To cover the physiological height difference problem of the sloped alveolar ridge areas a implant with a sloped shoulder (Astra Tech Osseo-Speed Profile, Mölndal, Sweden) has been developed to support the peri-implant 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 keratinized 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.