Poster number

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Functional Hard and Soft Tissue Regeneration around Profile Implants placed in Sloped Alveolar Ridges

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Topic: Implant therapy outcomes surgical aspect

BACKGROUND AND AIM

To cover the physiological height difference problem of the sloped alveolar ridge areas a implant with a sloped shoulder (Astra Tech OsseoSpeed Profile, Mölndal, Sweden) has been developed to support the periimplant structures circumferentially. This study evaluates the functional hard and soft tissue changes especially at the buccal and interproximal aspect (marginal bone level, width of keratinized mucosa, Papilla Index according to Jemt) around Profile implants placed in healed, sloped alveolar ridge sites at least 3 years following implant insertion.

METHODS AND MATERIALS

15 patients with 15 sloped implants were evaluated regarding changes of the periimplant keratinized mucosa and the buccal bone height and thickness. Using the photographic case documentation obtained at preoperative examination, re-entry, delivery of final restoration and at the 1-, 2-, 3- and 5-year re-examination a retrospective assessment of the width of the keratinzed mucosa (WKM) in relation to the distance (DMC) between mucogingival junction and the edge of the crown was performed.

RESULTS

The retrospective analysis of the photographic documentation revealed that at the time of prosthesis delivery the width of the keratinized mucosa in relation to DMC was 17.4% (range 3.8% - 32.1%), at 1-year follow-up 26% (range 14.3% - 38.4%), at 2-year follow-up 25.4% (range 11.6% - 40.4%) and at 3-year follow-up 23.9% (range 10.3% - 39.8%). The difference of WKM in relation to DMC between time of delivery and the 1-year follow-up was statistically highly significant (p = 0.001). The further follow-up up to the 3-year follow-up showed a stable and unchanged WKM in relation to the 1-year results.

CONCLUSIONS

The retrospective analysis of the peri-implant soft tissue changes revealed that the implant placement of OsseoSpeed™ Profile implants in healed and sloped alveolar ridges for single-tooth restoration resulted in a functional hard and soft tissue regeneration and an increase in width of the peri-implant keratinized mucosa.

Fig.1: Increased width of buccal platform shift of OsseoSpeed Profile implant.

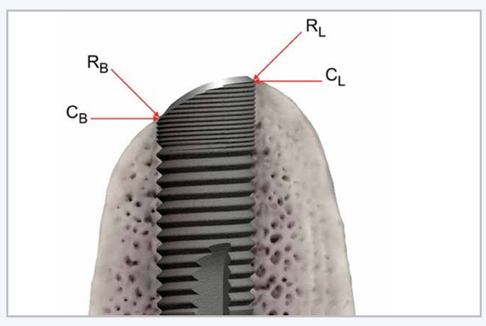

Fig.2: Alignment and measurement technique at the sloped Profile implant shoulder.

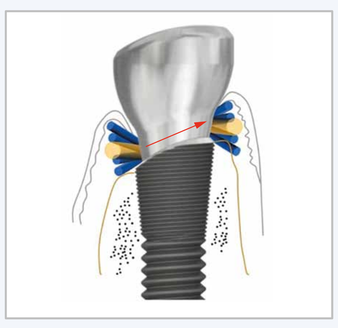

Fig.3: Oral anchorage for peri-implant fiber complex.

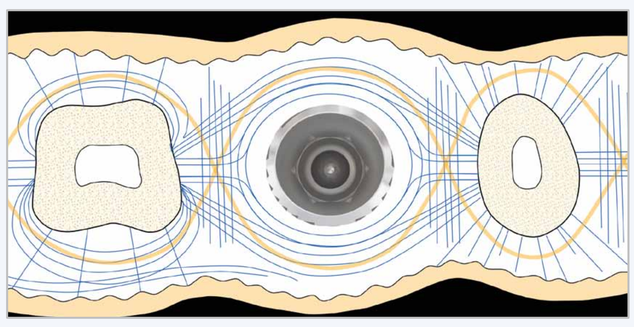

Fig.4: Reconstruction of peri-implant fiber complex according to Feneis at a Profile implant site.

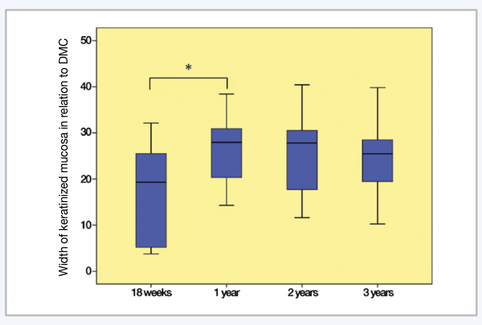

Fig.5: Significant increase in width of keratinized mucosa from delivery to 1-year follow-up (p=0.001)

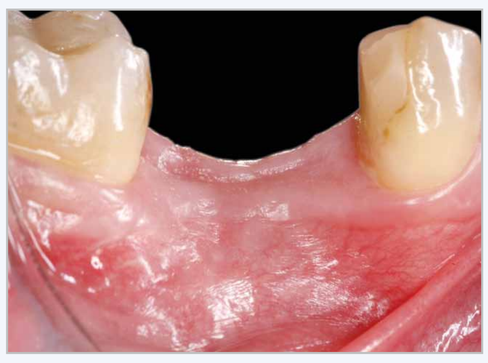

Fig. 6a: Pre-op clinical aspect of wa first molar site 3-month post extraction.

Fig.6b: Delivery of PFM crown on top of titanium abutment at 5 months.

Fig.6c: Improved peri-implant keratinized mucosa at 1-year follow-up examination.

Fig.6d: Thickened peri-implant keratinized tissue collar at 6-year follow-up.

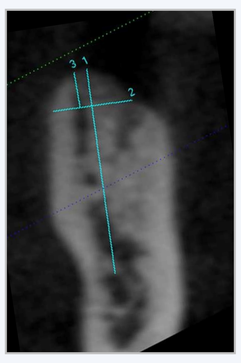

Fig.6e: Pre-op CB-CT with sloped crest.

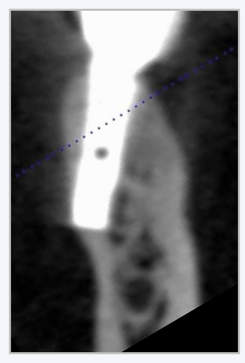

Fig.6f: Improved buccal bone height at 6 years.

Fig.7a: Pre-op clinical aspect of edentulous canine site 9 months following extraction.

Fig.7b: Delivery of PFM crown on top of titanium abutment at 5 month.

Fig.7c: Improved peri-implant mucosa and papillae height at 1 year.

Fig.7d: Further increased peri-implant mucosa width and papilla height at 5 year follow-up.

Fig.7e: Pre-op CB-CT showing slight resorption.

Fig.7f: Facial bone level coronal to implant shoulder at 4 years.

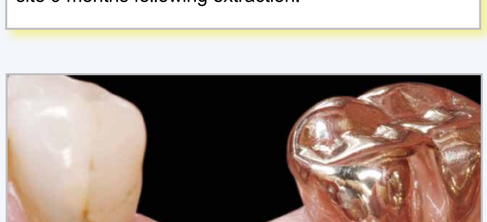

Fig. 8a:Pre-op clinical situation with sloped resorption in first molar site.

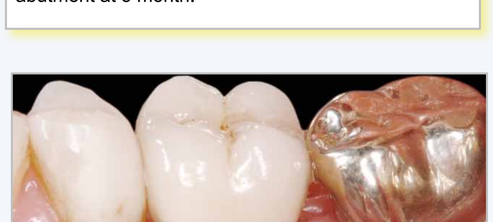

Fig.8b: Delivery of PFM crown on top of titanium abutment at 5 months.

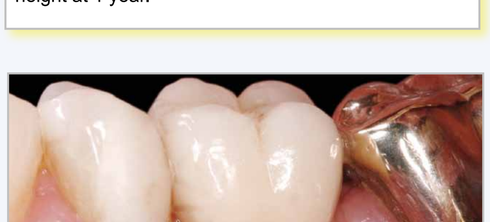

Fig.8c: Improved buccal and interproximal tissue level at 1 year.

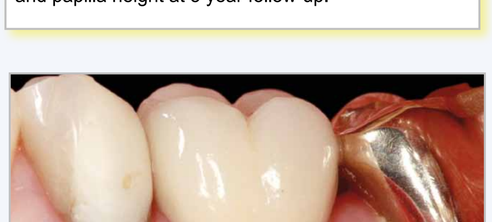

Fig.8d: Increased and thickened peri-implant keratinized mucosa at 5 years.

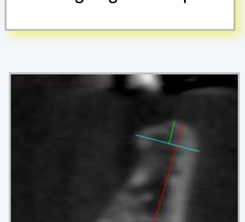

Fig.8e: Pre-op CB-CT showing severe crestal resorption.

Fig.8f: Maintained buccal bone level at 4 years.

Fig.9a: Pre-op clinical aspect of first molar site with significantly reduced width of keratinized tissue.

Fig.9b: Delivery of PFM crown and reduced width of attached mucosa at 5 months.

Fig.9c: Improved buccal soft tissue thickness at 1 year follow-up.

Fig.9d: Harmonious and thickened soft tissue collar around sloped implant shoulder at 5 years.

Fig.9e: Pre-op CB-CT with severe crestal resorption.

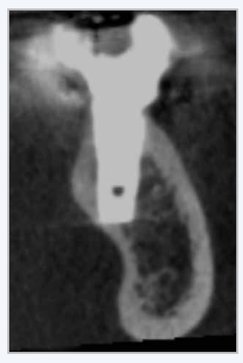

Fig.9f: Maintained marginal buccal bone level at 5 years.

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CHALLENGES IN IMPLANT TREATMENT