



Surgical Reconstruction of Interdental Papilla Using Subepithelial Connective Tissue Graft (SCTG) with a Coronally Advanced Flap: A Clinical Evaluation of Five Cases

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Abstract

Aim: The aim of these case reports was to evaluate the effectiveness of a subepithelial connective tissue graft with a coronally advanced flap to reconstruct an interdental papilla.

Background: In the last decade, esthetics has become a major concern in periodontal therapy. One of the most difficult and elusive goals for the periodontist in the esthetic aspect of periodontal therapy is the reconstruction of the interdental papilla. Consequently, the absence or loss of the interdental papilla for a variety of reasons may create significant esthetic, functional, and phonetic challenges for the patient.

Case Description: Five systemically healthy patients between the ages of 23 and 52 years with absence of the periodontal pocket were selected. Loss of interdental papillary height was classified using the Nordland and Tarnow classification system as class 1 to 4. All five patients received a subepithelial connective tissue graft (SCTG) with a coronally advanced flap (CAF). Four parameters were measured at baseline and at six months post-surgery: (1) vertical distance from contact point to gingival margin, (2) soft tissue (papilla) height in the interdental area, (3) horizontal distance at the gingival margin, and (4) width of keratinized gingiva. The changes noted at six months post-surgery were (1) the vertical distance decreased from 3.2 ± 0.44 mm to 0.4 ± 0.54 mm,

(2) the mean gain in soft tissue (papilla) height increased from 3.2 ± 0.44 mm to 5.8 ± 0.44 mm, (3) the horizontal distance at the gingival margin was reduced from 2.6 ± 0.54 mm to 0.4 ± 0.54 mm and the width of the keratinized gingiva increased 1.4 ± 0.89 mm.

Conclusion: The periodontal surgical technique used for the five reported cases successfully reconstructed the interdental papilla in just one type of papilla loss, the class I situation. Therefore, it should not be concluded that the technique shown would be equally as successful for every type of papilla loss. Furthermore, the postoperative time interval was short, at only six months.

Clinical Significance: A subepithelial connective tissue graft supported by a coronally advanced flap should be considered to surgically correct the loss of an interdental papilla in class I cases.

Keywords: subepithelial connective tissue graft, coronally advanced flap, interdental papilla reconstruction, dental esthetics.

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Background

One of the major esthetic challenges in periodontal plastic surgery is the reconstruction of a lost or missing interdental papilla, especially in the anterior region.^{1,2} The presence of interproximal spaces may result in esthetic and phonetic problems. Interdental papillae can be lost as a result of several distinct clinical situations.³ The most common reason in the adult population is loss of periodontal support because of plaque-associated lesions and previous pocket elimination periodontal therapy. However, abnormal tooth shape, improper contours of prosthetic restorations, and traumatic oral hygiene procedures also may produce negative changes on the size and shape of the interdental soft tissues.⁴ Kandaswamy et al⁵ reported that dark triangles (or black holes) are more likely to develop following labial movement of overlapping or palatally placed incisors and diastema closure. Therefore, it is not unusual for clinicians to encounter situations where reconstruction of a lost papilla is not only warranted, but highly desirable.

Several surgical and nonsurgical techniques have been proposed to treat soft-tissue deformities to manage tissue changes in the interproximal space. The nonsurgical approaches include such adjunctive therapies as orthodontics and both prosthetic and restorative procedures to modify the interproximal space, thereby producing subsequent modifications to the interdental soft tissue.^{3,4,6} Surgical techniques aiming at correcting the “black hole problem” have relied mainly on the use of free epithelized gingival grafts, repeated interproximal curettage,⁷ or displacement of the interproximal palatal tissue in the buccal direction.⁸ While limited success has been achieved with these surgical procedures, the one major limiting factor for the complete and predictable survival of the graft tissues is the lack of a minimal source of a blood supply.⁹

The healing principles on which the subepithelial connective tissue graft (SCTG) for root coverage^{10,11} and the ridge augmentation¹² procedure are based (double blood supply) have recently been applied to the reconstruction of the interdental papilla, thus increasing both the success rate and predictability.⁶ For example, Han and Takei⁶ described a technique in which they placed a pedicle graft using a semilunar incision with coronal displacement of the entire

gingivopapillary unit. They held the graft in place with a section of SCTG beneath the coronally displaced tissue. They found this provided a predictable surgical procedure for reconstructing a lost gingival papilla. Azzi et al¹³ demonstrated a surgical technique for the reconstruction of the collapsed interdental papilla using a connective tissue graft placed under the buccal and palatal flaps. They reported consistently good results for improving gingival esthetics.

The following five case reports illustrate the use and effectiveness of a subepithelial connective tissue graft with a coronally advanced flap (CAF) for the reconstruction of lost interdental papillae.

Case Description

Five patients in good general and periodontal health (two men, three women) ranging in age from 23 to 52 years (mean age 36.2±10.37 years) with total or partial lack of interdental papilla either in the maxillary or mandibular anterior region were recruited from the outpatient Department of Periodontics, Sharad Pawar Dental College, Sawangi (Meghe), Wardha, India, using the following criteria:

Inclusion Criteria:

1. Patients who were more conscious about their esthetics and anxious to undergo the treatment for elimination of “black triangles” by restoring interdental papillae.
2. The vertical distance from the interdental contact point to the crest of the interdental bone was ≥ 6 mm as measured by bone sounding.
3. The presence of a band of keratinized tissue around the test teeth that was ≥ 2 mm.

Exclusion Criteria:

1. The presence of periodontal pockets or attachment loss.
2. Smokers or individuals who used any tobacco products.
3. Teeth with interdental spacing, proclined teeth, or rotated teeth.
4. Pregnancy or lactating mothers.

Initial Therapy

The study protocol was first approved by the ethical committee of Datta Meghe Institute of Medical Sciences, Sawangi (Meghe), Wardha, India. Prior to initiating this study, the purpose and

design of the clinical trial were explained to the patients and an informed consent form was read and signed by every patient.

Information concerning dietary status, mouth cleaning habits, systemic health (medical history), gingival and periodontal status, as well as other routine clinical details were recorded in a specially designed chart by the operator. Patients were examined under good illumination with the aid of a mouth mirror and William's graduated periodontal probe (Hu-Friedy, Chicago, IL, USA) (number code PQ-W).

After proper examination and diagnosis, initial therapy, consisting of oral hygiene instructions, supragingival and subgingival scaling, and occlusal adjustment, if necessary, was performed. Plaque control instructions were repeated until patients achieved plaque scores of ≤ 1 .

Clinical Measurements

Patient's oral hygiene status was evaluated by using the Turesky-Gilmore-Glickman modification of the Quigley-Hein Plaque Index¹⁴ as an expression of the level of full-mouth supragingival plaque accumulation. Gingival inflammation was assessed using the Mühlemann Papillary Bleeding Index.¹⁵

1. Plaque Score: Turesky-Gilmore-Glickman Modification of the Quigley-Hein Plaque Index¹⁴

Quigley and Hein reported a plaque measurement that focused on the gingival third of the tooth surface. They examined only the facial surfaces of the anterior teeth, using a basic fuchsin mouthwash as a disclosing agent and numerical scoring system from 0 to 5. Turesky and colleagues¹⁴ strengthened the objectivity of the Quigley-Hein criteria by redefining the scores of the gingival third area. Plaque was assessed on both the facial and lingual surfaces of the teeth after using a disclosing agent.

Score Criteria

- | | |
|---|--|
| 0 | No plaque |
| 1 | Separate flecks of plaque at the cervical margin of the tooth |
| 2 | A thin, continuous band of plaque (up to 1 mm) at the cervical margin of the tooth |
| 3 | A band of plaque wider than 1 mm but covering less than one-third of the crown |
| 4 | Plaque covering at least one-third but less than two-thirds of the crown |

- | | |
|---|--|
| 5 | Plaque covering two-thirds or more of the clinical crown |
|---|--|

A plaque score per person was obtained by totaling the mean of the plaque scores of two surfaces (i.e., facial and lingual) of all the teeth and dividing by the number of teeth examined. This system of scoring plaque was relatively easy to use because of the objective definitions of each numerical score.

2. Papillary Bleeding: Mühlemann Papillary Bleeding Index (PBI)¹⁵

The PBI is based on bleeding following gentle probing of the interdental papilla. A blunt periodontal probe was carefully inserted into the base of the papilla on the mesial aspect and then moved coronally to the papilla tip. This procedure was performed on the distal aspect of the same papilla. The intensity of any bleeding provoked was recorded on a 0–4 scale.

Score Criteria

- | | |
|---|---|
| 0 | No bleeding after probing |
| 1 | A single discrete bleeding point appears after probing |
| 2 | Several isolated bleeding points or a single fine line of blood appears |
| 3 | The interdental triangle fills with blood shortly after probing |
| 4 | Profuse bleeding occurs after probing; blood flows immediately into the marginal sulcus |

Calculations

Each papilla was scored according to the above criteria. The sum of all scores was divided by the number of papillae examined to obtain a PBI score.

3. Papilla Contour Measurements

The loss of interdental papillary height was classified using the Nordland and Tarnow classification.¹⁶ This classification is based on anatomic landmarks: interdental contact point, facial apical extent of the cemento-enamel junction (CEJ), and interproximal coronal extent of the CEJ. There are four classes of papilla contour: (1) normal: interdental papilla fills the embrasure to the apical extent of the interdental contact point/area; (2) class I: The tip of the interdental papilla lies between the interdental contact point and the most coronal extent of the interproximal CEJ; (3) class II: The tip of interdental papilla lies at or apical to the interproximal CEJ but coronal to the



Figure 1. Preoperative view showing some level of papilla loss.



Figure 2. Vertical distance from the interproximal contact point to the superior surface of the gingival margin.



Figure 3. Measurement of the vertical distance from the contact point to the bone crest.



Figure 4. Measurement of the soft tissue height in the interdental area.

apical extent of the facial CEJ; and (4) class III: The tip of the interdental papilla lies level with or apical to the facial CEJ. All the patients had class I papillary height (Figure 1). The clinical parameters recorded for assessment of the results were vertical distance from the interproximal contact point to the superior surface of the gingival margin (Figure 2).

The vertical distance from the contact point to the bone crest (Figure 3) and soft tissue height in the interdental area (Figure 4) both were measured under local anesthesia. The horizontal distance at the gingival margin (Figure 5) and the width of the keratinized gingiva (WKG) were measured from the tip of the papilla to the mucogingival junction (Figure 6) and facial recession on adjacent teeth. All the measurements were recorded by the surgeon with the help of a Williams graduated periodontal probe (Hu-Friedy, number code PQ-W) at baseline and again six months following the surgery both clinically and by viewing photographs.

Surgical Procedure

Immediately prior to the surgical procedure, patients were instructed to rinse for 30 seconds



Figure 5. Measurement of the horizontal distance at the gingival margin.



Figure 6. Measurement of the width of the keratinized gingiva.

with a 0.2 percent chlorhexidine gluconate solution. The area subjected to surgery was anesthetized with either a nerve block or local infiltration anesthesia, depending on the surgical site, using local anesthetic solution 2 percent xylocaine with 1:1,00,000 epinephrine (Ligno-Ad Local Anaesthetic, Proxim Remedies, Vishal Dentocare Pvt. Ltd., India). A small, coronally curved incision was made facially between two incisors perpendicular to the outer gingival surface, aligned with the interdental space, approximately at the bone crest level or slightly apical and ending coronally at least 2 mm from the gingival margin, initially with a #15c blade and then continuing with an Orban's knife (Figure 7).

This incision was moved apically from the line angles of the tooth, so the lateral blood supply was not compromised. This incision included the entire buccolingual thickness of the interdental soft tissues without disrupting the lingual tissue surface, thus fully preserving the existing papilla. To release the gingivopapillary unit from the bone, a split-thickness flap was initiated using an Orban's knife through the semilunar incision on the buccal surface, extending toward the palatal/lingual surface. Care was taken to avoid perforation of the palatal/lingual tissue or damaging the interproximal papilla. Intrasulcular incisions were then made around the mesial and distal halves of the two adjacent teeth. After the incisions were made the soft tissue was completely released from the root and bone, and the whole flap became mobile, allowing coronal displacement of the papillary unit. A buccal/lingual void (dead space) could be seen between the soft tissue and the underlying bone structure (Figure 8).

To maintain the whole unit coronally, the dead space was filled with the connective tissue graft (see Harvesting the Connective Tissue Graft). A split thickness flap was then elevated buccally after giving two vertical releasing incisions on either side of the lateral incisors. The buccal portion of the flap was dissected well beyond the mucogingival line, leaving the periosteum and a thin layer of connective tissue on the bone. Care was taken not to perforate the flap to avoid compromising the blood supply. This procedure was carried out to promote the coronal advancement of the facial flap without any tension over the papillary structure.



Figure 7. View of the initial incision made between two incisors.



Figure 8. Coronally reflected interdental papilla and partial thickness buccal flap elevated with two vertical releasing incisions.

Harvesting the Connective Tissue Graft

A sterile template was utilized to obtain the desired dimensions and shape of the connective tissue graft from the premolar-molar area. The subepithelial connective tissue graft (SCTG) was harvested using the trap door technique (Figure 9).¹⁰ The harvested graft was then placed on a sterile gauze pad, irrigated with sterile saline, and modified as per the required dimensions after removal of excess fatty and glandular tissue (Figure 10). The primary flap on the donor site was returned to its original position and sutured with 3-0 MERSILK sutures (Ethicon, Johnson & Johnson, Dharavi, Mumbai, India) to obtain primary closure using an interrupted suturing technique or crossed horizontal suspension suturing technique.

Following reflection of the flap at the recipient site, the connective tissue graft obtained from the donor site was placed in position on the recipient site and sutured. The needle of a 5-0 resorbable suture entered the palatal tissue and was retrieved through the opening in the buccal surface. The

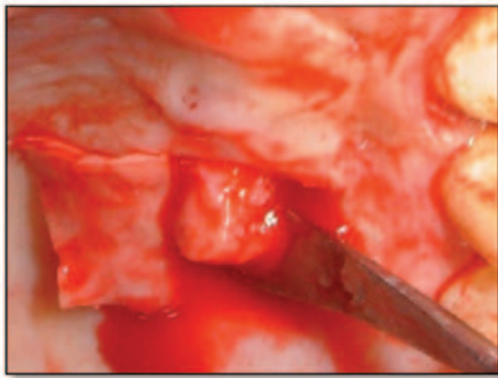


Figure 9. Harvesting of SCTG using the trap door technique.



Figure 10. Example of a harvested, trimmed, and shaped SCTG graft.



Figure 11. The SCTG was placed, stabilized, and sutured to fill the void between the soft tissue and underlying bone.



Figure 12. The flap was advanced coronally and sutured over the SCTG.

graft wedge was traversed parallel and the needle was inserted back through the prepared tunnel toward the palatal tissues that were entered at the same apicocoronal level as the suture entrance, but either mesially or distally. The palatal ends of the suture were delicately pulled, while the graft was placed in position atraumatically with the Orban knife. When this suture was tied on the palatal aspect, the graft was stabilized in the desired position. Thus, the graft filled the void between the coronally positioned papilla and the nonmobilized tissues, preventing flap collapse and papilla retraction (Figure 11). A coronally advanced flap (CAF) was used to completely cover the connective tissue graft. Suturing of the semilunar incision was initiated with 5-0 Vicryl sutures and primary closure was obtained with healing by first intention (Figure 12).

Slight pressure was applied to the area with saline-soaked gauze for approximately two minutes to adapt the soft tissue well to the tooth

surface and eliminate any space in which a clot might form and disrupt reattachment.

After surgery, the periodontal dressing was placed [COE-PACK™, GC America Inc., Alsip, IL, USA] on both the buccal and lingual aspects. The patients were given a nonsteroidal anti-inflammatory medication (Tab IBUGESIC, Ibuprofen + Paracetamol, t.d.s for five days) as well as antibiotic coverage consisting of amoxicillin 500 mg t.d.s prescribed for five days. Patients were instructed not to brush the teeth in the treated area. All patients were placed on 0.2 percent chlorhexidine gluconate mouthwash (Hexidine, ICPA, Mumbai, India) for one minute twice daily for four to six weeks.

One week following surgery, the periodontal pack was removed. The patients were recalled at one month and six months following their surgical treatment (Figure 13). Clinical measurements recorded preoperatively were repeated at the six-month postoperative visit.



Figure 13. Representative example of a patient six months after surgery.

Results

The patient demographics and location of the surgery are listed in Table 1. Three patients required surgical correction for total or partial lack of interdental papilla between the maxillary central incisors. The remaining two patients had defects between the mandibular central incisors that were treated with SCTG along with CAF (Table 1.) During the course of the study, wound healing was uneventful, and there were no postoperative complications in any patients. None of the selected patients dropped out before the termination of the study, and all the patients expressed satisfaction with the results.

All the selected patients had class I papillary height at baseline. The mean vertical distance from the contact point to the gingival margin was 3.2 ± 0.44 mm (range 3–4 mm) at baseline and 0.4 ± 0.54 mm (range 0–1 mm) at the visit six months after surgery, with a mean reduction of 2.6 ± 0.54 mm. The mean distance from the tip of the papilla to the alveolar crest (soft tissue height in the interdental area) was 3.2 ± 0.44 mm (range 3–4 mm) at baseline, which was increased to

5.8 ± 0.44 mm (range 5–6 mm) at six months after surgery, with a mean gain in papillary height of 2.6 ± 0.54 mm. The mean horizontal distance at the gingival margin was 2.6 ± 0.54 mm (range 2–3 mm) at baseline and 0.4 ± 0.54 mm (range 0–1 mm) at the six-month postoperative visit, with a mean reduction of 2.2 ± 1.09 mm. The mean width of the keratinized gingiva (WKG) was 6.4 ± 0.54 mm (range 6–7 mm) at baseline and 7.8 ± 0.83 mm (range 7–9 mm) at the six-month post-surgery appointment, with an increase in the mean WKG of 1.4 ± 0.89 mm at six months. There was no evidence of facial gingival recession noted on the adjacent teeth at baseline as well as at the six-month post-surgery follow-up appointment in any of the treated patients (Table 2.)

Discussion

Reduction or total loss of the interdental papilla may create esthetic impairments, create phonetic problems, and allow unwarranted food impaction. One of the most difficult and elusive goals for the periodontist in the esthetic aspect of periodontal therapy is the reconstruction of the interdental papilla. Periodontal plastic surgery enables enhanced esthetics in the anterior region where minor surgical procedures can improve gingival contours. One of the goals of periodontal plastic surgery is reconstruction of the lost interdental papilla;² however, this is one of the most challenging and least predictable of treatments. Most previous studies are case presentations containing little or no data regarding short- and long-term results with specific techniques.⁴ Also case reports presented in the literature report different clinical situations or reasons for papilla loss. This too may account for the variations of reported success (surgical correction) among techniques as well as reports using the same surgical technique.

Table 1. Patient's age, sex, and location of loss of papillary height.

Patient	Age	Sex	Quadrant
1	52	M	Between the maxillary central incisors
2	23	F	Between the mandibular central incisors
3	35	M	Between the maxillary central incisors
4	34	F	Between the maxillary central incisors
5	37	F	Between the mandibular central incisors
Mean±SD	36.2±10.37		

Table 2. Clinical measurements at baseline and at the visit six months after the surgery (Mean±SD and range in mm).

Parameters (at site)	At baseline	At 6 months	Differences
Vertical distance from the contact point to the gingival margin	3.2±0.44 (3–4)	0.4±0.54 (0–1)	(2.6±0.54)
Soft tissue (papilla) height in the interdental area	3.2±0.44 (3–4)	5.8±0.44 (5–6)	2.6±0.54
Horizontal distance at the gingival margin (base of the papilla)	2.6±0.54 (2–3)	0.4±0.54 (0–1)	(2.2±1.09)
Width of the keratinized gingiva	6.4±0.54 (6–7)	7.8±0.83 (7–9)	1.4±0.89
Facial recession on the adjacent teeth	0	0	—

In the present case report, five medically healthy and periodontally healthy patients presented with either a missing or partially missing (reduced) interdental papilla in the maxillary or mandibular anterior region. These five patients were treated surgically with a subepithelial connective tissue graft and a coronally advanced flap for interdental papilla reconstruction. All the patients had class I papillary height. All the adjacent clinical crowns had proper root angulations and proportional size, so there was no need for orthodontics or reshaping of the clinical crowns. The only alternative left to resolve the papillary defect between maxillary and mandibular central incisors was surgical reconstruction of the papilla.

Each patient who participated in the study demonstrated good oral hygiene and exhibited a healthy clinical gingival condition throughout the duration of the study. The plaque index (PI) and papillary bleeding index (PBI) scores both remained low during the study period (<1). It has been shown that clinical outcomes of various forms of surgical interventions are influenced by general level of oral hygiene.¹⁷

Tarnow et al¹⁸ reported that the distance from the bone crest to the contact point was positively related to the presence of an interdental papilla. When this distance was 5 mm or less, the entire papilla was always present. They found that as the distance increased to 6 mm, the papilla was

present 56 percent of the time. When the distance was 7 mm or greater, a papilla was present only 27 percent of the time or less. In the present study, vertical distance from the base of the contact area to the alveolar crest was 6.2±0.44 mm at baseline and remained the same at the six-month post-surgery follow-up evaluation appointment because only soft tissue was augmented without attempting bone regeneration.

Chang¹⁹ also evaluated the relationship of bone crest to the contact point distance on central papilla height using embrasure morphologies. He reported that the bone crest–contact point distance affects the central papilla height in narrow–long types of embrasures.

In the present study, the mean gain in papilla height was 2.6 mm with a decrease in width of 2.2 mm (horizontal distance). The mean width of the keratinized gingiva increased by 1.4 mm and with no facial gingival recession on adjacent teeth. Comparable findings have been reported in previous case report studies. Carnio²⁰ reported complete papillary reconstruction using an interposed subepithelial connective tissue graft in a case involving a 20-year-old woman with class IV gingival recession and a class III papillary loss between maxillary left central and lateral incisors. He performed a total of three surgical procedures, with identical protocols, in the same area at eight-week intervals.

In another case report, Azzi et al²¹ reported achieving predictable root coverage and papilla reconstruction of class IV recession associated with a loss of papilla using a connective tissue graft. The soft tissue margin of the papilla was 5 mm higher incisally at 18 months post surgery than it was preoperatively. This represented a 5 mm gain out of 10 mm of interdental attachment loss; however, 1 mm of residual gingival recession was still present.

In cases involving class II and class III papillae, the height of the interdental soft tissue (papilla) is not sufficient to provide an adequate vascular supply to a graft. As a result the predictability of the outcome is questionable. Also, this type of clinical situation may require multiple surgical procedures to achieve complete papillary reconstruction.

Nemcovsky²² evaluated the use of a coronally advanced papillary flap in combination with a gingival graft to augment soft tissue in the interdental area in a total of 10 patients. He reported achieving an increase in papilla height in eight patients with no change in two patients due to root proximity and recurrence of a pyogenic granuloma. Post-operative necrosis occurred where the interdental space was very narrow. The interdental tissues had only a small amount of connective tissue and the blood supply was largely reduced. In the present study, one positive aspect of having a large interproximal area is the improved blood supply from the flap to the graft.

In a case report by Pinto et al,²³ two cases were described where the clinical application of the coronally advanced flap procedure associated with the SCTG in the reconstruction of interdental papilla yielded satisfactory esthetics.

Both the maximized blood supply and the maintenance of papillary integrity by the flap design are essential to avoid flap necrosis and to enhance the grafted tissue “take.” It is important to note that harvesting of the graft was performed just before the surgical detachment of the papilla to prevent the development of a blood clot between the bone and grafted tissue. Blood clots, even small ones, might compromise immediate blood supply to the graft and therefore induce partial necrosis of the transplanted tissue.²⁰

This case report describes the association of SCTG and CAF for the treatment of a missing

papilla. The success of the procedure used in the present study could be due to the fact that the subepithelial connective tissue graft was supported by the coronally advanced flap and the space between the bone and CAF was completely filled with connective tissue, which is perfectly stabilized with the aid of simple and tension-free suturing. Since the graft receives nourishment from all directions, the flow of plasma and the in-growth of capillaries from surrounding tissues can be achieved. This technique was performed to improve blood supply and provide flap support. An adequate blood supply is a very important element for a successful outcome with this technique. This increase in vascularization may be one reason for the clinical improvements and excellent esthetic results. These factors, as well as the meticulous and careful management of the soft tissues, are important surgical considerations to achieve both a predictable and a successful surgical outcome.

Before any periodontal plastic surgery is performed, the dental professional should select the most appropriate technique for each defect to ensure that the patient’s individual needs and complaints are addressed and to achieve the best esthetic and functional results. The selection of one procedure rather than another depends on a variety of factors, such as the size of the defect (length and width), the width of the keratinized tissue (to allow flap advancement), the amount of connective tissue available from the donor site, patient exposure to risk factors known to influence host response (e.g., smoking), mucogingival phenotypes, and operator experience.²⁴⁻²⁷

Conclusion

From the analysis of the results of the cases reported, and within the limitations of this case report, it was concluded that clinical success in a period of six months using a subepithelial connective tissue graft with a coronally advanced flap offers a reliable solution for reconstruction of lost or reduced interdental papillae. Certainly, patient selection is important, as the broad interdental width minimizes tissue trauma and vascular embarrassment during surgery. However, a clinical study with a large sample size and longer-term clinical follow-up are necessary before the predictability of this technique can be established.

Clinical Significance

A subepithelial connective tissue graft supported by a coronally advanced flap should be considered to surgically correct the loss of an interdental papilla in class I cases.

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