

A 10-YEAR PROSPECTIVE COHORT STUDY ON SINGLE CROWNS SUPPORTED BY 6 MM LONG IMPLANTS

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Introduction:

If one or more dental elements are missing, the use of dental implants is considered a consolidated method to guarantee a correct oral rehabilitation. The absence of ideal anatomic conditions might result in insufficient bone volume. In these circumstances, bone augmentation surgical techniques or use of short implants are often required.

Aims:

To evaluate prospectively the clinical and radiographic outcomes after ten years of early loading of 6 mm implants with a moderately rough surface supporting single crowns in the posterior regions.

Methods:

40 short (6 mm long) implants were installed in 35 consecutive patients. Early loading, after 6 weeks of healing, were performed with cemented single porcelain fuse to metal crowns. Implant survival rate, marginal bone loss, clinical crown/implant ratio and periodontal parameters (FMPS, full mouth plaque score; FMBS, full mouth bleeding score; PD, peri-implant probing depth) were analysed at various time intervals until 10 years after loading.

Results:

Two out of 40 implants were lost before loading, one implant was lost due to perimplantitis at 7 years. One patient with two implants was considered as drop out, and survival rate at long term follow up was 92.1% (n=38). A mean marginal bone loss after 10 years of function was 0.8 ± 0.7 mm. Between 5 and 10 years the bone loss was 0.2 ± 0.4 mm. The mean bone level after 10 years was located at 2.8 mm from the shoulder (at the level of the interface between the smooth implant neck and the coronal margin of rough surface). The clinical crown/implant ratio increased with time from 1.6 at the delivery of the prosthesis to 2.0 after 10 years of loading with no increase between 5 and 10 years. No technical complications were registered during the 10-year follow-up period. Patients registered mean FMPS 8% and FMBS 16% and peri-implant probing depth ≤ 4 mm.

Conclusions:

6 mm implants with a moderately rough surface supporting single crowns in the distal region maintained full function for at least 10 year with low marginal bone loss.