

B-2. Healing of surgically created circumferential gap around non-submerged type implants in dogs: a histomorphometric study

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Objectives

This study was to evaluate the healing of surgically created circumferential gaps around non-submerged type implants according to varying size and healing periods in dogs.

Material and Methods

In four mongrel dogs, all mandible premolars were extracted and after an 8-week of healing period, non-submerged type implants were placed. Circumferential coronal defects around the implants were performed surgically with a customized tapered step drill. Groups were divided according to width of the coronal gaps: 1.0 mm, 1.5 mm, or 2.0 mm. First the right side of the mandible was prepared, and after 8 weeks, the left side was prepared. The dogs were sacrificed following an 8-week healing period. Specimens were analyzed histologically and histomorphometrically.

Results

As the size of the coronal gap increased, the unfilled area tended to be greater. In terms of bone-to-implant contact and bone density, both the 1.0-mm and 1.5-mm groups showed a larger percentage of coronal defect than the apical side, while the 2.0-mm group showed contrary results in the 8-week groups. The general histologic features in the 16-week groups were similar to the findings of 8-week groups but were more matured, with a higher percentage of lamellar bone. A certain amount of bone filling and osseointegration was observed in the defects of all the groups.

Conclusion

It can be concluded that the remaining defect, small enough to be clinically neglected, irrespective of gap size within 2 mm, does not need any kind of regenerating procedures.