

ORAL SURGERY CARE



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Dear Colleague,

Happy Spring! I enjoyed seeing so many of you at the Bicon Implant Restorative Course. Dr. Speratti did a tremendous job with his presentation and the St. Paul Hotel did their usual superb job hosting the event.

Please enjoy our spring newsletter. We wish to share with you some of the latest developments in oral surgery and implant dentistry, as well as open communication with your office.

Remember that the Minnesota State Board of Dentistry allows hour-for-hour credit (elective category) for self-study activities such as literature review. You simply need to document the date and amount of time spent to receive the appropriate credit.



Oral Surgery Care

We appreciate the trust you place in us by allowing us to participate in the care of your patients.

Regards,

Dr. Brent L. Florine

Amoxicillin Administrations and its Influence on Bone Repair Around Osseointegrated Implants

Giro G, Witek L, et al.
J Oral Maxillofac Surg. 2014 Feb;72(2):305-310

The objective of this study was to evaluate the influence of 4 different amoxicillin administration protocols on osseointegration of dental implants. Thirty-five Wistar rats received an implant in the right tibia and were divided into 5 groups (n = 7): the control group (G1), a group that received a single dose of amoxicillin suspension (40 mg/kg) hour before surgery (G2), a group that received amoxicillin suspension 1 hour before surgery and a 10-mg/kg dose every 12 hours for 3 days (G3), a group that received amoxicillin suspension 1 hour before surgery and a 10-mg/kg dose every 12 hours for 5 days (G4), and a group that received amoxicillin suspension 1 hour before surgery and a 10-mg/kg dose every 12

hours for 7 days (G5). The animals were sacrificed by anesthesia overdose 28 days after implant placement. The samples were retrieved for bone-to-implant contact (BIC) and bone area fraction occupancy (BAFO) analyses.

BIC analysis indicated 3 different statistical groups: G1 plus G2, G3, and G4 plus G5. There was no statistical difference between G1 and G2 or between G4 and G5. G3 presented lower values, with statistical difference for G1 plus G2 and G4 plus G5. Also, a statistical difference was found between G1 plus G2 and G4 plus G5. For BAFO evaluation, no statistical difference was found for the experimental groups. *The results of this study suggest that prolonged use of amoxicillin might have a negative effect on bone formation around implants.*

Outcomes of Implants Placed with Three Different Flapless Surgical Procedures: A Systematic Review

Voulgarakis A, Strub JR, et al.
Int J Oral Maxillofac Surg. 2013 Nov 27 5027-35(13)

The purpose of this systematic review was to evaluate the outcomes of flapless surgery for implants placed using either free-hand or guided (with or without 3D navigation) surgical methods. Literature searches were conducted to collect information on

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dental and oral and maxillofacial surgery training at Louisiana State University and Charity Hospital in New Orleans, and the University of Minnesota Hospitals and Clinics. He is certified as a Diplomate of the American Board of Oral and Maxillofacial Surgery and has practiced oral surgery in Eagan since 1987.

Outcomes of Implants...continued

survival rate, marginal bone loss, and complications of implants placed with such surgeries. Twenty-three clinical studies with a minimum of 1-year follow-up time were finally selected and reviewed. Free-hand flapless surgery demonstrated survival rates between 98.3% and 100% and mean marginal bone loss between 0.09 and 1.40 mm at 1-4 years after implant insertion. Flapless guided surgery without 3D navigation showed survival rates between 91% and 100% and mean marginal bone loss of 0.89mm after an observation period of 2-10 years. The survival rates and mean marginal bone loss for implants placed with 3D guided flapless surgery were 89-100% and 0.55-2.6mm, respectively, at 1-5 years after implant insertion.

In 17 studies, surgical and technical complications such as bone perforation, fracture of the surgical guide, and fracture of the provisional prosthesis were reported. However, none of the identified methods has demonstrated advantages over the others. Further studies are needed to confirm the predictability and effectiveness of 3D navigation techniques.

Is it Time to Incorporate 'Depth of Infiltration' in the T Staging of Oral Tongue and Floor of Mouth Cancer?

Piazza C, Montalto N, et al.
Curr Opin Otolaryngol Head Neck Surg. 2014 Feb 5

The purpose of this study was to summarize recent acquisitions in three-dimensional tongue and floor of mouth anatomy that can help in better evaluation of the pathways of cancer progression within these oral subsites, thus giving some hints for refining of the current TNM staging system. The Visual Human Project is an initiative aimed at establishing a three-dimensional dataset of anatomy of two cadavers made available free to the scientific community. Visual Human data have been analyzed by specific software thus improving three-dimensional understanding of the tongue myostructure. It is already known that there is limited prognostic utility in using the two-dimensional surface diameter alone as criterion for T1-T3 definition. Recently, also the T4a categorization for the infiltration of 'deep' or extrinsic tongue muscles has been criticized. This is largely because the descriptor 'deep' does not take into account the fact that considerable portions of these muscles lie in a very superficial plane. Different prognosticators have been proposed for inclusion into the TNM staging system of oral cancer but 'depth of tumor infiltration' seems to be the most robust, universally recognized, and reproducible in the preoperative, intraoperative, and postoperative settings.

Oral tongue and floor of mouth cancer needs to be classified according to a revised TNM staging system in which 'depth of infiltration' should be taken into account. An 'ideal cut off' for distinguishing 'low' (T1-T2) from 'high-risk' (T3-T4) categories has been proposed based on the literature review, but needs retrospective as well as large prospective trials before its validation.

Efficacy of Plasma-Rich Growth Factor in the Healing of Postextraction Sockets in Patients Affected by Insulin-Dependent Diabetes Mellitus

Mozzati M, Gallesio G, et al.
J Oral Maxillofac Surg. 2013 Oct 30

The purpose of this study was to evaluate the efficacy of plasma-rich growth factor (PRGF) in improving socket healing after tooth extraction in diabetic patients. This was a split-mouth study in which each patient also served as the control: the study socket was treated with PRGF, whereas the control socket underwent natural healing. The outcome variables were the Healing Index, residual socket volume, visual analog scale score, postsurgical complications, and outcome of a patient questionnaire. The investigation considered the impact of hyperglycemia, glycosylated hemoglobin, End Organ Disease Score, and smoking habits. Follow-up included 4 postextraction checkups over a 21-day period. Pairs of correlated continuous variables were analyzed with the Wilcoxon test, independent continuous variables with the Mann-Whitney test, and categorical variables with the χ^2 test or Fisher test.

From January 2012 to December 2012, 34 patients affected by insulin-dependent diabetes mellitus underwent contemporary bilateral extractions of homologous teeth. The treatment-versus-control postoperative comparison showed that PRGF resulted in significantly smaller residual socket volumes and better Healing Indices from days 3 to 14. The patients' questionnaire outcomes were unanimously in favor of PRGF treatment. The small sample of patients with glycemia values of at least 240 mg/dL showed worse Healing Index and minor socket decreases. *PRGF application after extraction improved the healing process in diabetic patients by accelerating socket closure (epithelialization) and tissue maturation, proving the association between PRGF use and improved wound healing in diabetic patients.*

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