

# Bridge design, part thirteen: full arch bridgework on immediately placed and loaded implants using the 'All-in-One' bridge - a new method

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**In the thirteenth part of his series, Paul Tipton continues to look at bridgework in relation to implants**

The transitional removable prosthesis is a frequent barrier to patient acceptance of implant treatment. Whether it is a partial or a complete denture, patients often resist the idea of wearing a removable prosthesis as the concept of such a prosthesis may be psychologically traumatic to many patients.

Patients undergoing implant treatment often wear either a removable prosthesis or no prosthesis at all when abutment support is lacking in the non-aesthetic zone. While most edentulous patients are more tolerant of additional months of denture therapy, patients who have been rendered recently edentulous may experience difficulty adapting. Postoperative changes during the healing period can lead to discomfort and often necessitate frequent denture relines which the newly edentulous patient cannot tolerate.

## ORIGINAL PROTOCOL

The abundance of longitudinal studies, supporting the utilisation of dental implants for the completely and partially edentulous patient, exemplifies the successful results obtained by the application of a standardised surgical and prosthodontic protocol. One disadvantage of such a protocol is that, following the placement of the implant in bone, a healing period of at least three to four months for the mandible and four

to six months for the maxilla must take place prior to the initiation of the prosthodontic rehabilitation and the placement of the final prosthesis (Adel, 1981). During this time the implant has been covered up under the soft tissue. This technique has been termed the two-stage approach.

## ONE STAGE APPROACH

Several studies have demonstrated that good clinical results may be achieved with a

one-stage approach. Using a split-mouth technique, Ericsson (1994) placed one and two-stage Branemark implants into completely edentulous mandibles and reported no short-term loss of implants for either method of placement. Bernard (1995) placed two one-stage implants each in the mandibles of five patients for tissue bar-supported dentures, with similar results. Busser (1997) showed over a 90% success rate involving over 2,000 non submerged implants over an eight-year period.

As these studies indicate, one-stage implants osseointegrate predictably and function well when loaded in completely edentulous mandibular reconstructions. One-stage implant procedures also offer the advantages of fewer patient surgeries, less time between abutment placement and final prosthetic restoration, and, potentially reduced patient expense (Becker, 1997).

## IMMEDIATE LOADING

Schnitman et al (1997) described a technique that avoids the need for a removable denture during this interim phase of therapy.

The immediate loading protocol they discussed allows the patient to wear an interim fixed partial denture without compromising the long-term success of the overall reconstruction. He reported ten year follow up results of which all ten prostheses supported by implants placed in immediate function at the time of implant placement were successful. Of the 28 implants placed in immediate function, four eventually failed including three prior to six months, and one at 18 months post-implantation. All failures of immediately loaded implants were distal to the incisor regions.

According to Schnitman, the failures were probably the result of inadequate implant length using 7mm for the posterior implants and poor bone quality in the posterior mandible. The ten-year life table analysis of survival for immediately loaded implants was 84.7%.

Salama (1995) has also reported cases in which titanium root-form implants were immediately loaded and success-

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