

LATEST IMPLANT RESEARCH

Immediate or Delayed Placement and Loading, Controlled



The impact of laser microtexturing collar designs on crestal bone level, and clinical parameters under various placement and loading protocols.

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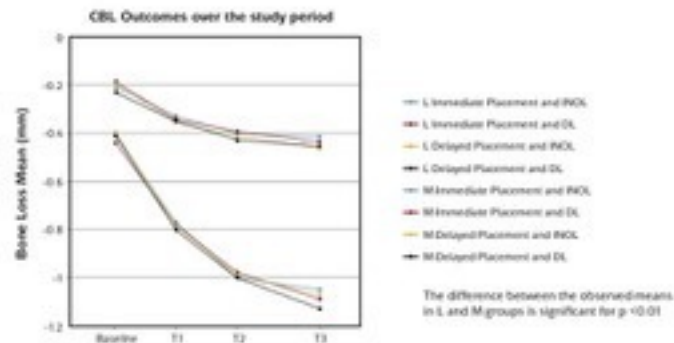


Figure 3. CBL Outcomes over the study period
(L=Laser-microtextured collar surface; M=Machined collar surface)

INTRODUCTION

A physical attachment of connective tissue fibers to the laser microtexturing (8 and 12 μ m grooves) surface placed on collar of implant, has been demonstrated using human histology. Related clinical researches has suggested that this kind of microtexturing surface may lead to a decreased amount of initial bone loss.

AIM

The aim of this retrospective study was to compare crestal bone heights and clinical parameters between implants with laser-microtextured collar and machined collar using different protocols.

MATERIALS AND METHODS

This study evaluates 300 single implants in 300 patients (155 males and 145 females; mean age: 49.3 years; range: 45 to 75 years). 160 implants with laser-microtextured collars (L) and 140 with machined collars (M) were used. Implants were grouped into the treatment categories of immediate placement, delayed placement, immediate non-occlusal loading (INOL), and delayed loading (DL). For all groups, crestal bone level (CBL), attachment level (CAL), plaque index (PI), and bleeding on probing (BOP), were recorded at baseline examinations (BSL) and 6 (T1), 12 (T2), and 24 months (T3) after loading with the final restoration.

RESULTS

Nine implants were lost (four L and five M). The type of implant and time of placement and loading showed no significant influence on the survival rate. A mean CAL loss of 1.12 mm was observed during the first 2 years in the M group, while the mean CAL loss observed in L the group was 0.55 mm. Radiographically, L group implants showed a mean crestal bone loss of 0.58 mm compared to 1.09 mm for the M.

CONCLUSIONS

Results suggest that laser microtextured surface on implant collar may mitigate the negative sequelae connected with the peri-implant bone loss regardless of the type of positioning and loading protocol used.