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CASE REPORT

THE PAPILLA PRESERVATION FLAP: A CASE REPORT

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ABSTRACT

Periodontal regenerative surgery aims at the recovery of lost tissues which further might lead to compromised esthetics, disturbed phonetics, and unpleasant appearance especially where aesthetic zone is the area of interest. Papilla preservation flap (Takei 1985) allows maintenance of intact interdental papilla in contrast to papilla splitting techniques. This case report aims towards assessment of papilla preservation flap in the treatment of a 27 year old female with generalized chronic moderate periodontitis leading to pathological migration in anterior esthetic zone, with 9 months follow-up.

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INTRODUCTION

Periodontal surgery aims at the recovery of lost tissues, which further might lead to compromised esthetics, disturbed phonetics, unpleasant appearance especially where aesthetic zone is the area of interest. An ideal periodontal therapy must confer to treat the dentition keeping the esthetic appearance in mind and this can only be done when the papillary integrity is preserved. However in certain cases where surgical therapy is unavoidable, splitting the papilla leads to its shrinkage and decrease in the height of interdental papilla exposing the interproximal embrasures. To overcome such complications "Papilla Preservation Flap" technique was advocated. Various reports in the previous years have been advocated highlighting the effectiveness of the procedure. Several surgical protocols are available to obtain primary flap closure and preserve interdental tissue such as Conventional papilla preservation technique (Takei *et al.,* 1985), Modified papilla preservation technique (Cortellini *et al.,* 1995), Simplified papilla preservation flap (Cortellini *et al.,* 1996), Whale's tail technique (Bianchi and Basseti, 2009). The first report of papilla preservation reported by Kromer in 1956 for implant therapy[5] followed by various other authors like Intact Papilla flap by APP in 1973 retaining interdental gingiva in buccal flap (Checchi *et al.,* 2009; Evian *et al.* 1973), Genon and Bender 1984. Takei *et al.* (1985) introduced detailed version of the procedure and named it as Papilla Preservation Flap ensuring optimal interproximal coverage, facilitated placement and retention of bone graft (Corn and Rosenberg, 1985). This method includes a) sulcular incisions around each tooth with no incision on the facial aspect of interdental papilla b) sulcular incision on the lingual/palatal aspect of each tooth c) semilunar incision along the interdental papilla at least 5 mm away from gingival margin d) intact elevation of the interdental tissues from the palatal aspect with the facial flap.

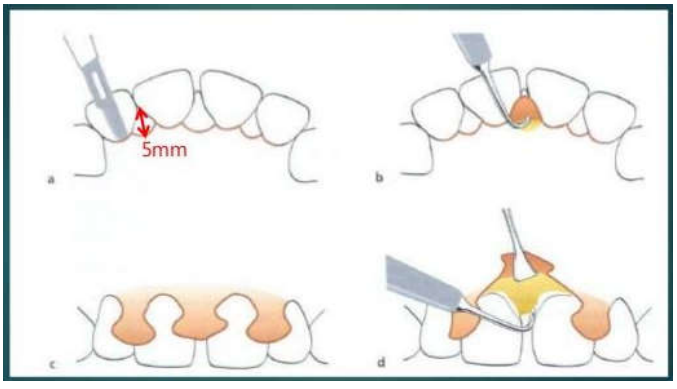

Fig. 1. Diagrammatic representation of papilla preservation flap

However the presence of ample embrasure with the absence of tight contact point stands as a pre-requisite to retain interdental tissue[5]. This case report presents the case of a 27 year old female patient with generalized chronic moderate periodontitis with diastema in maxillary anterior teeth.

MATERIALS AND METHODS

Case presentation: A 27 year old female patient reported in Department of periodontics and Oral Implantology in Santosh

Dental College and hospital Ghaziabad, with the chief complaint increased spacing of teeth in past one year with bleeding gums while brushing and generalized sensitivity to hot and cold since 4-5 months. Patient was otherwise clinically healthy with non-contributory medical history. On extra oral examination face was found to be bilaterally symmetrical, lymph nodes were non- palpable, Temporo-mandibular joint was normal with no clicking sound or deviation while opening or closing mouth. Intra-oral examination revealed bleeding on probing, moderate inflammation was also seen. Probing depth>5 mm (Fig 2) in the maxillary anterior region leading to pathological migration of the same. Oral prophylaxis was done, Plaque index (Loe and Silness, 1963) and gingival index (Sanivarka *et al.,* 2010), Pocket Probing Depth (Mohamed *et al.,* 2014) and CAL (clinical attachment loss) were recorded and re-evaluated after two weeks. Requirements for this case, arches, both an IOPR (Intra Oral Periapical Radiograph) and OPG (Ortho-Pantomo Gram) were recorded followed by blood investigations. Based on all the clinical findings papilla preservation flap surgery was the treatment of choice as the affected dentition showed wide interdental spacing with a broad inter-proximal gingival zone. Adequate local anesthesia with a concentration of 1:20,000 epinephrine was administered. In order to prepare the facial surface of the affected teeth, sulcular incisions were given around the maxillary anterior teeth without splitting the interdental papilla (Fig 3).

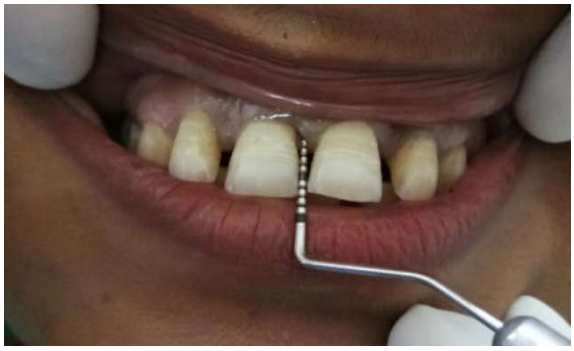

Fig. 2. Pre-operative photograph showing presence of periodontal pocket

The palatal flap design consisted of semilunar incision made across the interdental papilla in relation to teeth extending from 13 to 23. The semi lunar incision's on the palatal aspect were made at least 5mm away from the gingival margin such that it dipped apically from the line angles of the tooth, facilitating separation and elevation of intact facial flap from the palatal aspect (Fig 4).

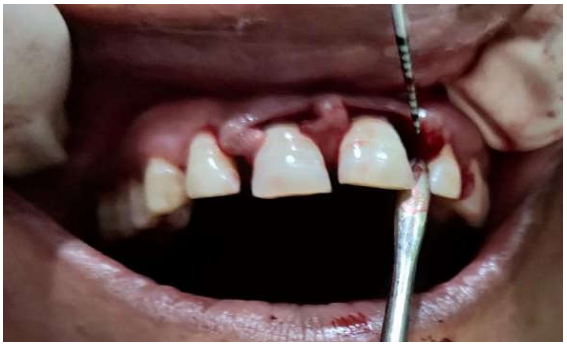

Fig. 4 .Papilla incorporated in facial flap

After the incision's being made, the flap was reflected and freed from the underlying bone followed by detachment of interdental tissue through the wide embrasure with the help of a periosteal elevator leaving the papilla intact (Fig 5).

Fig. 5. Flap Reflection

The reflected flap was scraped and trimmed in order to remove sulcus epithelium and granulation tissue, curettage followed by scaling and root planning to debride the flap (Fig 6).

Fig 6. Flap after debridement

The thickness of interdental tissue was maintained in order to maintain adequate blood supply and minimize the chances of post-operative gingival recession. The facial flap preserving the papilla was approximated with the palatal semilunar incision line and secured with direct suture. At one day post-operative patient didn't presented any sign of extra-oral swelling, paresthesia etc. and was instructed to rinse with 0.2% chlorhexidine mouthwash for two weeks at least two times a day. Brushing was initiated after a week of periodontal flap surgery followed by supportive periodontal therapy every month with re-enforcement of oral hygiene practices. The patient was followed up for 9 months duration.

RESULTS

No signs of inflammation were reported, with an optimum oral hygiene maintained by the Patient. Pocket Probing depth 3,6 and 9 months post-surgery was evaluated, and was found to be reduced to the level of normal sulcus depth i.e. 2-3 mm (Fig7).

Fig 7. Post operative at 3 months

DISCUSSION

In order to meet the expectations of patient, esthetics always pose therapeutic dilemmas when it comes to the selection of a proper surgical technique in the maxillary anterior region that helps prevent or minimize esthetic problems such as loss of interdental papilla etc. without compromising the main goal of periodontal surgery. Treatment in the esthetic zone, claim a flap method that preserves the anatomy of the gingival margin with optimal function ensuing desirable esthetics. The flap design epitomizes a very imperative parameter in any surgical procedure to achieve stability of the marginal tissue and optimal revascularization during early wound healing to promote stable wound closure. Thus, flap design plays a very important role in the accomplishment of the therapy. Observations by Chako *et al.* 2013 speculated that soft tissue craters did not develop in the area where papilla was spared. In accordance to various studies and aiming towards reduction of periodontal pockets and desirable esthetics, the present case utilized papilla preservation flap in the maxillary anterior dentition w.r.t teeth 13 to 23. During the course of treatment the gingival status exhibited health with interdental papilla being pyramidal in shape with no signs of inflammation or gingival bleeding. The pockets were probed at 3, 6 and 9 months which revealed significant reduction in pocket depth (Residual probing depth 2mm) (Fig 7). Therefore it is essential to appreciate and realize that preservation of papilla plays a fundamental role fulfilling not only the aesthetic concerns and phonetic functionalities of the patients but is also an integral biological barrier that helps protect the attachment apparatus. In cases where regenerative therapy is required Simplied papilla preservation flap can offer better esthetic results (Cortellini *et al.,* 1993).

Conclusion

Notwithstanding the limits of a case report, the present study shows a specific surgical technique in the correction / preserving a periodontal defect while respecting the papillary integrity as an important aspect of the procedure, which not only helps maintain the esthetic value but also stands as a better approach for regenerative procedures with wide interproximal contacts.

Conflict of interest: the author reports no conflict of interest related to this case report.

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