Operculum from Erupting Third Molar: An Alternative Donor Site for an Epithelialised-Free Soft-Tissue Autograft

Dr. Harish Kumar Shah,[1] Dr. Sajeev Shrestha,[1] Dr. Shivalal Sharma,[1] Dr. Pujan Acharya[1]

[1]*Department of Periodontology and Oral Implantology, College of Dental Surgery, BP Koirala Institute of Health Sciences, Dharan, Nepal.*

ABSTRACT

Gingival augmentation technique is used to increase the thickness of attached gingiva and arresting the progress of recession. Autogenous epithelialised free gingival graft obtained from palate is a well-established periodontal plastic procedure for root coverage and increasing the width of attached gingiva. This case report shows augmentation of attached gingiva from operculum of erupting third molar as an alternative donor site in marginal tissue recession not extending beyond the mucogingival junction with soft and hard tissue loss interdentally of 31 and 41 in a 20-year-old female.

Keywords: Attached gingiva; epithelialised free gingival graft; operculum.

INTRODUCTION

Attached gingiva aids in increasing resistance to external injury and contributing to stabilisation of gingival margin.[1] Increasing attached gingiva should be strongly considered where patient's plaque control is compromised and connective tissue graft are common surgical procedures used for augmenting zone of attached gingiva predictably.[2] Problems related to attached gingiva and aesthetics can be managed effectively with proper treatment plan and correct surgical technique.[3] Use of operculum of erupting third molar to augment attached gingiva is predictable.[4] However, adequate evidence is not present. Objective of this case was to evaluate operculum as an alternative donor site to augment attached gingiva.

CASE REPORT

A 20-year-old female reported to Department of Periodontology and Oral Implantology, College of Dental Surgery, BP Koirala Institute of Health Sciences with a chief complaint of receding lower front gums for 6 months. Medical history was non-contributory. Clinical examination revealed an aberrant lower labial frenum with tension test positive with marginal tissue recession not extending beyond the mucogingival junction (MGJ) with a soft tissue loss interdentally of 31 and 41 and erupting 48 covered with the operculum. Radiographic examination revealed loss of interdental bone of 31 and 41 (Figure 1a).

Miller' classification has become very popular and widely used.[7] Recently, some criticisms to this classification were reported as the difficult differential diagnosis among different groups.[5] The cases, which have inter-proximal bone loss and the marginal tissue recession that does not extend to MGJ cannot be classified either in Class I because of inter-proximal bone or in Class III because the gingival margin does not extend to MGJ.[5,8] Mucogingival deformities and conditions around teeth-gingival recession (Recession Type 2 proposed by Cairo et al.) with aberrant frenum diagnosis was made.[5,6] After diagnosis, the patient was informed about the importance of attached gingiva to prevent further

Figure 1a: Gingival recession.

Figure 1b: Operculum of 48.

Figure 1c: IOPAR.

Correspondence:

Dr. Harish Kumar Shah

Department of Periodontology and Oral Implantology, College of Dental Surgery, BP Koirala Institute of Health Sciences, Dharan, Nepal.

email: harishshah46@yahoo.com

Citation

Shah HK, Shrestha S, Sharma S, Acharya P. Operculum from Erupting Third Molar: An Alternative Donor Site for an Epithelialised-Free-Soft-Tissue Autograft. J Nepal Soc Perio Oral Implantol. 2019;3(6):75-7.

Figure 2a: Recipient site.

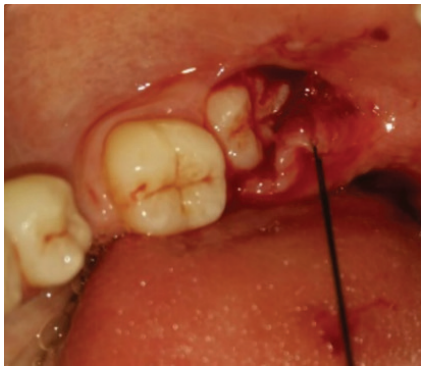

Figure 2b: Operculum detachment.

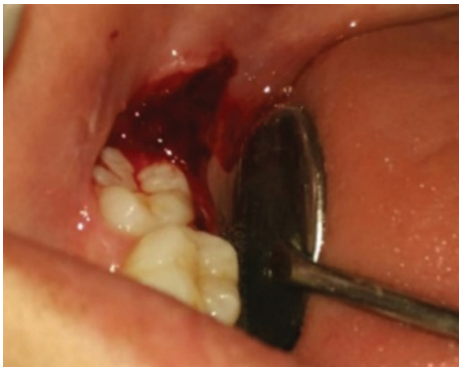

Figure 2c: After operculectomy.

recession. The patient was counselled regarding various treatment options among which she preferred to go for simultaneous frenectomy and augmentation of attached gingiva of 31 and 41 with soft tissue graft obtained from operculum.

Treatment began with non-surgical phase. After scaling and root planing, the patient was advised to maintain meticulous plaque control. Six weeks after phase I therapy, as plaque control was good, the surgical phase was initiated. The treatment plan to perform frenotomy along with augmentation of attached gingiva with a free soft tissue autograft from operculum was made.

Written informed consent was taken after explaining the nature of procedure. Proper extraoral asepsis with 2% povidone-iodine was followed by intraoral preprocedural 0.2% chlorhexidine rinses and then adequate local anaesthesia was administered. Relocation of frenum was done with frenotomy by giving the incision deep in the vestibule. Recipient bed was prepared by performing horizontal incisions in the interdental papilla in relation to 32, 31, 41 and 42. Vertical incisions were made along the mesial proximal line angle of 32 to mesial proximal line angle of 42 beyond the mucogingival junction and de-epithelialisation was done to place donor tissue against it (Figure 2a).

Donor tissue was obtained from erupting 48 by giving incision 2 mm apical from occlusal surface of 38, starting from the mid-buccal aspect, distal and ending at mesio-lingual aspect of 38 and graft was detached from mesio-buccal side with 15 number Bard-Parker blade from the inside of sulcus until it was detached completely from it (Figure 2b, 2c). Approximately 8 mm x 14 mm size of soft tissue graft was obtained (Figure 3a). After obtaining soft tissue graft the inner sulcular layer was de-epithelialised. The trimmed graft was transferred to a prepared bed such that connective tissue surface faced the prepared bed and secured against recipient side by placing interrupted, horizontal matrix and vertical matrix sling suture (Figure 3b). The patient's lower lip was moved in all possible directions to ensure the graft stability against lip movement. The recipient bed was covered by Coe-Pak (Figure 3c). The patient was given analgesics (Ibuprofen 400 mg every 8 hours for 3 days and 0.2% chlorhexidine gluconate rinse every 12 hours for 14 days. Postoperative written instructions were given. Sutures were removed on seventh day after the site was carefully debrided with 0.2% chlorhexidine rinses.

Healing was uneventful at the donor site as well as recipient site. The patient was instructed to continue chlorhexidine rinses with no brushing or flossing at the surgical site for further one week. After three weeks, the patient was

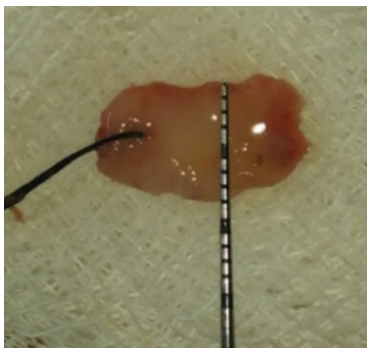

Figure 3a: Graft.

Figure 3b: After suturing.

Figure 3c: After Coe-Pak.

Figure 4a: Healing after six months at 48 and recipient site of 31 and 41.

advised to brush gently with a soft toothbrush by using a rolling stroke coronally. By six months, excellent healing and colour match was noted (Figure 4a and 4b). The gain in keratinised tissue height, as well as increased tissue thickness and apical displacement of the frenum attachment was observed. The patient was completely satisfied with the result obtained.

DISCUSSION

Attached gingiva is a part of keratinised gingiva which aids in periodontium in increasing resistance to external injury and thus contributing in the stabilisation of gingival margin against frictional forces and also aids in dissipating physiological forces exerted by the muscular fibers of the alveolar mucosa on the gingival tissues.[1] Increasing attached gingiva should be strongly considered in cases where the patient's plaque control is compromised and connective tissue graft are the most common surgical procedures used for augmenting the zone of attached gingiva effectively and predictably.[2] The problems related to attached gingiva and aesthetic concern can be managed effectively if proper treatment plan and correct surgical technique are executed.[3] The use of operculum of erupting third molar as an alternative harvesting site in younger patients to augment attached gingiva is predictable.[4] However, so far, the adequate evidence is not present for the use of operculum to augment attached gingiva to prevent the gingival recession.

The advantages to using the gingival operculum from an erupting molar as an autograft are: it avoids the palate as a donor site; it decreases postoperative morbidity related to surgical trauma; and risk of incising greater palatine artery in case of shallow palatal vaults.[4] It also allows for more rapid healing at the donor site, as the tissue covering the erupting tooth does not need to be recovered. It has a better colour match and aesthetic improvement than palatal highly keratinised mucosa as it is gingival tissue. The other advantages of this technique are ease of harvest and exposure of erupting third molar for oral hygiene maintenance. The patient was happy with this treatment as augmentation of attached gingiva and exposure of third molar for oral hygiene maintenance was done simultaneously. It may act as one of the predictable options where possible to use operculum from erupting third molar for augmentation of gingiva and root coverage.

Conflict of Interest: None.

REFERENCES

1. Malathi K, Singh A, Rajula MPB, Sabale D. Attached Gingiva: A Review. Int J Sci Res Rev. 2013;3(2):188-98.
2. Oh SL. Attached gingiva: histology and surgical augmentation. Gen Dent. 2009;57(4):381-5.
3. Shah HK, Chaudhary SK, Goel K, Shrestha S. Management of Multiple Recession simultaneously with Modified Coronally Advanced Flap. J Nepal Soc Perio Oral Implantol. 2017;1(2):81-3.
4. Harrison JS, Conlan MJ, Deas DE. An Alternative Donor Site for an Epithelialized-Free Soft-Tissue Autograft. Compend Contin Educ Dent. 2011 Mar;32(2): e29-31.
5. Cairo F, Nieri M, Cincinelli S, Mervelt J, Pagliaro U. The interproximal clinical attachment level to classify gingival recessions and predict root coverage outcomes: an explorative and reliability study. J Clin Periodontol. 2011 Jul;38(7):661-6.
6. Cortellini P, Bissada NF. Mucogingival conditions in the natural dentition: Narrative review, case definitions, and diagnostic considerations. J Clin Periodontol. 2018;45:S190-8.
7. Miller PD Jr. A classification of marginal tissue recession. Int J Periodontics Restorative Dent. 1985;5(2):8-13.
8. Kumar A, Masamatti SS. A new classification system for gingival and palatal recession. J Indian Soc Periodontol. 2013;17(2):175-81.