WESTSIDEOMS
ORAL SURGERY & DENTAL IMPLANT CENTER

WestsideOMS Oral Surgery & Dental Implant Center

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Spring 2017 ~ A Quarterly Update

Dear Colleague:

Each year we continue to see growth and development in our practice accompanied by an increase in treatment success. Through this quarterly 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.

If we can provide any additional information, or if you would like to see an article on a particular topic in our next issue, please do not hesitate to call. We appreciate the trust you place in us by allowing us to participate in the care of your patients.

Regards,

Dr. Rupi Dhadli

Short Dental Implants (6 mm) Versus Long Dental Implants (11-15 mm) in Combination with Sinus Floor Elevation Procedures

Pohl V, Thoma DS, et al.
J Clin Periodontol. 2017 Jan 12

The purpose of this study was to test whether or not the use of short dental implants (6 mm) results in an implant survival rate similar to that with longer implants (11-15 mm) in combination with sinus grafting. This multi-center study enrolled 101 patients with partial edentulism in the posterior maxilla and a remaining bone height of 5-7 mm. Included patients were randomly assigned to receive short implants (6 mm; GS / group short) or long implants (11-15 mm) simultaneously with sinus grafting (GG / group graft). Six months after implant placement (IP), implants were loaded with single crowns (PR) and patients were re-examined yearly thereafter. Assessed outcomes included: implant survival, marginal bone level changes (MBL), probing pocket depth (PPD), bleeding on probing (BoP) and plaque accumulation (PCR) during 3 years of loading as well as recording of any adverse effects. In addition to descriptive statistics, statistical analysis has been performed for the two treatment modalities using a non-parametric approach.

In 101 patients, 137 implants were placed. At the 3-year follow-up (FU-3), 94 patients with 129 implants were re-examined. The implant survival rate was 100% in both groups. MBL at FU-3 was 0.45 mm (GG) and 0.44 mm (GS) ($p>.05$). A statistically significant loss of MBL was observed in both GG (-0.43mm) and GS (-0.44mm) from IP to FU-3, and from PR to FU-3 in GG (-0.25mm) but not in GS (-0.1mm). PCR and BoP at FU-3 did not show any difference between the groups but for PPD. *The authors concluded that implants with a length of 6 mm as well as longer implants in combination with a lateral sinus lift may be considered as a treatment option provided a residual ridge height of 5-7 mm in the atrophied posterior maxilla is present.*

Impact of Second Stage Surgery on Bone Remodeling Around New Hybrid Titanium Implants

Traini T, Berardini M, et al.
Implant Dent. 2017 Jan 4

The present prospective study aimed to more precisely identify the time points of bone changes around hybrid titanium implants up to 30 months of follow-up. Twelve hybrid T3 implants (Biomet 3i) were placed in 9 healthy patients

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Dr. Dhadli is dual degreed Oral and Maxillofacial Surgeons both a physician and dental surgeon. Dr. Dhadli attended Dental School and Medical School at Case Western Reserve University. She furthered her training and education through a 5 year intensive residency program in Oral and Maxillofacial Surgery and Anesthesia at University Hospitals of Cleveland, OH, Mt. Sinai Medical Center, Rainbow Babies and Children Hospital, and Metrohealth Medical Center in Cleveland, OH.

Rupi Dhadli, DDS, MD

Second Stage Surgery ...*continued*

with the 2-stage surgical approach. Standardized digital Rx were taken at implant insertion (T0); healing-abutment connection after 3.1 ± 0.2 weeks (TX); loading stage after 7.5 ± 0.6 weeks (T1); after 12 months (T2); and after 30 months (T3) of functional loading. The marginal bone loss was digitally measured.

The mean marginal bone loss was 0.76 ± 0.37 mm after 30 months. More than 60% (0.42 ± 0.29 mm) of the bone loss took place at healing-abutment connection (TX-T1). No statistically significant bone loss was found between T1-T2 and T2-T3, after 12 and 30 months, respectively. Approximately 40% of bone loss (0.34 mm) was noted between T1 and T3 ($P < 0.05$), which corresponds to the loading period. The implant-oral environment connection represents a critical step point in crestal bone loss. *The amount of marginal bone loss, measured after 30 months of loading (T1-T3), was much less than that reported in the literature, showing that correct loading has a minor impact on the periimplant bone remodeling as compared to surgical implant reopening.*

Influence of Implant Shape (Tapered vs Cylindrical) on the Survival of Dental Implants Placed in the Posterior Maxilla

Alshehri M, Alshehri F. et al.
Implant Dent. 2016 Dec; 25(6):855-860

The purpose of this review was to assess the effect of implant shape (tapered vs cylindrical) on the survival of dental implants placed in the posterior maxilla. Databases were searched from 1977 up to and including February 2015 using various key words. Only original clinical studies were included. Experimental studies, letters to the editor, review articles, case reports, and unpublished literature were excluded. The pattern of the present review was customized to mainly summarize the relevant information.

Five studies were included. The number of patients included ranged between 4 and 29 participants. In total, 7 to 72 implants were placed in the posterior maxilla. Tapered and cylindrical shaped implants were placed in 1 and 1 study, respectively. In 1 study, both 41 tapered and cylindrical implant were placed. In all studies, rough-surfaced and threaded implants were used. Three studies reported the diameter and lengths of implants placed, which ranged between 3.75 to 4 mm and 10 to 20 mm, respectively. The mean follow-up period and survival rate of implants ranged between 19 and 96 months and 84.2% to 100%, respectively. In 1 study, implants were placed subcrestally in the posterior maxilla. Guided bone regeneration was performed in none of the studies. In all studies, participants were nonsmokers and were systemically healthy. *There is no influence of implant shape on the survival of implants placed in the posterior maxilla.*

The Role of Occlusion in Implant Therapy

Sheridan RA, Decker AM, et al.
Implant Dent. 2016 Dec;25 (6):829-838

Occlusal overload may cause implant biomechanical failures, marginal bone loss, or even complete loss of osseointegration. Thus, it is important for clinicians to understand the role of occlusion in implant long-term stability. This systematic review updates the understanding of occlusion on dental implants, the impact on the surrounding peri-implant tissues, and the effects of occlusal overload on implants. Additionally, recommendations of occlusal scheme for implant prostheses and designs were formulated. Two reviewers completed a literature search using the PubMed database and a manual search of relevant journals. Relevant articles from January 1950 to September 20, 2015 published in the English language were considered.

Recommendations for implant occlusion are lacking in the literature. Despite this, implant occlusion should be carefully addressed. Recommendations for occlusal schemes for single implants or fixed partial denture supported by implants include a mutually protected occlusion with anterior guidance and evenly distributed contacts with wide freedom in centric relation. *Suggestions to reduce occlusal overload include reducing cantilevers, increasing the number of implants, increasing contact points, monitoring for parafunctional habits, narrowing the occlusal table, decreasing cuspal inclines, and using progressive loading in patients with poor bone quality. Protecting the implant and surrounding peri-implant bone requires an understanding of how occlusion plays a role in influencing long-term implant stability.*

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