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 factors that make this possible, as well as open communication with your office.

If we can provide any further information, or if you would like to see an article on a particular subject, please do not hesitate to call.

Regards,

Kirk

Immediate Loading of Immediate Mandibular Implants with a Full-Arch Fixed Prosthesis


The purpose of this study was to determine the survival of immediate dental implants with immediate loading in the partially edentulous mandible, by use of a full-arch screw-retained provisional restoration. Patients who were partially edentulous in the mandible with indications for extraction of the remaining teeth and with a minimum follow-up of 12 months after implant placement were included in the study. They were treated in chronologic order by the insertion of 6 Defcon dental implants (Impladent, Sentmenat, Spain) subjected to immediate loading (4 interforaminal and 2 posterior placements). Implants with a minimum primary stability of 60 implant stability quotient were loaded. All resin screw-retained prostheses were inserted and loaded with fully functional occlusion within 24 hours of implant placement.

Eleven patients were treated with immediate implants, although 2 patients were excluded from the study for having an implant stability quotient value below 60 in at least one of the implants after surgery and did not undergo restoration with immediate loading. Fifty-four implants were placed in 9 partially edentulous patients with immediate loading with a full-arch screw-fixed prosthesis. The patients wore this provisional prosthesis during the healing period (2 months) without complication and with a high level of comfort. The survival rate of the implants was 100% at 12 months of follow-up. The authors concluded that immediate mandibular loading with immediate full-arch implant-supported and screw-retained restorations is a viable treatment alternative, yielding a 100% success rate in this small series of patients.

Immediate Loading with Single Implant Crowns


A systematic review of studies that specifically compared immediate to conventional loading of single implant crowns was conducted and the overall treatment effect was estimated. MEDLINE, the Cochrane Controlled Trials Register, and bibliographies of relevant primary and review articles were searched. Randomized and nonrandomized controlled studies that compared immediate with conventional loading of single implant crowns were selected according to strict criteria. From the 105 articles screened, five studies with 248 implants were analyzed. Descriptive and outcome data were extracted using specially designed data extraction forms. The data were entered into MIX software for meta-analysis using a fixed effects model, relative risk, and 95% confidence interval (CI).
Results found that immediate loading of single implant crowns was associated with a significantly higher risk of implant failure. Pooling of randomized controlled trials showed similar results, although the difference was not statistically significant. Immediate nonocclusal loading was also associated with worse outcomes when compared to conventional loading. This systematic review shows that better outcomes are currently achieved using conventional loading of single implants with crowns, as opposed to immediately loaded ones, which are at a higher risk of failure. Further adequately powered clinical trials are needed. Caution with immediate loading of implants with crowns as a standard of care for single tooth replacement is recommended.

How Long do Fibre-reinforced Resin-bonded Fixed Partial Dentures Last?

Pye A.
Evid Based Dent. 2009;10(3):75

Searches were made for data using Medline and the reference lists of identified papers by two independent readers. Only papers published in English were considered and reviews, case reports, descriptive reports and in-vitro studies were excluded. Information on the design, location and the choice of material was extracted. Retainer type (inlay, surface, crown retainer), number of abutment teeth, and different span distances were recorded and, as far as possible, the survival period for each fixed partial denture (FPD) was extracted on an individual basis. Technical complications and number of failures were extracted, if reported. FPD survival was defined as the FPD remaining in situ, with or without modification, during the observation period. An overall survival curve was constructed using the Kaplan-Meier method and the possibility of performing a regression analysis on different types and locations of FPD was investigated.

Results showed that in all, 15 articles dealing with 13 sets of patients and 435 FPD were included, with observation periods that varied between 10 months and 5.7 years. Of 435 FPD, 88 failed within 5 years, with a calculated survival rate of 4.5 per year (73.4%). Converted survival rates at 2 years follow-up showed substantial heterogeneity between studies. It was not possible to build a reliable regression model that indicated risk factors. The technical problems most commonly described were fracture of the FPD and delamination of the veneering composite. The authors concluded that the majority of the studies showed a survival rate of approx. 72% after 2-5 years. This study highlights the need for good-quality randomized clinical trials (RCT).

Long Term Bone Level Stability on Short Implants

Caterina Venuleo, Sung-Kiang Chuang, et al.
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Placement of short endosseous implants represents a valid treatment in the setting of limited alveolar bone height. This study’s objectives were: to estimate the 5 year clinical survival of BiconTM short implant and to evaluate radiographic bone level changes around 6 x 5.7mm implants in comparison with longer non-6 x 5.7mm implants. The study group was composed of patients who had at least one 6 x 5.7mm implant placed for 5 years, at least one non-6 x 5.7mm implant, and who were willing to return to the dental office for radiographic evaluation. A total of 62 implants, 28 6 x 5.7mm (test group=short implant) and 34 non-6 x 5.7mm (control group=non short implant), were placed in 20 patients (12 males and 8 females). Mean length of non-6 x 5.7mm implants was 9.7 mm, ranging from 8mm to 14mm, while mean diameter was 4.30 mm (range: 3.5 to 5 mm). Bone loss, defined as the vertical difference in crestal bone level measurements, from the baseline (day of implant placement) to the 5 years follow-up, was digitally determined on periapical radiographs. Generalized linear mixed models were used for the statistical analysis.

Results showed that five years survival rates for test and control groups were 100.0% and 96.8% respectively, but this difference was marginally not statistically significant. There was no significant difference between the two groups with regard to mean changes of radiographic bone levels. The authors concluded that short implants with large diameter (6 x 5.7mm) have a long-term (>5-years) survival rate and crestal bone level maintenance similar to that observed for non-6 x 5.7mm implants. The results of this radiographic study support the hypothesis that 6 x 5.7mm implants can be successfully used in edentulous maxillary and mandibular areas with limited bone height.