



CONVENTIONAL PAPILLA PRESERVATION FLAP: A CASE REPORT

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ABSTRACT:

Periodontal therapy is indicated in cases where there is a destruction of the periodontal ligament, the root cementum and the alveolar bone primarily caused by the bacteria found in the dental plaque. An ideal periodontal therapy aims to reduce pocket probing depth and gain in clinical attachment level. Conventional periodontal therapy results in attaining the above entities and reduces the inflammation but often results in gingival recession and the integrity of the papilla is usually not preserved. Hence, papilla preservation flaps were introduced, as it minimizes the post operative recession and preserves the integrity of the papilla. In this case report, conventional papilla preservation technique was done.

KEYWORDS:

Papilla preservation flap, Modified papilla preservation technique, Simplified papilla preservation technique, Minimally invasive surgical techniques.

INTRODUCTION

Periodontal therapy is indicated in cases where there is a destruction of the periodontal ligament, the root cementum and the alveolar bone primarily caused by the bacteria found in dental plaque. An ideal periodontal therapy aims to reduce pocket probing depth and gain in clinical attachment level. Conventional periodontal therapy results in attaining the above entities and reduces the inflammation but often results in gingival recession and the integrity of the papilla is usually not preserved. This leads to unesthetic appearance, when involving the maxillary dentition.

Hence, Minimally invasive surgical techniques such as papilla preservation flaps were introduced to overcome these disadvantages. It spares the papilla, instead of splitting it. Thereby preserving its integrity and minimizes the post operative recession. This technique also ensures optimal interproximal coverage and facilitates placement and retention of bone grafts which prevents exfoliation of the graft material¹. Also, to obtain primary closure of flap and to preserve interdental soft tissues for maximum soft tissue coverage.

Takei et al (1985) introduced the conventional papilla preservation technique. Cortellini et al (1995) later modified the papilla preservation technique to modified papilla preservation flap and Simplified papilla preservation flap (1999).²

The conventional papilla preservation technique and modified papilla preservation is considered in cases of wider interdental spaces (>2 mm). The simplified papilla preservation is considered in cases of narrow interdental spaces (<2 mm).

The conventional papilla preservation technique involves sulcular incisions in the labial aspect and in the palatal aspect, semilunar incisions were also given (5 mm from the gingival margin) and the flap is reflected towards the labial aspect.

The modified papilla preservation involves primarily sulcular incisions given on the labial aspect with a horizontal incision at the base of the papilla. The two incisions are connected and flap is reflected towards the palatal aspect.

The simplified papilla preservation involves primarily sulcular incisions are given on the labial aspect but instead of horizontal incision, an oblique incision is given at the base of the papilla and the two incisions are connected and flap is reflected towards the palatal aspect.³

CASE REPORT

A 52 year old, female patient, came to the department of periodontics with mobile tooth in the upper front tooth region since 6 months. The patient was in good general health with no known allergies. Intraoral examination revealed, Grade 1 mobility with respect to 11 and 21, generalized periodontal pockets with pocket probing depth of more than 9 mm (Fig. 1a, 1b, 1c and 1d) which bled upon probing and presence of wider interdental spacing (> 2mm) between 11 and 21. Granuloma was present with respect to 21. The radiograph revealed horizontal bone loss. Based on the clinical and radiographic data, patient was diagnosed to have chronic generalized periodontitis.



Fig 1a: PPD > 9 mm wrt 21



Fig 1b: PPD: 9 mm wrt 13



Fig 1c: PPD > 9 mm wrt 21

On the first visit, scaling and root planing was done and oral hygiene instructions were given to the patient. After two weeks, re-evaluation was done and the areas were re-assessed for gingival health, mobility and pocket probing depths, which indicated a need for surgical intervention. Hence, Conventional papilla preservation technique was the ideal treatment with respect to 11,12,13,21 and as there was an interdental spacing between the upper central incisors. Patient was informed about the following treatment and she gave her consent for the surgical procedure.

SURGICAL PROCEDURE

Adequate anaesthesia using 2% lignocaine with a concentration of 1:200000 epinephrine was obtained. Using 15 # blade, incisions were given (Figure 2). On the labial aspect, Sulcular incisions were given with respect to 13,12,11 and 21 and no incisions were made on the interdental papilla between 11 and 21. On the palatal aspect, sulcular incisions were given in relation to 11 and 21 along with semilunar incision made 4-5 mm apical to the tip of the interdental papilla (Figure 3)



Fig 2: Incision using 15 # blade



Fig 3: Semilunar incision

In relation to 11 and 21, the incisions are connected and the flap is reflected on the labial aspect. (Fig 4a, 4b) In relation to rest of the anterior teeth, the flap was reflected only on the labial aspect with a periosteal elevator with no palatal incisions.

Granuloma present with respect to 21 was curetted and thorough irrigation was done. The underside of the reflected flap was scraped and trimmed to remove pocket epithelium and granulation tissue. The defect was debrided with curettes and thorough scaling and root planing was performed.⁴



Fig 4a and 4b: Flap reflection with intact papilla.

The intrabony defects were present with respect to 13,12 and 11,21 and bone graft was placed {Osseograft (DBBM- Xenograft)} and the flaps were sutured by simple interrupted sutures using 4-0 silk sutures and the flap containing the papilla was brought to contact well with the incision line on the palatal aspect and simple interrupted sutures using 4-0 vicryl sutures were placed.



Fig 5a, 5b: Bone graft placement and sutured flaps

POST-OPERATIVE INSTRUCTIONS

Patient was instructed to refrain from eating or drinking hot fluids and to rinse with 0.2% chlorhexidine twice a day for two weeks. Sutures were removed two week postoperatively. The healing was uneventful. Patient was advised to initiate mechanical oral hygiene from the second post operative week. On one week re – evaluation, sutures were removed and betadine irrigation was done. The healing was uneventful and the patient was called the following week. On 2nd week re – evaluation, papilla closure was seen with slight reddish pink colour in the area of papilla closure (Figure 6a, 6b). On 2nd month re- evaluation, the granuloma present with respect to 11 had completely healed. There was a complete pinkish colour in the area of papilla closure and complete healing was observed. (Fig 7 a,7 b).



Fig 6 a, 6 b: 2 week re- evaluation



Fig 7 a, 7 b: 3 month re- evaluation

DISCUSSION

Though conventional periodontal therapy, results in reduction of pocket depth, promoting periodontal health and corrects anatomic defects, it often leads to recession and is unable to preserve the interdental tissue in cases of interdental spacing⁵. Hence to overcome these limitations of conventional surgical therapy, papilla preservation flap techniques are used.

Limitations of papilla preservation technique is that it is time consuming, technique sensitive and granulation tissue removal from the interdental papilla is quite difficult.⁷

The tongue is in constant contact with the sutures, when the sutures are placed in the palatal region thereby causing constant irritation and the sutures tend to come out.⁸

The present case report aimed at conventional papilla preservation technique in the anterior maxillary teeth to attain reduction of pocket depth and an aesthetically pleasing outcome. The pockets were probed at 6 months which revealed significant reduction in the pocket depth and minimal gingival recession. The papilla closure was complete and the healing was satisfactory.

CONCLUSION

The clinician should not overlook the aesthetic importance of the interdental papilla and proper measures should be initiated with respect to the same in order to optimize clinical results. Gingival aesthetics is receiving greater attention as a result of patients growing need for aesthetics. Absolutely, non-surgical approaches are often preferred in the maxillary anterior region due to their minimally invasive nature and ability to preserve natural tooth structure. However, there are situations where a surgical approach becomes necessary despite the preference for non-surgical methods.¹⁰

The papilla preservation maintains aesthetics and offers an improved technique for interproximal regenerative procedures. With the introduction of new biomaterials, minimally invasive surgical techniques (MISTs) have been proposed for the regenerative treatment of deep intrabony defects and their effectiveness has increased over time with the use of papilla preservation approaches. Minimally invasive surgeries helps in handling hard and soft tissues gently during periodontal surgery. Incisions were aimed at conserving the soft tissue as much as possible.⁹

Simplified PPF is used for teeth with narrow interdental spaces (< 2 mm) and modified PPF is used for teeth with wide interdental spaces (> 2 mm). The article leads us to the conclusion that aesthetics has a bigger influence and that, in order to improve treatment outcomes, physicians should consider their patients preferences. Additionally, it is crucial that dentists educate the public and their patients about oral health.

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