

Case Report

# Papillary Reconstruction: A Case Report

Rakesh Mutha<sup>1\*</sup> • Pooja Mutha<sup>2</sup> • Nitin Dani<sup>3</sup>

<sup>1</sup>M.D.S., Senior Lecturer, Department of Periodontics, D.Y. Patil Dental School, Pune, India

<sup>2</sup>M.D.S., Senior Lecturer, Department of Endodontics, D.Y. Patil Dental School, Pune, India

<sup>3</sup>M.D.S., Professor and Head, Department of Periodontics, M.G.V's K.B.H Dental College and Hospital, Nasik, India

\*Corresponding Author; E-mail: Mutha.rakesh@gmail.com

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## Abstract

The loss of the papilla can lead to cosmetic deformities, phonetic problems and lateral food impaction. Several reasons contribute to the loss of interdental papillae and the establishment of “black triangles” between teeth. In 1996, Han and Takei proposed a novel approach based on the use of a semi-lunar incision placed in the alveolar mucosa of the interdental area. The present case report, utilizing their approach, showed that within limits papillary reconstruction is achievable.

**Key words:** Papillary reconstruction, sub-epithelial connective tissue graft.

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## Introduction

The presence or absence of the interproximal papilla is of great concern to periodontists, restorative dentists and the patients. The loss of the papilla can lead to cosmetic deformities, phonetic problems and lateral food impaction.

Several reasons contribute to the loss of interdental papillae and the appearance of “black triangles” between teeth. Loss of periodontal support due to plaque-associated lesions, abnormal tooth shape, improper contours of prosthetic restorations and traumatic oral hygiene procedures are some of the reasons causing papillary recession. Several surgical and nonsurgical techniques have been proposed to treat soft tissue deformities and manage the interproximal space. The nonsurgical approaches (orthodontic, prosthetic, and restorative procedures) modify the interproximal space, inducing modifications to the soft tissues. The surgical techniques aim to recontour or reconstruct the soft tissue between the teeth and implants.<sup>1</sup>

## Interdental Space

The interdental space is a physical space between two adjacent teeth. Its form and volume are determined by the morphology of the teeth. The interdental space is composed of four pyramidal embrasures: cervical, occlusal, buccal and lingual. The apex of each pyramid ends at the contact point or area of two adjacent teeth. The lingual, buccal and occlusal pyramids are empty, while the cervical one is occupied by the interdental papilla.

## Classification of the Loss of Interdental Papilla

A classification for the loss of papilla height was proposed by Nordland and Tarnow. This classification is based on three anatomic landmarks: interdental contact point, facial apical extent of the CEJ, and interproximal coronal extent of the CEJ. Four classes were identified:<sup>2</sup>

- **Normal:** Interdental papilla fills the embrasure to the apical extent of the interdental contact point area.
- **Class I:** The tip of the interdental papilla lies be-

tween the interdental contact point and the most coronal extent of the interproximal CEJ.

- **Class II:** The tip of the interdental papilla lies at or apical to the interproximal CEJ but coronal to the apical extent of the facial CEJ.
- **Class III:** The tip of the interdental papilla lies level with or apical to the facial CEJ.

In 1996, Han and Takei proposed an approach based on the use of a semilunar incision placed in the alveolar mucosa of the interdental area. Intra-sulcular incisions connect with the semilunar incision to allow the elevation of a split-thickness flap and the coronal displacement of the gingiva-papillary unit. A subepithelial free gingival connective tissue graft is placed beneath the coronally positioned interdental tissue.<sup>3</sup>

### Case Report

The patient reported to the Department of Periodontics with a chief complaint of unaesthetic black space in the upper anterior region. Clinical examination revealed papillary recession between teeth #11 and #12 (Figure 1). The cause for the papillary recession was found out to be traumatic oral hygiene routine. Transgingival probing revealed a probing depth of 5 mm and the radiographic examination showed mild horizontal bone loss. Papillary reconstruction was planned with the black triangle between teeth #11 #12 by the method described by Han and Takei.<sup>3</sup>

### Procedure

A semilunar incision was placed palatally in the interdental region (Figure 2). Intra-sulcular incisions were placed connecting with the semilunar incision to allow the elevation of a split-thickness flap and the coronal displacement of the gingival-papillary unit. A subepithelial free gingival connective tissue graft was harvested from the palate. The graft was trimmed to the desired size and shape and fitted under the flap to provide more bulk in the papillary area. Light-cured periodontal dressing was applied and the patient was advised to observe chemical plaque control with 0.12% chlorhexidine mouthwash for a period of 14 days (Figures 3 and 4).

### Conclusion

The absence or loss of the interdental papilla is one of the most important aspects in the decision-making process of clinicians. With the increasing cosmetic demands of patients, dental procedures like papillary reconstruction are under constant modification. The present case report, utilizing a recent technique,



Figure 1. Preoperative view.



Figure 2. Palatal incision placed.



Figure 3. Immediate postoperative view. (The connective tissue graft was placed palatally and the flap was positioned coronally.)



Figure 4. Three months postoperatively.

showed that depending on the class of papillary recession its reconstruction is achievable.

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