A Surgical Procedure for Free Subepithelial Connective Tissue Graft to Treat a Soft Tissue Dehiscence in a Single-Tooth Implant-Supported Restoration: A Case Report

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ABSTRACT

This case report describes a surgical procedure for coronally advancing the peri-implant mucosa to treat a soft tissue dehiscence in a single-tooth implant-supported restoration using a free subepithelial connective tissue graft combined to coronally reposioned flap.

KEYWORDS

Connective tissue graft, Dehiscence, Implant.

INTRODUCTION

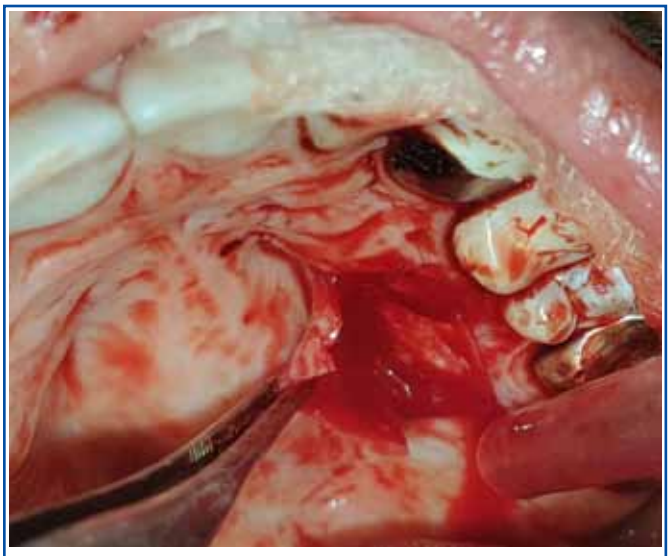
The use of dental implants to replace missing teeth has been very popular in dentistry but made the treatment more complicated and sometimes undesirable complication is encountered as we will see in this case. When planning for the placement of a single-tooth implant many factors must be considered most important of which is the alveolar bone quality and quantity and soft tissue assessment at the site of placement. The horizontal and vertical soft tissue dimensions around implant- supported restoration is one of the determining factors for achieving an aesthetic results[1] if this was overlooked unaesthetic outcome might result. Another potential concern for the lack of soft tissues around implants is dentine hypersensitivity in adjacent teeth.[2] So surgical manipulation or augmentation of peri-implant soft tissues may be beneficial to increase the width and thickness of the gingival keratinized tissues and also to improve aesthetic outcome of implant therapy, the subepithelial connective tissue graft is a gingival plastic surgery that may be used to enhance the aesthetic and gingival contour of periodontium.[2]

Soft tissue management around dental implants may be done prior to the surgical phase, after the surgical phase, before loading and even after loading as we did here. A thick gingival biotype is more suitable for implant placement, providing more favorable esthetic results. A treatment plan should be based on individual patient needs as well as the knowledge and experience of the clinician.[3]

(Fig. 1a) *A recession of 4mm on the gingival margin at implant supported upper left canine Implant threads exposed*

(Fig. 1b)
OPG shows bone loss around

(Fig. 2) *Preparation of the recipient site by raising a full thickness mucoperiosteal flap and exposing the Implant surface*



(Fig. 3) *Harvesting the connective tissue graft from the palate*

(Fig. 4) *The connective tissue graft harvested*

(Fig. 5) *The graft placed in its recipient bed*

(Fig. 6) *The graft sutured in place*

(Fig. 7) *Donor site sutured*

(Fig. 8) *Healing of recipient site after one week*

(Fig. 9) *Healing of the palate after one week*

(Fig. 10) *Three weeks after surgery*

(Fig. 11) *Five weeks after surgery (chlorehixidine stain)*

(Fig. 12) *Three months after surgery*

(Fig. 13) *Before and After*

The subepithelial connective tissue graft as a donor source for root coverage was successful due to the double-blood supply at the recipient site from the underlying connective tissue base and the overlaying recipient flap. But this is not the case when covering an exposed implant threads where the blood supply comes from the overlaying recipient flap and the adjacent exposed interdental connective tissue.[4] So we can obtain a good result using this technique combined to coronally repositioned flap.

The aim of this case report to present a clinical case showing the surgical treatment of soft tissue dehiscence around single tooth supported implant by combining subepithelial connective tissue graft and coronally repositioned flap.

METHODS

The patient was 50-years-old systemically healthy, non-smoking female. Her chief complaint pertained to the unaesthetic appearance of her left upper implant supported restoration to replace missing canine, caused by recession of the mucosal margin **(fig. 1a)**, OPG revealed bone loss around implant **(fig. 1b)**. Upon examination a 4mm recession could be observed, the periodontium was classified as thin. A 2mm band of keratinized peri-implant mucosa was present. Keratinized gingiva was approximately 5 to 6mm at adjacent areas.

The surgical technique included a full thickness flap designed to expose the implant and prepare a donor site for a free subepethelial connective tissue graft. **(fig. 2)**

And another incision in the palate opposite to upper left premolars and first molar to harvest the graft **(fig. 3)**. Also preparation of the implant surface was necessary to smooth and decontaminate before the graft was placed. After the connective tissue was harvested and prepared. **(fig. 4)** It was placed at the recipient site **(fig. 5)** and sutured, the flap was placed coronally and also sutured **(fig. 6)**. Donor site sutured **(fig. 7)**. Healing proceeded uneventfully and excellent results were obtained. **(figs. 8-12)**

RESULTS

Complete coverage of the recession was achieved, after 3- month's period, tissues appeared thicker than preoperatively, with no bleeding on probing and no probing depth > 3mm. The patient was satisfied with the overall treatment result **(fig. 12)**

CONCLUSION

This case report shows the possibility of achieving complete soft tissue coverage over an implant-supported restoration with the combined use of free sub epithelial connective tissue graft and coronal repositioned flap.

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