

POSTER

Brånemark Novum® immediate loading Rehabilitation of edentulous Mandibles: 16-year retrospective Study

Area: Implant Supported Prosthesis

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Presenter:

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Objective:

Numerous studies have demonstrated the high predictability of immediate loading rehabilitations over the medium term. However, there is a lack of long-term studies.

Proposed in the early 2000s, the Brånemark Novum (Nobel Biocare AB, Goteborg, Sweden) was the first codified immediate loading protocol to rehabilitate edentulous mandibles. It consisted in the placement of three implants in the interforaminal region with the prosthesis delivery within a day.

The aim of this retrospective study was to evaluate the clinical outcomes of edentulous jaws rehabilitated with the Brånemark Novum protocol over a 16-year period.

Materials:

Between April 2001 and November 2001, 4 patients were rehabilitated with fixed full-arch prosthesis supported by 3 immediately loaded implants following the Brånemark Novum protocol.

Cumulative implant and prosthetic survival rate (CSR), bleeding on probing (BoP), plaque index (PI), probing depth (PD), implant stability (RFA expressed through implant stability quotient ISQ) and peri-implant bone resorption were evaluated over time.

Bone resorption, RFA, PI and PD were analyzed using a linear mixed model with random intercept; whilst a negative binomial mixed model was used in the BOP evaluation. A $p < 0.05$ was considered statistically significant.

Results:

During the 16th year of follow-up, no implant failed (CSR of 100%) and the prosthetic CSR was 100%. The statistical analysis did not reveal differences in peri-implant health parameters (PI, BOP and PD) at the various healing times. RFA values remained generally stable during the entire 16-year period. After 11 years, small bone resorption was found next to distal implants (median 1 mm), while central implants showed greater bone resorption. Between the 11th and the 16th year follow-up appointment, bone level remained stable without statistically significant differences between the two time points.

One biological complication was detected in a central implant, which exhibited a crater-like bone resorption.

Conclusion:

The 16-year results highlighted that the Brånemark System Novum protocol is a predictable technique with highly successful outcomes in the long term.

This protocol had the merit of indicating the key factors for full-arch immediate loading rehabilitations, namely standardized surgical and prosthesis protocol, rigid metal framework splinting the implants, passive and screwed prosthetic structure, reduced number of implants, and occlusal material with high shock absorption capacity. Nevertheless, the rigidity of the protocol, which could be applied only in patients with specific anatomical characteristics of the lower jaw, caused the dismissal of its clinical application.