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Summer 2013 ~ A Quarterly Update

Dear Colleague:

There are many changes and advancements in dentistry taking place all of the time. Through this quarterly newsletter, we wish to share with you some of the latest developments in oral surgery, as well as open communication with your office. One thing that remains constant is the need for wisdom tooth removal. Summer is here! Don't forget to evaluate and refer your patients for removal of their wisdom teeth... school will be starting before we know it. We hope you and your family have a safe and wonderful summer break.

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. Steven D. Sherry
Dr. John D. Wallace

type of implant surface, antibiotics used in conjunction with surgery, bisphosphonate use, presence of splinted restorations, anatomical location (mandible or maxilla and anterior or posterior), sex, and past periodontal disease status.

A total of 1,187 implants were identified, with mean bone loss of 0.52 mm. Overall bone loss was less than 1.5 mm in 90% of the implants studied. Bone loss was greater in women (0.61 mm vs 0.44 mm in men). There was a correlation between bone loss and patient age at the time of tooth loss, with patients below the age of 50 experiencing significantly more loss (mean loss, 0.76 mm < 50 and 0.46 mm at age > 50). Other significant differences were seen with implant surface (machined surface, 0.57 mm; roughened surface, 0.44 mm, maxilla vs mandible in molar areas (maxilla, 0.68 mm; mandible, 0.43), and platform width (regular, 0.46 mm wide, 0.83 mm. None of the other factors demonstrated significant differences. Bone loss of 1.5 mm or less was observed in 90% of the patients followed. *The authors concluded that bone loss was correlated with age, sex, implant surface, anatomical location, and platform width. There was no statistical correlation between bone loss and any other factors evaluated.*

Long-term Bone Stability Assessment Around 1,187 Immediately Placed Implants with 1- to 22-Year Follow-up

Wagenberg BD, Froum SJ, et al.
Int J Oral Maxillofac Implants. 2013 Mar-Apr;28(2):605-12

The purpose of this study was to evaluate the retention of bone around implants placed immediately following tooth extraction and used to support dental prostheses. Patients from a previous study of implants placed immediately following tooth extraction were recalled to the original practice to obtain dental radiographs, which were then used to compare bone levels after 1 to 22 years of clinical function supporting dental prostheses. All radiographs were evaluated by measuring the bone within the implant threads. Implant bone maintenance was correlated with smoking history,

Tilted Implants for the Restoration of Posterior Mandibles with Horizontal Atrophy

Pefiarrocha Diago M, Maestre Ferrin L, et al.
J Oral Maxillofac Surg. 2013 May;71(5):856-64

Horizontal atrophy in the posterior mandible presents serious limitations on conventional implant placement. The purpose of this study was to evaluate the use of tilted implants angled in a buccolingual direction for restoring atrophic posterior mandibular sectors. A cohort study was performed of 25 patients who had partial prostheses supported by more than 1 implant (≥ 1 tilted and 1 axial implant) to restore molar areas in the mandible. When the bone thickness was at least 5 mm, axial implants were placed; when the alveolar ridge was narrower, the implant was placed with tilted angulation.

continued on page 2

Tilted Implants ...continued

The beds for these tilted implants were prepared using a lingual approach, tipping the implant apex toward the vestibule. Twelve months after loading, bone loss was evaluated and the success rates of the tilted and axial implants were calculated.

The study included 20 women and 5 men (mean age, 54.8 yr) who received 67 implants in the posterior mandibular sectors. Thirty-nine implants were placed with a buccal angulation and 28 implants were placed vertically. Mean bone losses of 0.59 mm among the tilted implants and 0.48 mm among the axial implants were observed 1 year after loading. The success rate of the tilted implants was 94.9%, and that of the axial implants was 100%. No significant differences in success rates or in bone loss between the tilted and axial implants were found at 12 months after loading. *Twelve months after loading, tilted implants provided good results for the restoration of posterior mandibles with horizontal atrophy and no significant differences in success rates or marginal bone loss between tilted and axial implants were observed.*

The Influence of Smoking on the Survival of Dental Implants: a 5-Year Pragmatic Multicenter Retrospective Cohort Study of 1727 Patients

Cavalcanti R, Oreglia F, et al.
Eur J Oral Implantol. 2013 Spring;4 (1):39-45

The purpose of this study was to evaluate the influence of cigarette smoking on the survival of dental implants with a retrospective observational study of 5 years. A total of 1727 consecutively treated patients at four private practices were divided into non-smokers (NS group, 1178 patients) and smokers (S group; 549 patients) according to what they declared prior to implant placement. Non-smokers received 4460 implants and 2583 implant-supported prostheses, whereas smokers received 2260 implants and 1292 implant supported prostheses. Various implant systems and procedures were used. Outcome measures were prosthesis and implant survival.

Over the 5 years after loading, 159 (17%) non-smokers and 91 (13%) smokers were lost to follow-up; 20 (0.9%) prostheses could not be placed or failed in 15 non-smokers and 12 prostheses (1.2%) could not be placed or failed in 12 smokers. One hundred and twelve (2.9%) implants failed in 105 non-smokers and 107 (5.5%) implants failed in 75 smokers. Most of the implant failures (90%) occurred before implant loading. Examining the appropriate statistical analysis for early implant failures and total implant failures, taking into account the clustering of implants in patients, there were no statistically significant differences for prosthesis failures and early implant failures between the two groups. However,

when considering all implant failures up to 5 years after loading, significantly more failures (5.5%) occurred in smokers compared with non-smokers (2.9%). *Due to the retrospective nature of this study, conclusions have to be interpreted with caution. Five years after loading, smokers experienced almost twice as many implant failures compared with non-smokers. Non-statistically significant trends in favor of non-smokers were observed for early implant failures and prosthesis failures.*

A 3-year Clinical Follow-up of Implants Placed in Two Different Biomaterials Used for Sinus Augmentation

Lindgren C, Mordenfeld A, et al.
Int J Oral Maxillofac Implants. 2012 Sep-Oct;27(5):1151-62

The aims of the present study were to compare a novel biphasic calcium phosphate (BCP) with deproteinized bovine bone (DBB) for maxillary sinus floor augmentation in a split-mouth design and to perform a clinical follow-up of dental implants placed in the augmented sinuses. Partially or completely edentulous patients requiring bilateral sinus augmentation were included in the study. The patients were randomized for augmentation with BCP (test) and DBB (control) in the contralateral side. Eight months after grafting, dental implants were placed. After 3 years of graft healing, core biopsy specimens were obtained from the grafted areas for histologic and histomorphometric analyses. After 3 years of functional implant loading, implant survival/success rates and clinical indices were assessed and radiographic examination and resonance frequency analysis were performed.

Nine completely edentulous patients and two partially edentulous patients (mean age, 67 years) who required bilateral sinus augmentation were included in the study, and 62 implants were placed. The mean values for the area of newly formed bone in the retrieved specimens were 29% and 32% for BCP and DBB, respectively; the percentage of graft particles in contact with bone was 38% in the BCP group and 44% in the DBB group (no statistical significant differences between groups). *The mean values for the area of BCP particles and DBB particles were 20% and 24% respectively (difference not significant). One dental implant was lost from each group, resulting in an overall implant survival rate of 96.8% after 3 years of loading. After 3 years, a similar amount of newly formed bone was present regardless of the biomaterial used. The choice of biomaterial did not seem to influence implant survival rates.*



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