Influence of vertical soft tissue thickness on peri-implant bone loss

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Abstract

Aim and Background

Numerous variables have shown to affect peri-implant bone loss. Recently, soft tissue thickness has been evaluated as an important factor influence bone loss. The aim of our lecture was to elucidate of role of vertical soft tissue thickness on peri-implant bone loss.

Materials and method

6 articles about this subject include 5 original articles and a review one from PubMed and Google scholar entered our search and were investigated.

Results

Six articles were included in this study, and five were included in the quantitative synthesis and meta-analyzed to examine the influence of tissue thickness on early MBL. Meta-analysis for the comparison of MBL among selected studies showed a WMD of -0.80 mm (95% confidence interval -1.18 to -0.42 mm)($P < 0.0001$), favoring the thick tissue group. Metaregression of the selected studies failed to demonstrate an association among MBL and confounding factors.All of selected studies have been shown that implant placement in a region with thickness of >2mm show less bone loss than thin one(<2mm). It's interesting that in one study 85% of the implants in thick mucosal tissue showed no bone loss. One study reported that soft tissue thickening with allogeneic membrane can reduce bone loss. Also all of the studies had shown that in a single tooth mesial bone loss is less than distal area.

Conclusion

It can be concluded that vertical soft tissue thickness have an important role in crestal bone loss and implants placed with thick soft tissue have less radiographic bone loss than thin one. Initial gingival tissue thickness at the crest may be considered as a significant influence on marginal bone stability around implants. If the tissue thickness is 2.0 mm or less, crestal bone loss up to 1.45 mm may occur, despite a supracrestal position of the implant-abutment interface.

Keywords: Implant, Soft tissue thickness, Bone loss

Oral presentation

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