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Summer 2014 ~ 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. Steven D. Sherry*  
*Dr. John D. Wallace*

assessed after a further 3 months (6 months after receiving CCDs). The CI group was assessed 3 months after receiving IODs.

Significant improvements in satisfaction and quality of life were found in the patients 3 months after receiving CCDs. No further improvements were found in the CC group at 6 months on any of the measures. The CI group showed significant additional improvements at 3 months following IODs on the functional limitation, physical pain, psychological discomfort, physical disability, social disability, psychological disability and handicap scales of the OHIP and on 10 of the 11 scales of the Denture Satisfaction Questionnaire. *The findings show that, controlling for expectancy bias and variability in baseline levels, IODs significantly increase patient satisfaction, dental function and quality of life over and above those achieved with good quality CCDs.*

## A Comparison of Implant-retained Mandibular Overdentures and Conventional Dentures on Quality of Life in Edentulous Patients

Harris D, Höfer S, et al.  
*Clin Oral Implants Res. 2013 Jan;24(1):96-103*

The purpose of this study was to determine any difference in patient response to implant overdentures compared with conventional complete dentures alone. In a randomized, prospective, controlled study, 122 edentulous patients (Mean age 64; 39 men, 83 women) underwent baseline assessment of denture satisfaction and quality of life using the Oral Health Impact Profile-49 (OHIP-49) and a Denture Satisfaction Questionnaire. All patients were provided with new conventional complete dentures (CCDs) that they wore for 3 months, at which point they were reassessed using the same measures. Patients were randomly assigned either to continue with CCDs (CC group) or to have implant-retained overdentures (IODs) made (CI group). The CC group was

## Economic Evaluation of Single-Tooth Replacement: Dental Implant Versus Fixed Partial Denture

Kim Y, Park JY, et al.  
*Int J Oral Maxillofac Implants. 2014 May-Jun;29(3):600-7*

This study assessed the cost-effectiveness from a societal perspective of a dental implant compared with a three-unit tooth-supported fixed partial denture (FPD) for the replacement of a single tooth in 2010. A decision tree was developed to estimate cost-effectiveness over a 10-year period. The survival rates of single-tooth implants and FPDs were extracted from a previous studies. Medical costs included initial treatment costs, maintenance costs, and costs to treat complications. Patient surveys were used to obtain the costs of the initial single-tooth implant or FPD. Maintenance costs and costs to treat complications were based on surveys of seven clinical experts at dental clinics or hospitals. Transportation costs were calculated based on the number of visits for implant or FPD treatment. Patient time costs were estimated using the number of visits and time required, hourly wage, and employment rate. Future costs were discounted by 5% to convert to present values.

The results of a 10-year period model showed that a single dental implant cost US \$261 (clinic) to \$342 (hospital) more than an FPD  
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## Economic Evaluation ...continued

and had an average survival rate that was 10.4% higher. The incremental cost-effectiveness ratio was \$2,514 in a clinic and \$3,290 in a hospital for a prosthesis in situ for 10 years. The sensitivity analysis showed that initial treatment costs and survival rate influenced the cost-effectiveness. If the cost of an implant were reduced to 80% of the current cost, the implant would become the dominant intervention. *Although the level of evidence for effectiveness is low, and some aspects of single-tooth implants or FPDs, such as satisfaction, were not considered, this study will help patients requiring single-tooth replacement to choose the best treatment option.*

## Implant Treatment in Atrophic Posterior Mandibles: Vertical Regeneration with Block Bone Grafts versus Implants with 5.5-mm Intrabony Length

Peñarrocha-Oltra D, Aloy-Prósper A, et al.  
*Int J Oral Maxillofac Implants. 2014 May-Jun;29(3):659-66*

**T**he purpose of this study was to retrospectively compare the outcomes of implants placed in posterior mandibles vertically regenerated with onlay autogenous block bone grafts and short dental implants. Consecutive patients with vertical bone atrophy in edentulous mandibular posterior regions (7 to 8 mm of bone above the inferior alveolar nerve) were treated with either implants placed in regenerated bone using autologous block bone grafts (group 1) or short implants (with 5.5-mm intrabony length) in native bone (group 2) between 2005 and 2010 and followed for 12 months after loading. The procedure used was the established treatment protocol for this type of patient at an oral surgery unit at the time of surgery. All grafts were obtained using piezosurgery. The outcomes assessed were: complications related to the procedure, implant survival, implant success, and peri-implant marginal bone loss.

Thirty-seven patients were included, 20 (45 implants) in group 1 and 17 (35 implants) in group 2. In group 1, 13 implants were less than 10 mm long (2 were 7 mm and 11 were 8.5 mm), and 32 were 10 mm or longer; the diameter was 3.6 mm in 6 implants, 4.2 mm in 31, and 5.5 mm in 8. In group 2 all implants were 7 mm long; the diameter measured 4.2 mm in 14 implants and 5.5 mm in 21 implants. Complications related to the block bone grafting procedure were temporary hypoesthesia in one patient, wound dehiscence with graft exposure in three patients, and exposure of the osteosynthesis screw without bone graft exposure in one patient. After 12 months, implant survival rates were 95.6% in group 1 and 97.1 % in group 2; success rates were 91.1% and 97.1%, respectively. The average marginal bone loss was 0.7 mm

in group 1 and 0.6 mm in group 2. *When residual bone height over the mandibular canal is between 7 and 8 mm, short implants (with 5.5-mm intrabony length) might be a preferable treatment option over vertical augmentation, reducing chair time, expense, and morbidity*

## Immediate Provisionalization of Dental Implants Placed in Healed Alveolar Ridges and Extraction Sockets

Cooper LF, Reside GJ, et al.  
*Int J Oral Maxillofac Implants. 2014 May-Jun;29(3):709-17*

**T**his 5-year prospective multicenter study compared implant survival and success, peri-implant health and soft tissue responses, crestal bone level stability, and complication rates following immediate loading of single OsseoSpeed implants placed in anterior axillary healed ridges or extraction sockets. Individuals requiring anterior tooth replacement with single implants were treated and immediately provisionalized. Definitive all-ceramic crowns were placed at 12 weeks. Implant survival, bone levels, soft tissue levels, and peri-implant health were monitored for 5 years.

One hundred thirteen patients received implants in fresh sockets (55) and healed ridges (58). After 5 years, 45 and 49 patients remained for evaluation, respectively. During the first year, three implants failed in the extraction socket group (94.6% survival) and one implant failed in the healed ridge group (98.3% survival); this difference was not significant. No further implant failures were recorded. After 5 years, the interproximal crestal bone levels were located a mean of 0.43 mm and 0.38 mm from the reference points of implants in sockets and healed ridges (not a significant difference). In both groups, papillae increased over time and peri-implant mucosal zenith positions were stable from the time of definitive crown placement in sockets and healed ridges. Compared to flap surgery for implants in healed ridges, flapless surgery resulted in increased peri-implant mucosal tissue dimension (average, 0.78 mm vs 0.19 mm). After 5 years, the bone and soft tissue parameters that characterize implant success and contribute to dental implant esthetics were similar following the immediate provisionalization of implants in sockets and healed ridges. *The overall tissue responses and reported implant survival support the immediate provisionalization of dental implants in situations involving healed ridges and, under ideal circumstances, extraction sockets.*



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