BOULE THE BICHAT’ S Fat FOR ROOT COVERAGE IN SEVERE GINGIVAL RECESSION: A SHORT CASE REPORT

1Saravanan Pushparajan, 2*C. Burnice Nalina Kumari, 3Pradeep Devadoss, 4T.Ramakrishnan, 5R. Vijayalakshmi

1Department of Periodontology, Lincoln University, Malaysia
2Department of Periodontology and Implantology, 3Department of Oral and Maxillofacial Surgery, 4Principal
2-5Faculty of Dentistry, Meenakshi Academy of Higher Education and Research, Chennai. Tamilnadu, India.
*Corresponding author E-Mail: drburnice.perio@madch.edu.in

ABSTRACT: Gingival recession has anatomical, physiologic, or pathological causative factors apart from a 17% lack of etiology. Although surgical techniques are available in plenty for the root coverage procedures, choice of technique often influences successful outcome. Buccal pad of fat for root coverage (a specialized adipose and well-vascularized tissue) is a nuovo not yet popular technique for regenerative procedures as root coverage in severe recession defects, especially in the maxillary posterior region of the oral cavity. In this case report root coverage procedure using pedicled buccal pad of fat in Miller’s Class III recession on the maxillary posterior teeth is performed.

Key Words: Gingival recession, Buccal pad of fat, Root coverage

INTRODUCTION

The apical migration of the peripheral gingiva from the cemento-enamel junction is the gingival recession (CEJ). A typical phenomenon is gingival recession, which is more common as age rises. This often results in root exposure and attachment loss, leading to hypersensitivity (thermal hypersensitivity), difficult plaque control, root caries, cervical abrasions and diminished cosmetic appeal and aesthetic problems. Miller classified of gingival recession into four different classes depending on the extent of migration of gingival tissue recessions have numerous etiology. Various treatment modalities for gingival recession include gingival grafts, pedicled grafts with or without the use of guided tissue regeneration materials and with the help of orthodontic therapy. There is a thick fat encapsulated layer called Buccal pad of fat (Bichat's fat pad, BFP) between the buccinator muscle and superficial muscles in the face. BFP can be differentiated into adipogenic, chondrogenic and osteogenic lineage of cells as it contains the stem cells. Hence when used as a pedicled graft the buccal pad of fat retains its high vascularity & ability to regenerate the lost attachment apparatus. This article reports on usage of pedicled buccal pad of fat for right maxillary posterior teeth with Miller’s class III gingival recession.
Objectives
This case report aims at using pedicled buccal pad of fat in the management of severe gingival recession defect and achieves regeneration.

CASE REPORT
A 45 year old man came to our dental department with complaints of sensitivity and food lodgment between his right upper back teeth for past few years. He had no relevant medical history and was a non-smoker. Clinical examination revealed Miller’s class III gingival recession in relation to his right maxillary molars with an attachment loss of 5 mm. Patient underwent pre –surgical evaluation (Fig 1) & preparation and accepted for the surgical procedure. Due informed consent was obtained after explanation of possible outcome & results.

Surgical Procedure
Local anesthesiology (2 percent Lignocaine Hcl with 1:200,000 epinephrines) was given at the donor site & recipient site. The elevation of a full-thickness mucoperiosteal flap above the mucogingival junction was followed by a crevicular incision to receive the buccal pad of fat in a single incision (Fig 2,3).
With the help of suction apparatus buccal pad of fat was procured (Fig 4,5) to the site [14-17] and sutured along with the flap covering the gingival recession with non absorbable silk 3-0 (Fig 6,7).

Care was taken that no tension be imparted to the sutured tissue. Periodontal dressing was placed & antibiotic & analgesics were prescribed post operatively. Patient was asked to report for routine follow up & avoid forceful mechanical oral hygiene measures at the surgical site immediately. Sutures were removed after 2 weeks (Fig 8). Oral mouth rinse (0.2% chlorhexidine) was advised during post
operative period. Post-operative healing was uneventful (Fig 9). At the end of 6 weeks, keratinized mucosa was formed at the anatomical site of the attached gingiva and BFP is completely epithelialized. Patient was evaluated clinically 6 months post operatively; the clinical attachment was found to be 3mm.

**Fig 8. 6 weeks post operative photograph**

**Fig 9. 6 months post operative photograph**

**DISCUSSION**

The cause of Gingival recession is either because of direct physical or mechanical effect on the gingiva or because of a fiery response in indirect way on the gingival tissues \[6\]. Signs for careful surgical procedures to treat such defects incorporate soft tissue aesthetics in localized area, to reduce sensitiveness, improving oral cleanliness that forestall further movement of the gingival margin \[7\].

Surgical techniques for the root coverage have indicated significant root coverage \[8\]. For the achievement of any periodontal plastic surgical procedure, there are different patient and tooth related components important to be evaluated before surgical procedure. The decision of procedure relies upon a few aspects, each having their own favorable circumstances and hindrances. The clinician ought to pick the less traumatic procedure appropriate for the patient. One surgical site is involved in pedicle grafts, while recession lesions are involved as the primary recipient site and the donor site (secondary site), which is typically the palatal tissue, in the free grafts \[9\]. In this procedure, the other major difference is that the grafted tissue derives its blood supply from the recipient site and not from its own donor location. Pedicle grafts are also not appropriate for thin gingival biotypes or in areas where gingival tissue is not keratinized \[9\]. It is necessary to suture the flap back to reach the full root coverage of 10 \[10\].

Poor prognosis is seen when Miller’s Class III and IV defects are treated with current techniques \[11\]. The current technique is unique when compared with other buccal pad of fat procedures \[10,11,13\] is that the single incision been used to procure the buccal pad fat for root coverage. The
buccal pad of fat is sought to be advantageous over other techniques for following reasons. The main advantages with this technique in the presence of BFP close to the recession area and its easy access to do the surgery especially for maxillary posteriors \[13,14\]. Patient discomfort and donor site morbidity are minimal. No loss of esthetics on usage of the pedicle from the cheek. This is specially organized which enhances the muscles of mastication \[15\]. The rich vascular supply of the pedicle graft ensures its vitality and resistance to infections in contrast to a free soft tissue grafts. The periodontal regeneration is enhanced in pedicled fat pad because of the presence of stem cells \[12\].

CONCLUSION
While this procedure looks promising for severe gingival recession, several research is needed to evaluate the long term success & success in comparison to traditional techniques for root coverage by the same technique.

REFERENCES
[1]. Kassab M M, Cohen R E. Treatment of gingival recession. J Am Dent Assoc2002; 133: 1499–1506.
[2]. Miller P D Jr. A classification of marginal tissue recession. Int J Periodontics Restorative Dent 1985; 5: 8–13.
[3]. Dersot JM, Moubarak N. Decision making in root coverage surgical techniques. Dental News 2005;1:8-12
[4]. T. Shiraishi,Y. Sumita, Y. Wakamastu,K. Nagai, and I. Asahina Formation of Engineered Bone with Adipose Stromal Cells from Buccal Fat Pad J DENT RESJune 2012 91: 592-597
[5]. Farré-Guasch E, Martí-Pagè C, Hernández-Alfaro F, Klein-Nulend J, Casals N.Buccal fat pad, an oral access source of human adipose stem cells with potential for osteochondral tissue engineering: an in vitro study..TissueEng Part C Methods. 2010 Oct;16(5):1083-94.PMID: 20078198
[6]. Patel M, Nixon, PJ and Chan MFW-Y. Gingival recession: part 1. Aetiology and non-Surgical management using pedicle grafts. British Dental Journal 2011; 211: 251 – 254
[7]. Saha S, Bateman G J. Mucogingival grafting procedures -an update. Dent Update2008; 35: 561-562, 565–568
[8]. Chambrone L, Sukekava F, Araujo M G et al. Root-coverage procedures for the treatment of localized recession-type defects: a Cochrane systematic review. J Periodontol2010; 81: 452–478.
[9]. Patel M, Nixon, PJ and Chan MFW-Y. Gingival recession: part 2. Surgical management using pedicle grafts. British Dental Journal 2011; 211: 315 – 319.
[10]. Pini Prato G, Pagliaro U, BaldiCet al. Coronally advanced flap procedure for root coverage. Flap with tension versus flap without tension: a randomized controlled clinical study. J Periodontol2000; 71: 188–201.
[11]. BurniceN.Kumari,RamakrishnanT,PamelaE,Pradeep D.A new technique for root coverage using buccal pad of fat-A short case report.Quintessence International 2010;41:547-549.
[12]. Pyo SW, Park JW, Lee IK, Kim CH. Differentiation of adult stem cell derived from buccal fat pad into osteoblast. J Korean Assoc Oral Maxillofac Surg. 2006;32:524–9.
[13]. An innovative technique for root coverage using pedicled buccal fat pad. Chitra Agarwal, G. V Gayathri, and Dhoom Singh Mehta.ContempClin Dent. 2014 Jul;5(3):386-8.
[14]. Pedicled Buccal fat pad graft for root coverage in severe gingival recession. Saurav Panda, Massimo Del Fabbro, Anurag Satpathy, Abhaya Chandra Das. J Indian SocPeriodontol. Mar- Apr 2016: 20 (2):216-9.

[15]. Clinical evaluation of Class II and Class III gingival recession defects of maxillary posterior teeth treated with buccal fat pad: A pilot study. D. Deepa and K. V. Arun Kumar. Dent Res J (Isfahan). 2018 Jan-Feb; 15(1): 11–16.