CONTRIBUTION OF INTERPROXIMAL DENTO-IMPLANT ARCHITECTURE ON PAPILLA PRESENCE OR ABSENCE

Introduction
The correct mesio-distal and vertical-horizontal position of an implant is ultimately determined by esthetic requirements and anatomical architecture. Implants being placed too close together, unfavorable positions and/or axial disalignment should be avoided. Despite its significance, only little information is available on the interproximal dento-implant anatomy and its influence on the formation of papilla. The goal of this study is to evaluate anatomical requirements for a predictable, non-surgical papilla regeneration in single-unit implant restorations. The results can be applied to pre-prosthetic, surgical and laboratory procedures.

STUDY

The purpose of the study was to determine the contribution of the vertical distance between contact point and the root of bone, the horizontal distance between tooth and implant, and the line of implant placement up the presence of the dento-implant papilla in humans.

MATERIALS AND METHODS

Within a group of patients treated for single-tooth replacement with non-angulating implants (FRIALIT®-2), 10 patients with 100 implants were selected for a radiographic examination of the root and dento-implant interproximal tooth space (~r+Ds+ value). The main reason between implant placement and evaluation of the restored interproximal implant tooth site was 26 months (minimum 18 months, maximum 36 months, mean 26.8 months).

RESULTS

A vertical distance from the base of the crown to the root of bone between 2 to 8 mm is a good prerequisite for an appearance interproximal papilla. Vertical distances below 1 mm or above 9 mm reduce the opportunity for papilla presence significantly. A horizontal distance between 0 and a maximum of 2 mm with anatomical data of tooth and shows the re-establishment of interproximal papilla architecture. A horizontal distance between 3 to 4 mm requires papilla re-establishment considerably. The effect shows a significant influence on the appearance of interproximal papilla regeneration. When implant placement was performed after complete osseous healing of the extraction site, the papilla was present. Interproximal papilla presence, papilla placement procedure and considerable shape of overlying soft tissues.

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Conclusion

Vertical
Decreased papilla regeneration if...
vertical distance from dento-implant contact point to bone crest: 5-6 mm
Increased papilla regeneration if...
vertical distance from dento-implant contact point to bone crest: 3-4 mm

Horizontal
Decreased papilla regeneration if...
horizontal dento-implant space: 1 mm
Increased papilla regeneration if...
horizontal dento-implant space: 2-4 mm

References

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