Peri-implant bone and soft tissue evaluation in extra short dental implants installed in healed alveolar sites: A histologic study in dogs.

H. Morales Melendez, J. Cervera Maíllo, D. Morales Schwarz , J. Calvo Guirado
Universidad Católica de Murcia

Abstract

- Objective:** The aim of this study was to compare the behavior of peri-implant tissues in two different extra short implants design during osseointegration of crestal placement in maxilla dogs.
- Materials and Methods:** Eight Short DM 5 x 4 mm (Bioner, Spain) delayed implants were placed in each hemimaxilla of 6 dogs at the bone crest level. Four implants of each design (big and small platform) were randomized installed. After 12-week of healing period, histomorphometric analyses of the specimens were carried out to measure the crestal bone level values and the tissue thickness in the implant shoulder portion. The data were compared using the one-way ANOVA statistical tests ($\alpha = 5\%$).
- Results:** In the microscopic analysis of the crestal bone remodeling, the distance from the implant shoulder to the first bone-to-implant contact was higher for implants installed with small platform in the buccal aspect with statistical significance ($P < 0.001$). For peri-implant tissues thickness, the distance from the implant shoulder to the external portion of the epithelium was significantly higher for implants installed with big platform with statistical significance ($P < 0.001$).
- Conclusions:** Within the limitations of this study, our findings suggests that the amount of peri-implant tissues after remodeling over a period of 150 days is smaller in big platform extra short implant installed immediately in healed maxilla.

Background and Aim

Short implants present similar success rate than conventional ones , these implants depend specially on cortical bone anchorage because they are mainly used in highly resorbed areas where the amount of cortical bone remains stable in comparisson to trabecular bone.

The main drawbacks of short implants are on one hand, the lack of primary stability due to it small size and the unfavorable crown to implant ratio, therefore adding elements to maximize contact area and mechanical retention in dense cortical bone can be beneficial Short implants present similar success rate than conventional ones, these implants depend specially on cortical bone anchorage because they are mainly used in highly resorbed areas where the amount of cortical bone remains stable in comparisson to trabecular bone.

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Results

4.2	Distance from the implant shoulder to the first bone-to-implant contact
IMPLANT 3	2.34
IMPLANT 4	3.03
IMPLANT 5	3.508

5.3	DISTANCE FROM IMPLANT SHOULDER TO THE FIRST BONE-TO-IMPLANT CONTACT
IMPLANT 1	2.28
IMPLANT 2	2.479
IMPLANT 6	2.47
IMPLANT 7	4.345
IMPLANT 8	2.23

	DISTANCE FROM IMPLANT SHOULDER TO FIRST BIC (MM)
4.2	2.95
5.3	2.76

Conclusions

Within the limitations of this study, our findings suggests that the amount of peri-implant tissues after remodeling over a period of 150 days is smaller in big platform extra short implant installed immediately in healed maxilla.

References

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