of the lips, as well as while producing the phonemes /p/, /b/, and /m/ combined with the vowel /a/. Results: The electrical activity of the upper lip during saliva swallowing and lip compression was significantly greater in the cleft group. Similar resting level activity was observed in both groups. During the production of the /p/, /b/, and /m/ phonemes combined with the vowel /a/ the results showed no significant differences in the EMG activity between children with UCCLP and noncleft subjects. Conclusion: Patients with UCCLP have abnormal upper lip function characterized by increased activity of the superior orbicularis oris muscle during saliva swallowing and lip compression, and this may affect facial morphology.


Objective: The purpose of this project was to develop objective computer-based methods to measure nasal asymmetry and abnormality in children undergoing treatment of unilateral cleft lip (UCL) and to determine the correlation of these measures to clinical expectations. Participants: Thirty infants with UCL undergoing cleft lip repair; 27 children with UCL aged 8 to 10 years who had previously undergone cleft lip repair; 3 control infants; 3 control children aged 8 to 10 years. Interventions: To measure nasal symmetry, we used a process of depth mapping and calculated the Depth Area Difference. To measure abnormality, we used the reconstruction error from Principle Component Analysis (PCA) that was based upon characteristics of a dataset of over 2000 images of normal control subjects. Main Outcome Measures: Depth Area Difference and PCA Reconstruction Error for cleft type, changes with surgery, and individual subjects ranked according to cleft severity were assessed. Results: Significant differences in Depth Area Difference and PCA Reconstruction Error were found between cleft types and found before and after surgery. Nasal symmetry and normalcy scores for infants with UCL approached those of controls after surgery, and there was a strong correlation with ranked cleft severity. For older children, measures of nasal symmetry and abnormality were better than infants prior to repair but worse than infants following UCL repair. Conclusions: Our computer-based 3D analysis of nasal symmetry and normalcy correlated with clinical expectations. Automated processing made measurement convenient. Use of these measures may help to objectively measure cleft severity and treatment outcome.

The development of the cleft aesthetic rating scale: A new rating scale for the assessment of nasolabial appearance in complete unilateral cleft lip and palate patients

Objective: The development of the Cleft Aesthetic Rating Scale, a simple and reliable photographic reference scale for the assessment of nasolabial appearance in complete unilateral
Remote digital preoperative assessments for cleft lip and palate may improve clinical and economic impact in global plastic surgery

**Author(s):** Hughes C.; Campbell J.; Babigian A.; Castiglione C.; Mukhopadhyay S.; McCormack S.

**Source:** Cleft Palate-Craniofacial Journal; Sep 2017; vol. 54 (no. 5); p. 535-539

**Abstract:** Objective: Reconstructive surgical care can play a vital role in the resource-poor settings of low- and middle-income countries. Telemedicine platforms can improve the efficiency and effectiveness of surgical care. The purpose of this study is to determine whether remote digital video evaluations are reliable in the context of a short-term plastic surgical intervention. Setting: The setting for this study was a district hospital located in Latacunga, Ecuador. Patients: Participants were 27 consecutive patients who presented for operative repair of cleft lip and palate. Main Outcome Measures: We calculated kappa coefficients for reliability between in-person and remote digital video assessments for the classification of cleft lip and palate between two separate craniofacial surgeons. We hypothesized that the technology would be a reliable method of preoperative assessment for cleft disease. Results: Of the 27 (81.4%) participants, 22 received operative treatment for their cleft disorder. Mean age was 11.1 +/- 8.3 years. Patients presented with a spectrum of disorders, including cleft lip (24 of 27, 88.9%), cleft palate (19 of 27, 70.4%), and alveolar cleft (19 of 27, 70.4%). We found a 95.7% agreement between observers for cleft lip with substantial reliability (kappa = .78, P Copyright © 2017 American Cleft Palate-Craniofacial Association.
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63) and 20.13 years for the group with postoperative complications (n = 31). There was a positive association between age and type of graft and cases with alveolar bone graft complications. Patients aged 12 years or more had a four times more chance of developing alveolar bone graft complications. Particulate bone graft from iliac crest demonstrated better results compared with block graft or mixed graft. Conclusion: Patients with cleft lip and palate who were 12 years or older had a greater chance of developing complications after grafting the alveolar bone. Furthermore, particulate alveolar graft from iliac crest had significantly better outcomes. Copyright © 2017 American Cleft Palate-Craniofacial Association.

Diagnosing subtle palatal anomalies: Validation of video-analysis and assessment protocol for diagnosing occult submucous cleft palate

Author(s): Rourke R.; Jabbour N.; Weinberg S.M.; Marazita M.L.
Source: International Journal of Pediatric Otorhinolaryngology; Sep 2017; vol. 100; p. 242-246
Publication Type(s): Article
Abstract: Introduction Submucous cleft palate (SMCP) classically involves bifid uvula, zona pellucida, and notched hard palate. However, patients may present with more subtle anatomic abnormalities. The ability to detect these abnormalities is important for surgeons managing velopharyngeal dysfunction (VPD) or considering adenoidectomy. Objectives Validate an assessment protocol for diagnosis of occult submucous cleft palate (OSMCP) and identify physical examination features present in patients with OSMCP in the relaxed and activated palate positions. Methods Study participants included patients referred to a pediatric VPD clinic with concern for hypernasality or SMCP. Using an appropriately encrypted iPod touch, transoral video was obtained for each patient with the palate in the relaxed and activated positions. The videos were reviewed by two otolaryngologists in normal speed and slow-motion, as needed, and a questionnaire was completed by each reviewer pertaining to the anatomy and function of the palate. Results 47 patients, with an average age of 4.6 years, were included in the study over a one-year period. Four videos were unusable due to incomplete view of the palate. The most common palatal abnormality noted was OSMCP, diagnosed by each reviewer in 26/43 and 30/43 patients respectively. Using the assessment protocol, agreement on palatal diagnosis was 83.7% (kappa = 0.68), indicating substantial agreement, with the most prevalent anatomic features being vaulted palate elevation (96%) and visible notching of hard palate (75%). Conclusion The diagnosis of subtle palatal anomalies is difficult and can be subjective. Using the proposed video-analysis method and assessment protocol may improve reliability of diagnosis of OSMCP. Copyright © 2017 Elsevier B.V.

Assessment of complete unilateral cleft lip and palate treatment outcome using EUROCRAN index and associated factors

Author(s): Arshad A.I.; Alam M.K.; Khamis M.F.
Source: International Journal of Pediatric Otorhinolaryngology; Sep 2017; vol. 100; p. 91-95
Publication Type(s): Article
Abstract: Objectives Assessment of treatment outcome is the only non-invasive approach to identify the effects of cleft lip and palate repair and modify management accordingly. Here the aim is to assess the outcome of complete unilateral cleft lip and palate (CUCLP) patients using EUROCRAN index and to check whether there are any factors associated with the treatment outcome. Materials and methods It is a retrospective cross sectional study. Dental models were collected from archives of two cleft referral centers in Pakistan. Five blinded examiners scored 101 models twice at two week interval. The primary outcome was mean EUROCRAN scores based on dental arch relationships and palatal surface morphology. Results A mean(SD) score of 2.72 (0.76) and 2.20 (0.73) was determined based on dental arch relationships and palatal surface morphology, respectively.
According to the final logistic regression model, modified Millard technique (cheiloplasty) and Veau-Wardill-Kliners’ method (palatoplasty) had higher odds of producing unfavorable treatment outcome. Conclusions Present study determined a fair and a fair to poor treatment outcome based on dental arch relationships and palatal surface morphology, respectively. Our study suggests a significant association between treatment outcome and primary surgical techniques for lip and palate. These findings could warrant a modification of management protocols to ensure improvement in future cleft outcomes. Copyright © 2017 Elsevier B.V.

Delayed primary palatal closure in resource-poor countries: Speech results in Ugandan older children and young adults with cleft (lip and) palate

Author(s): Bruneel L.; Luyten A.; Bettens K.; Dhaeseleer E.; Dhondt C.; Van Lierde K.; Hodges A.

Source: Journal of Communication Disorders; Sep 2017; vol. 69; p. 1-14

Publication Type(s): Article

Abstract: Aims Unrepaired clefts still regularly occur in resource-poor countries as a result of limited health-care access. The purpose of the present study was to report resonance, airflow and articulation characteristics following delayed (>= 8 years) primary palatal closure. Methods Fifteen Ugandan participants with cleft (lip and) palate (CP +/- L) were included as well as 15 age- and gender-matched Ugandan subjects without clefts. Palatal closure was performed at a mean age of 15;10 years using the Sommerlad technique. Speech evaluations were carried out on a single occasion postoperatively (mean age: 18;10 years). Resonance and nasal airflow were perceptually evaluated and detailed phonetic and phonological assessments were carried out. Additionally, nasalance values were determined. Results Nasal emission occurred postoperatively in only 27% (4/15) of the patients, whereas resonance disorders and articulation errors were prevalent in 87% (13/15) of the patient group. Compared with the control group, a significantly higher prevalence of hypernasality and significantly higher nasalance values for all oral and oronasal speech samples were obtained in the CP +/- L group. Moreover, significantly smaller consonant inventories and significantly more phonetic and phonological disorders were observed. Conclusions Delayed palatal repair (>= 8 years) seems to be insufficient to eliminate nasal airflow errors, resonance abnormalities, and articulation disorders. In order to prevent patients’ late presentation at specialized centers, the availability of high quality surgical cleft palate treatment should increase as well as people’s awareness of the possibility and importance of early surgical intervention. Moreover, speech therapy following delayed palatal closure would be beneficial. Furthermore, a standardized and validated protocol for speech assessment in future studies is advocated. Copyright © 2017 Elsevier Inc.

Association of gel-forming mucins and aquaporin gene expression with hearing loss, effusion viscosity, and inflammation in otitis media with effusion

Author(s): Samuels T.L.; Yan J.C.; Khampang P.; Hong W.; Johnston N.; Chun R.H.; McCormick M.E.

Source: JAMA Otolaryngology - Head and Neck Surgery; Aug 2017; vol. 143 (no. 8); p. 810-817

Publication Type(s): Article

Abstract: Importance: Persistent, viscous middle ear effusion in pediatric otitis media (OM) contributes to increased likelihood of anesthesia and surgery, conductive hearing loss, and subsequent developmental delays. Biomarkers of effusion viscosity and hearing loss have not yet been identified despite the potential that such markers hold for targeted therapy and screening. Objective: To investigate the association of gel-forming mucins and aquaporin 5 (AQP5) gene expression with inflammation, effusion viscosity, and hearing loss in pediatric OM with effusion (OME). Design, Setting, and Participants: Case-control study of 31 pediatric patients (aged 6 months to 12 years) with OME undergoing tympanostomy tube placement and control individuals (aged 1 to
10 years) undergoing surgery for cochlear implantation from February 1, 2013, through November 30, 2014. Those with 1 or more episodes of OME in the previous 12 months, immunologic abnormality, anatomical or physiologic ear defect, OME-associated syndrome (ie, Down syndrome, cleft palate), chronic mastoiditis, or history of cholesteatoma were excluded from the study. All patients with OME and 1 control were recruited from Children's Hospital of Wisconsin, Milwaukee. The remainder of the controls were recruited from Sick Kids Hospital in Toronto, Ontario, Canada. Main Outcomes and Measures: Two to 3 middle ear biopsy specimens, effusions, and preoperative audiometric data (obtained Copyright © 2017 American Medical Association. All rights reserved.

Clinical and molecular consequences of disease-associated de novo mutations in SATB2

Author(s): Bengani H.; Handley M.; FitzPatrick D.R.; Alvi M.; Fannemel M.; Ibitoye R.; Kini U.
Source: Genetics in Medicine; Aug 2017; vol. 19 (no. 8); p. 900-908
Publication Type(s): Article
Abstract: Purpose: To characterize features associated with de novo mutations affecting SATB2 function in individuals ascertained on the basis of intellectual disability. Methods: Twenty previously unreported individuals with 19 different SATB2 mutations (11 loss-of-function and 8 missense variants) were studied. Fibroblasts were used to measure mutant protein production. Subcellular localization and mobility of wildtype and mutant SATB2 were assessed using fluorescently tagged protein. Results: Recurrent clinical features included neurodevelopmental impairment (19/19), absent/near absent speech (16/19), normal somatic growth (17/19), cleft palate (9/19), drooling (12/19), and dental anomalies (8/19). Six of eight missense variants clustered in the first CUT domain. Sibling recurrence due to gonadal mosaicism was seen in one family. A nonsense mutation in the last exon resulted in production of a truncated protein retaining all three DNA-binding domains. SATB2 nuclear mobility was mutation-dependent; p.Arg389Cys in CUT1 increased mobility and both p.Gly515Ser in CUT2 and p.Gln566Lys between CUT2 and HOX reduced mobility. The clinical features in individuals with missense variants were indistinguishable from those with loss of function. Conclusion: SATB2 haploinsufficiency is a common cause of syndromic intellectual disability. When mutant SATB2 protein is produced, the protein appears functionally inactive with a disrupted pattern of chromatin or matrix association. Genet Med advance online publication 2 February 2017. Copyright © American College of Medical Genetics and Genomics.

Comparison between the effect of bupivacaine-pethidine and bupivacaine-ketamine as preemptive in bilateral infraorbital nerve block on postoperative pain relief in infants undergoing cleft lip repair, a controlled study

Author(s): Hajigholam-Saryazdi H.; Shafa A.; Nakhodaie F.
Source: Journal of Isfahan Medical School; Aug 2017; vol. 35 (no. 433); p. 648-654
Publication Type(s): Article
Abstract: Background: The aim of this study was to compare the effect of pethidine and ketamine, when added to bupivacaine, in infraorbital nerve block on postoperative pain relief in cleft lip repair surgery in infants. Methods: In this double-blind clinical trial study, sixty candidates of cleft lip repair surgery were randomly allocated in three groups: bupivacaine + ketamine (a), bupivacaine + pethidine (b), and bupivacaine (c). Hemodynamic parameters and pain score were measured and compared among the three groups. Findings: Mean pain score, heart rate, and mean arterial blood pressure were significantly higher in group c than the two other groups (P < 0.05). Conclusion: Based on the results of the present study, using ketamine or pethidine can reduce severity of pain in infraorbital nerve block with no complication. There was no difference between ketamine and pethidine, when added to bupivacaine, on postoperative pain relief. Copyright © 2017, Isfahan University of Medical Sciences (IUMS). All rights reserved.
Morphological evaluation of clefts of the lip, palate, or both in dogs

Author(s): Peralta S.; Fiani N.; Kan-Rohrer K.H.; Verstraete F.J.M.

Source: American Journal of Veterinary Research; Aug 2017; vol. 78 (no. 8); p. 926-933

Publication Type(s): Article

Abstract: OBJECTIVE To systematically characterize the morphology of cleft lip, cleft palate, and cleft lip and palate in dogs. ANIMALS 32 client-owned dogs with clefts of the lip (n = 5), palate (23), or both (4) that had undergone a CT or cone-beam CT scan of the head prior to any surgical procedures involving the oral cavity or face. PROCEDURES Dog signalment and skull type were recorded. The anatomic form of each defect was characterized by use of a widely used human oral-cleft classification system on the basis of CT findings and clinical images. Other defect morphological features, including shape, relative size, facial symmetry, and vomer involvement, were also recorded. RESULTS 9 anatomic forms of cleft were identified. Two anatomic forms were identified in the 23 dogs with cleft palate, in which differences in defect shape and size as well as vomer abnormalities were also evident. Seven anatomic forms were observed in 9 dogs with cleft lip or cleft lip and palate, and most of these dogs had incisive bone abnormalities and facial asymmetry. CONCLUSIONS AND CLINICAL RELEVANCE The morphological features of congenitally acquired cleft lip, cleft palate, and cleft lip and palate were complex and varied among dogs. The features identified here may be useful for surgical planning, developing of clinical coding schemes, or informing genetic, embryological, or clinical research into birth defects in dogs and other species. Copyright © 2017, American Veterinary Medical Association. All rights reserved.

Effect of dexmedetomidine combined with sufentanil on preventing emergence agitation in children receiving sevoflurane anesthesia for cleft palate repair surgery

Author(s): Luo K.; Xu J.-M.; Cao L.; Gao J.

Source: Experimental and Therapeutic Medicine; Aug 2017; vol. 14 (no. 2); p. 1775-1782

Publication Type(s): Article

Abstract: The aim of the present study was to observe whether dexmedetomidine (DEX) combined with sufentanil decreased emergence agitation (EA) in children receiving sevoflurane anesthesia for cleft palate repair surgery. Children undergoing elective cleft palate repair surgery were randomly allocated into the DEX + sufentanil group (group DS; n=50) and the normal saline + fentanyl group (group SF; n=50). Patients in group DS were treated with 0.5 micro g/kg DEX prior to induction of anesthesia, whereas patients in group SF received an equal volume of normal saline. Sufentanil (0.2 micro g/kg) was administered to induce anesthesia, and 30 min before the end of surgery for patients in group DS. Fentanyl (2 micro g/kg) was administered at the same time point for patients in group SF. Mean arterial pressure (MAP), heart rate (HR), duration of surgery and anesthesia, and the dosage of remifentanil were assessed. EA score, Pediatric Anesthesia Emergence Delirium (PAED) score and the Children and Infants Postoperative Pain Scale (CHIPPS) score were documented every 15 min in the post-anesthesia care unit (PACU). The number of cases requiring fentanyl (1 micro g/kg) and the recovery profile data were analyzed. Compared with group DS (Copyright © 2017, Spandidos Publications. All rights reserved.

Technical standardization of laparoscopic repair of Morgagni diaphragmatic hernia in children: results of a multicentric survey on 43 patients

Author(s): Esposito C.; Escolino M.; Settimi A.; Cerulo M.; Varlet F.; Saxena A.; Irtan S.; Philippe P.

Source: Surgical Endoscopy and Other Interventional Techniques; Aug 2017; vol. 31 (no. 8); p. 3320-3325
Publication Type(s): Article

Abstract: Background: This study aimed to standardize the surgical correction technique of congenital Morgagni diaphragmatic hernia (CMDH), analyzing the results of an international multicentric survey. Methods: The medical records of 43 patients (29 boys, 14 girls) who underwent laparoscopic repair of CMDH in 8 pediatric surgery units in a 5-year period were retrospectively reviewed. Their average age was 3.3 years. Ten patients (23.2%) presented associated malformations: 9 Down syndrome (20.9%) and 1 palate cleft (2.3%). Thirty-five patients (81.4%) were asymptomatic, whereas 8 patients (18.6%) presented symptoms such as respiratory distress, cough or abdominal pain. As for preoperative work-up, all patients received a chest X-ray (100%), 15/43 (34.8%) a CT scan, 8/43 (18.6%) a barium enema and 4/43 (9.3%) a US. Results: No conversion to open surgery was reported. Average operative time was 61.2 min (range 45-110 min). In 38/43 (88.3%) patients, a trans-parietal stitch was positioned in order to reduce the tension during the repair. In 14/43 cases (32.5%), the sac was resected; in only 1/43 case (2.3%) a dual mesh of goretex was adopted to reinforce the closure. Average hospital stay was 2.8 days. The average follow-up was 4.2 years, and it consisted in annual clinical controls and chest X-ray. We recorded 2 complications (4.6%): one small pleural opening that required no drain and one recurrence (2.3%), re-operated in laparoscopy, with no further recurrence. Conclusions: To the best of our knowledge, this is the largest series published in the literature on this topic. Laparoscopic CMDH repair is well standardized: The full-thickness anterior abdominal wall repair using non-resorbable suture with interrupted stitches is the technique of choice. Postoperative outcome was excellent. Recurrence rate was very low, about 2% in our series. We believe that children with CMDH should be always treated in laparoscopy following the technical details reported in this paper.

A Comprehensive Study of Palate Development in Miniature Pig

Author(s): Sun L.; Wang J.; Liu H.; Fan Z.; Wang S.; Du J.

Source: Anatomical Record; Aug 2017; vol. 300 (no. 8); p. 1409-1419

Publication Type(s): Article

Abstract: Palate development is an important morphogenetic event in facial development, including the fusion of the lateral and medial nasal portions of the frontonasal process and maxilla. Derailments of any of these events may result in cleft palate, the most frequent congenital craniofacial abnormality. Recent research has shown that the microanatomy of the miniature pig oral maxillofacial region is quite similar to that of humans, and the use of miniature pigs as a large animal model for dental and orofacial research is increasing. Little information is available, however, about the development of the miniature pig palate. Here, using histological and ultrastructural methods, we describe the developmental stages of the palate in miniature pigs. Sections from E26, E30, E35, E40, E45, and E50 embryos were stained with hematoxylin-eosin, and selected specimens were also processed for electron microscopy. The development of the miniature pig palate can be divided into four stages: growth of the bilateral palatal shelves alongside the tongue at E30; elevation of the horizontal position above the tongue at E35; establishment of bilateral shelf contact at the midline from E35-50; and a final fusion step at E50, similar to the mouse and human. The histological characteristics of the miniature pig palate at different developmental stages were synchronously verified at the ultrastructural level. Our study provides a piece of first-hand data regarding palate morphological organogenesis in the miniature pig and a foundation for further research with this model to explore mechanisms of cleft palate development. Anat Rec, 300:1409-1419, 2017. © 2017 Wiley Periodicals, Inc.

An anatomical subunit-based outcome assessment scale for bilateral cleft lip and palate
Author(s): Bonanthaya K.; Shetty P.N.; Rao D.D.; Bitra S.; Pabari M.; Fudalej P.S.; Rachwalski M.

Source: International Journal of Oral and Maxillofacial Surgery; Aug 2017; vol. 46 (no. 8); p. 988-992

Publication Type(s): Article

Abstract: As there is currently no internationally accepted outcome measurement tool available for complete bilateral cleft lip and palate (CBCLP), the goal of this prospective study was to develop a numerical evaluation scale that allows reliable scoring of this cleft deformity. Our cohort comprised 121 Indian subjects with CBCLP who underwent surgical repair (mean age at time of surgery 6.53 months) using a modified Millard technique. A panel of three professionals evaluated each subject’s outcome of bilateral cleft lip repair 6 months postoperatively on two-dimensional (2D) full-face photographs in the frontal view and worm’s eye view. A simple two-point rating system was applied to separately analyse a total of 12 components of lip, nose, and scar. The results and mean scores for the analysed anatomical areas were 2.2 +/- 1.01 (max = 3) for nose, 5.4 +/- 1.54 (max = 8) for lip, and 1.9 +/- 1.3 (max = 3) for scar, with a total score 7.7 +/- 2.21 (max = 12) indicating a good surgical outcome. The inter-examiner ICC for nose, lip, scar, and total score was calculated at 0.836, 0.889, 0.723, and 0.927 respectively and indicated a strong level of repeatability and reliability that was highly significant (P Copyright © 2017 International Association of Oral and Maxillofacial Surgeons
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