Oral Surgery Care

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Summer Greetings!

As we head into the meat of the summer, kick back and enjoy our quarterly review of recent oral surgery and implant literature.

Our first article addresses the issue of dental extraction in patients on antiplatelet therapy. It corroborates current thinking that antiplatelet therapy is usually not a contraindication for tooth extraction because despite the risk involved, the risk of discontinuing antiplatelet therapy is generally higher. This is case specific, but applies in most instances to other anticoagulation therapies as well.

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Thank you for including us in your patient care team. We truly appreciate your referrals and take seriously the trust you place in us.

Best Regards,

Dr. Brent Florine

Risk of Postoperative Bleeding after Dental Extraction in Patients on Antiplatelet Therapy

Jumana AlAgil, Ziyad AlDaamah, et al.
Oral Surg Oral Med Oral Pathol Oral Radiol 2024 Mar;137(3):224-242

The purpose of this study was to determine the risk of bleeding after minor extraction in patients on different antiplatelet therapy (APT) regimens. A search was conducted using PubMed and Google Scholar. Thirty-five papers were included in the systematic review, of which 23 papers provided the requisite information for meta-analysis. Subgroups were created based on the controls, as follows: (1) no control, (2) healthy control, and (3) interrupted APT control. In a meta-analysis, the studies were further subdivided into immediate and delayed bleeding.

No immediate or delayed bleeding risk was found in patients treated with aspirin vs healthy controls. A higher immediate bleeding was recorded for patients on single nonaspirin APT vs those in the healthy population. A high risk of bleeding was recorded in patients receiving dual APT compared with healthy controls for immediate and delayed bleeding. Dual APT continuation showed a higher risk of immediate bleeding than interrupted APT, but the difference was insignificant. *The authors concluded that dental extraction can be performed safely in patients on aspirin monotherapy. In contrast, patients receiving dual APT should be considered at risk for immediate and continued bleeding.*

Clinical Outcomes of Maxillary Sinus Floor Perforation by Dental Implants and Sinus Membrane Perforation during Sinus Augmentation

Yousef Sala, Hans Lu, et al.
J Clin Med 2024 Feb 22;13(5):1253

The purpose of the present systematic review was to investigate the clinical outcomes after the perforation of the maxillary sinus by dental implants, or after maxillary sinus membrane perforation during sinus lift procedure. Twenty-nine publications were included. Failure rates of implants in cases where perforation of sinus floor had happened (11 studies) was generally low, and only one case of transient sinusitis was reported. The estimated failure rate of these implants was 2.1%. There

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Dr. Brent Florine received his undergrad degree from the University of Minnesota College of Liberal Arts and attended the University of Minnesota School of Dentistry. He received postgraduate 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.

Clinical Outcomes ...*continued*

were 1817 implants (73 failures) placed in augmented sinuses in which the sinus membrane was perforated and 5043 implants (274 failures) placed in sinuses with no perforated membrane, from 18 studies. The odds of implant failure difference between the groups were not significant. log OR of implant failure between perforated and non-perforated membrane groups did not significantly change with the follow-up time. *In conclusion, implant failure rate is generally low either for implants penetrating in the floor of the maxillary sinus or implants placed in augmented sinuses in which the sinus membrane was perforated. The prevalence of postoperative infection/sinusitis is low, and it may depend either on the dimensions of the perforation or on the anatomical predisposition.*

An Overview of the Digital Occlusion Technologies: Intraoral Scanners, Jaw Tracking Systems, and Computerized Occlusal Analysis Devices

J Esthet Restor Dent 2023 Jul;35(5):735-744
Marta Revilla-Leon, Den Kois, et al.

Within the development of digital technologies, dental professionals attempt to integrate virtual diagnostic articulated casts obtained by using intraoral scanners (IOSs), the mandibular motion of the patient recorded by using an optical jaw tracking system, and the information provided by computerized occlusal analysis systems. This article describes the various digital technologies available for obtaining the digital occlusion of a patient and outlines its challenges and limitations. The factors that influence the accuracy of the maxillomandibular relationship of diagnostic casts obtained by using IOSs are reviewed, as well as the occurrence of occlusal collisions or mesh interpenetrations.

Different jaw tracking systems with varying digital technologies including ultrasonic systems, photometric devices, and artificial intelligence algorithms are reviewed. Computerized occlusal analysis systems for detecting occlusal contacts in a time sequential manner with the pressure distribution on the occlusal surfaces are also reviewed. Digital technologies provide powerful diagnostic and design tools for dental care. However, the accuracy of these digital technologies for acquiring and analyzing the static and dynamic occlusion need to be further analyzed. *The authors conclude that efficiently implementing digital technologies into dental practice requires an understanding of the limitations and state of current development of the digital acquisition methods for digitizing the static and dynamic occlusion of a patient by using IOSs, digital jaw trackers, and computerized occlusal analysis devices.*

Comparison of Calcium Sulfate and Tricalcium Phosphate in Bone Grafting after Sinus Lifting for Dental Implantation

Mohey Amam, Anas Abdo, et al.
Dent Med Probl 2023 Apr-Jun;60(2):239-246

Maxillary sinus grafting is considered the most common surgical technique to secure a sufficient bone height for placing dental implants. It is carried out either by making a bony window in the lateral wall of the maxillary sinus (the external procedure) or through the alveolar entrance technique by using alveolar osteotomes (the internal procedure), depending on the quality and quantity of the remaining bone. The purpose of the present study was to compare radiologically the amount of bone gain (an increase in bone dimensions) and bone reduction (the loss of the graft volume) obtained by using tricalcium phosphate (TCP) and calcium sulfate (CS) grafts mixed with advanced platelet-rich fibrin (A-PRF).

Nine patients (18 maxillary sinuses) participated in this study, all of whom had bilateral edentulism involving the premolar/molar areas and a bone height of 0.5-5 mm between the sinus floor and the alveolar ridge. Two biomaterials were used in the sinus augmentation procedures. Each patient underwent a bilateral maxillary sinus lift with the use of different bone graft materials - with CS mixed with A-PRF used on one side, and TCP mixed with A-PRF on the other side. The grafting site was selected randomly. Afterward, bone gain and bone reduction were evaluated at the grafting site by using cone-beam computed tomography (CBCT).

The mean bone gain on the side treated with TCP mixed with A-PRF was 7.532 mm, and on the side treated with CS mixed with A-PRF side it was 7.961 mm. *The comparison of bone gain and bone reduction between the 2 groups showed no statistically significant differences at a 6-month follow-up. Using CS or TCP mixed with A-PRF was beneficial and safe in the two-stage maxillary sinus lifting procedure. A sufficient amount of bone was obtained for dental implantation.*

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