



Soft Tissue Augmentation Around Implants: a Case Report

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INTRODUCTION

In the context of implants, the keratinised mucosa is made up of dense connective tissue, rich in collagen, and covered by keratinised epithelium (Dhir et al., 2013). The role of this mucosa in preventing peri-implant disease continues to be the subject of debate. Some studies suggest that the presence of keratinised mucosa may be associated with greater soft tissue stability, reduced probing depths, less plaque accumulation, greater patient comfort and easier oral hygiene, especially in areas subject to mechanical aggression during brushing (Berglundh et al., 2018; Hussain et al., 2021). However, it has also been shown that implant success can occur even in the absence or with a limited amount of keratinised mucosa (Hussain et al., 2021). In addition, a recent systematic review concluded that reduced levels of keratinised mucosa around implants are associated with a higher prevalence of peri-implantitis, i.e. soft tissue inflammation and recession, marginal bone loss and patient-reported discomfort (Ramanauskaite, Schwarz & Sader, 2022).

In this context, although the evidence is limited, it suggests that surgical intervention to increase the width of the keratinised mucosa can be considered as a preventive measure for maintaining peri-implant health in cases of absence or deficiency of keratinised mucosa and the presence of complaints such as discomfort during brushing (Carra et al., 2023).

AIMS

The aim is to describe a clinical case in which surgery was performed to increase the width of the keratinised mucosa around implants 45 and 46. This procedure was intended to reduce the patient's pain and discomfort, while also facilitating improved oral hygiene.

MATERIALS AND METHODS

A 50-year-old non-smoking female patient with no relevant medical history presented with bleeding on probing (BOP) and an absence of keratinised mucosa around implants 45 and 46. The patient reported pain and discomfort when brushing, which contributed to inadequate plaque control in the affected area.

To address this, a free gingival graft was performed in combination with vestibule deepening, aiming to increase the width of keratinised mucosa and facilitate improved oral hygiene.

The graft was harvested from the palatal mucosa. The donor site was sutured with 4/0 silk sutures and protected post-operatively with a haemostatic sponge and flowable resin. Simple and crossed 5/0 nylon sutures were used to stabilize the graft to the periosteum at the recipient site.

Post-operative instructions included refraining from brushing the recipient area for 15 days, consuming soft and cold foods, avoiding physical exercise during the healing period, and adherence to a prescribed medication regimen consisting of amoxicillin 1000 mg (1 pill every 12 hours for 8 days), ibuprofen 600 mg (1 pill every 12 hours for 5 days), and paracetamol 1000 mg (SOS) to prevent infection and manage pain and inflammation.



Figure 1: Pre-operative image of the implants 45 and 46 without keratinised mucosa



Figure 2: Post-operative image of the implants 45 and 46 with the free gingival graft



Figure 3: 1 week follow-up



Figure 4: 2 weeks follow-up, without the crowns



Figure 5: 2 weeks follow-up, with the crowns



Figure 6: 9 weeks follow-up

RESULTS AND DISCUSSION

The surgical procedure successfully increased the width of the keratinised mucosa around implants 45 and 46. Consequently, the patient experienced reduced pain and discomfort when brushing. The improved tissue architecture also made it easier to use interdental brushes, which contributed to better oral hygiene and more effective plaque control.

Post-operative healing was uneventful, with no complications. At the 9 weeks follow-up appointment, probing depths did not exceed 3 mm and there was no bleeding on probing. Implants were surrounded by a band of keratinised mucosa measuring approximately 2-3 mm. In this case, the combination of the patient's symptoms, the absence of keratinised mucosa and the accumulation of plaque justified surgical intervention. Given the evidence suggesting that keratinised mucosa supports peri-implant health, the decision was made to perform a free gingival graft with vestibule deepening. At 9 weeks of follow-up, this procedure resolved the symptoms, improved the hygiene, and may possibly prevent further complications.

CONCLUSION

The surgical approach involving a free gingival graft and vestibular deepening was effective in alleviating the patient's symptoms and significantly improving both oral hygiene and brushing comfort. The formation of a band of keratinised mucosa around the implants helped to control plaque more effectively and maintain peri-implant health. These results highlight the importance of keratinised mucosa in peri-implant tissues, especially in cases involving compromised hygiene and associated discomfort.

