



SUB-EPITHELIAL CONNECTIVE TISSUE GRAFT COMBINED WITH PLATELET-RICH FIBRIN IN MANAGEMENT OF PERI-IMPLANT SOFT TISSUE DEHISCENCE – A CASE REPORT

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ABSTRACT

Over the past 2 decades the use of dental implants to advance functional and esthetic demands of dentition has amplified significantly. Patients today have become extremely concerned about esthetics which has become an integral part of the periodontal practice. One of the major factors contributing to improved esthetics is soft and hard tissue management. A chief esthetic concern is soft tissue defects around implant restoration. Implant soft tissue dehiscences compromise the aesthetics of the supported restorations and also implant survival in the long run.

The present case report gives a novel technique for soft tissue reconstruction and covering defects associated with a palatally placed maxillary implant-supported restoration. A pedicle subepithelial connective tissue graft was prepared from the palatal mucosa and was displaced into the receptor site, along with the PRF. The receptor and donor site were primarily covered. After surgery of four months, the peri-implant soft tissue margin was compared with the baseline. A 2 mm increase in buccal soft tissue margin was accomplished. There was good stability of the soft tissue margin and the esthetic appearance of the implant site was well preserved. This case report demonstrates the possibility of fully correcting peri-implant soft tissue defects and achieving high patient satisfaction through a subepithelial connective tissue graft in conjunction with growth factors.

KEYWORDS: *Buccal peri implant soft tissue dehiscence ,peri implant recession , PRF , sub epithelial connective tissue graft*

INTRODUCTION

Dental implants are an extensively used treatment option in dental clinics. They have been proven to be a reliable solution for the successful rehabilitation of missing or non-restorable teeth with favorable long-term survival rates.¹ However, like every other procedure, they are not free of complications. The most dominant are mucositis(29.48%) and/or peri-implantitis (9.25%), esthetic complications, and loss of osseointegration prior to prosthetic loading.² Today, implant survival is not the solitary objective of implant dentistry. Optimum aesthetics and good patient satisfaction are considered game-changers in clinical practice.¹ The long-term success of implant-supported rehabilitation is strictly influenced by both the density and volume of available bone and the quality of soft tissues at the implant site.³ A major concern is the appearance of soft tissue dehiscence (STD) in the facial aspect, a common finding following implant restoration.⁴ Different soft tissue defects around dental implants have been introduced. A few of them are papilla or volume loss, peri-implant recession, and alterations of the ridge color and/or texture. Because of the high patient demand for esthetics, these defects make them more aware. Therefore these defects around implants demand treatment⁵

soft tissue dehiscences/deficiencies around implant (PSTD)is described as loss of attachment including one or more of their surfaces.⁶ Buccal peri-implant soft tissue dehiscences (PSTDs) develop due to the apical shift of the facial mucosal margin of the implant-supported prostheses. Implant malposition and the thin peri-implant phenotype are two of the key determinants for the occurrence of STDs.⁶ Four other parameters that have been evaluated are the level of the soft tissue margin (STM), the papillae height (PH) in comparison to the homologous tooth, the peri-implant mucosa color, and mucosa appearance (PMA).^{6,7} The role of peri-implant mucosa is to act like a soft tissue barrier by preventing bacterial penetration.^{8,9} Papilla loss is a most common peri-implant soft tissue complication.⁵

In the management of various mucogingival defects, Subepithelial CTG has proved to be successful. This article aims to treat soft tissue deficiency around the implant by CTG along with growth factors.



CASE REPORT

The present case reports a technique of treating soft tissue defect around implant associated with palatally placed maxillary implant-supported restoration with maxillary anterior 11.

2.1. Clinical case presentation

A 28-year-old male was referred from the Department of Orthodontics and Dentofacial orthopedics, Kvg Dental College and Hospital, Sullia DK to department of periodontology with a chief complaint of unesthetic placement of 11. (Figure1). The patient had placed the implant 1 year ago from a private clinic . The patient was a non-smoker with good general health and had received no antibiotics and/or periodontal therapy during the previous 1 year.

We came up with a diagnosis of soft tissue deficiency around implant PSTD .

PRESURGICAL PREPARATION

The procedure was explained to patient and informed consent was obtained. The patient was motivated toward the maintenance of his oral hygiene

SURGICAL TECHNIQUE

The flap design for the surgical procedure has been shown in Figure 4.

Following local anesthesia application (2% lidocaine, epinephrine1:100,000). An intracrevicular incision was made followed by mesial and distal vertical releasing incisions. Both horizontal and vertical incisions are connected. A full-thickness flap was elevated in an apical direction until the mucogingival junction (MGJ). The periosteum was released and blunt dissection into the vestibular lining mucosa was performed to eliminate tension to help re-position the flap (Figure 2).¹²

PREPARATION OF DONOR SITE

The donor site for the sub-epithelial connective tissue graft selected was the palatal site of the same subject as the availability of quantity and quality of tissue. Steps for harvesting donor palatal tissue: a horizontal incision in the palate 3 mm from the free gingival margin, and two parallel internal vertical incisions, one superficial and one deep, and connected mesially and distally (L-shape). The underlying connective tissue of a thickness of 1–1.5 mm and a length of 3 mm was released at its base and removed. The wound was closed with simple interrupted 4-0 silk sutures. The graft was fit to the recipient site along with PRF and secured with an interrupted suture using 5-0 vicryl . Silk sutures were removed after 14 days; viable portions of the vicryl suture were removed after 3 weeks. To reduce the risk of post-surgery complications, the donor site was covered with non – a eugenol coe pack .Healing took place by primary intention .

FOLLOW-UP AND MAINTENANCE

For maintenance of oral hygiene, instructions were provided to the patient. Instruction was not to brush their teeth in the surgical area and to use chlorhexidine gluconate mouth rinse (0.12%) for 60 s twice daily for 10 days and amoxicillin 500 mg thrice daily for 5 days to prevent infection. The patient was instructed to avoid muscle traction and trauma to the treated area for the first 3 weeks.

Suture removal was done after 10 days .

Recall visits for prophylaxis treatment were arranged at 1, 3, 5, 8, 12, 16 and 32 weeks.

DISCUSSION

SOFT TISSUE DEFECTS

Soft tissue around dental implants gets influenced by many factors, some of these have been studied well, and others have not been explored or are still controversial.¹³ soft tissue dimensions around the implant-supported single-tooth restoration are factors proposed to be important for the esthetic purpose of implant therapy (Belser et al.1998) .³

RISK FACTORS

A key factor for the incidence of PSTD is found to be the buccolingual malposition of the implants.⁷

SURGICAL TECHNIQUES FOR THE TREATMENT OF SOFT TISSUE DEFICIENCY

A variety of surgical techniques have been recommended to treat soft tissue defects around implant, and the coronally advanced flap along with connective tissue graft is the most commonly described technique in the literature.⁶

Connective tissue grafts is successful when they attain adequate vascularization from the neighboring blood vessels a way of getting nourishment.¹⁶ Therefore in this clinical case report, the main idea was the preservation of the blood supply of the connective tissue graft as much as possible.

CONCLUSION

Soft tissue deficiencies around implants developed after implant loading of 6 months and could compromise the patient's aesthetics. When risk factors such as implant malposition and thin biotype exist the possibility of getting soft tissue defects around implant increases.⁷ coronally advanced flap with a CTG is proved to be a better surgical technique in treatment of soft tissue defect¹⁷

This article presented a case report with a subepithelial connective tissue graft, and PRF are an effective treatment modality for the management of PSTD affecting teeth in the esthetic zones of the mouth. This surgical technique resulted in the complete achievement of keratinized tissue and high patient satisfaction.

PICTURES



Fig 1

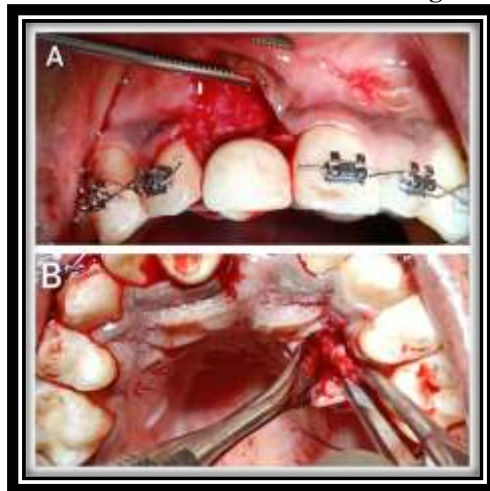


Fig 2

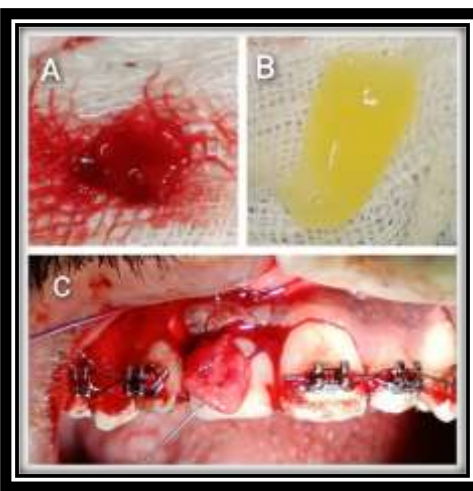


Fig 3

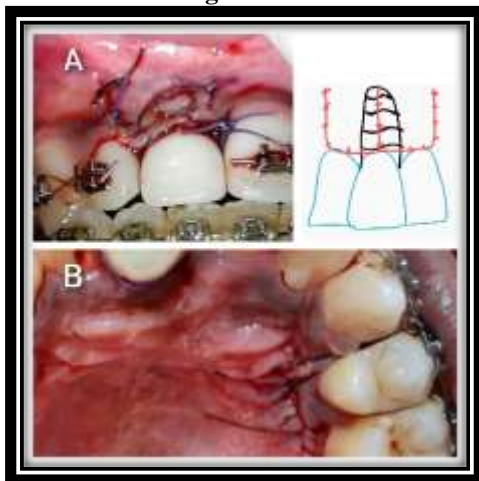


Fig 4



Fig 5



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