

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/jobcr

Original Article

Comparative study of nonabsorbable and absorbable barrier membranes in periodontal osseous defects by guided tissue regeneration

Shalini Kaushal^a, Avadhesh Kumar^{b,*}, M.A. Khan^c, Nand Lal^c^a Assoc. Prof., Dept. of Periodontology, Faculty of Dental Sciences, K.G. Medical University, Lucknow, UP, India^b Reader, Dept. of Periodontology, Career Post Graduate Institute of Dental Sciences & Hospital, Lucknow, UP, India^c Prof., Dept. of Periodontology, Faculty of Dental Sciences, K.G. Medical University, Lucknow, UP, India

ARTICLE INFO

Article history:

Received 15 October 2015

Accepted 5 December 2015

Available online 12 January 2016

Keywords:

Furcation

Barrier membrane

Guided tissue regeneration

ABSTRACT

Background: Periodontal invasion of furcation area in multirrooted teeth represents one of the most demanding therapeutic challenges in periodontics. Furcation therapy includes various treatment modalities like either maintenance or elimination of furcation or increased access to furcation area. Recent treatment modalities include regenerative procedures like placement of different type of bone grafts with nonabsorbable or absorbable barrier membranes, through guided tissue regeneration. This study compared the clinical efficacy of nonabsorbable barrier membrane with absorbable membrane when used with hydroxyapatite bone graft (G-Graft) in grade II buccal furcation defects in mandibular 1st molars.

Materials and methods: Fourteen subjects with bilateral grade II buccal furcation defects in lower 1st molars were selected and treated in a split-mouth design. After phase I therapy, molars were divided randomly into two groups for the treatment with either resorbable or nonresorbable membrane in conjunction with G-Graft in both groups.

Results: All the clinical parameters recorded showed statistically significant improvement in both the groups but no significant difference between two groups was observed.

Conclusion: Both nonabsorbable and absorbable barrier membranes were equally effective in treating grade II buccal furcation defects in lower molars when used in conjunction with G-Graft except with respect to horizontal bone fill in which absorbable barrier membrane showed better results.

© 2015 Craniofacial Research Foundation. Published by Elsevier B.V. All rights reserved.

* Corresponding author.

E-mail address: davadhesh_2007@yahoo.co.in (A. Kumar).<http://dx.doi.org/10.1016/j.jobcr.2015.12.001>

2212-4268/© 2015 Craniofacial Research Foundation. Published by Elsevier B.V. All rights reserved.

1. Introduction

Periodontitis is an inflammatory disease of the supporting tissues of the teeth caused by specific microorganisms or groups of specific microorganisms, resulting in progressive destruction of periodontal ligament and alveolar bone with pocket formation, recession or both. An ultimate goal of periodontal therapy is the regeneration of the lost tissue due to periodontal disease. Resective and regenerative surgeries are two approaches that can be used to eliminate periodontal defects. Invasion of the furcation of multirooted teeth is the most common reason for the early and frequent loss of molars. Therapy for the involved furcation includes scaling, root planing, conventional flap surgery, resective procedures, and regenerative procedures. Periodontal regeneration has become a viable treatment option utilizing the principles of guided tissue regeneration (GTR).¹ The use of GTR to treat human class II furcation defects was first reported by Gottlow et al. The principles of GTR are based on certain cells to repopulate the wound area to form a new attachment apparatus. Clinically, this is accomplished by placing barrier membrane over the defect thereby occluding gingival tissue and connective tissue from migrating towards the wound during healing.

Nyman et al.² first described the case of using non-resorbable Millipore filters in an effort to achieve new attachment. The first generation of GTR barriers were nonresorbable like cellulose acetate filters (Millipore filters), rubber dam, specifically processed expanded polytetrafluoroethylene^{3,4} and dense polytetrafluoroethylene (d-PTFE)⁵ and have to be removed in second surgical procedure. Resorbable barriers (second generation) have been introduced later on, changing GTR into a single-step procedure. Among bioresorbable membranes used are allogenic soft tissues, such as freeze dried skin and freeze dried duramater (FDDMA)⁶ and reconstituted collagen membranes.⁷

Pontoriero et al.⁸ presented the results of the first clinical study evaluating the effects of GTR in furcation involvement. Clinical experiences indicated that GTR has the best possibility of success in class II furcation involvement.

2. Materials and methods

The present study was conducted on fourteen subjects (9 males, 5 females) in the age group ranging from 19 to 65 years with bilateral grade II buccal furcation defects in lower 1st molars selected from the Outpatient Department of Periodontology, Faculty of Dental Sciences, King George's Medical University, Lucknow.

2.1. Selection criteria

Patients ranging between 19 and 65 years of age, with grade II buccal furcation defects in 1st lower molars who fulfilled the inclusion criteria were included in the study.

2.1.1. Inclusion criteria

1. Vertical probing depth (VPD) ≥ 4 mm.
2. Horizontal probing depth ≥ 4 mm.
3. Furcation entrance clinically not visible.

2.1.2. Exclusion criteria

1. Patients with history of systemic disease.
2. Smoking.
3. History of antibiotics 1 month prior to study.
4. History of periodontal therapy in the last 6 months.
5. Allergic to hydroxyapatite material.
6. Pregnant or lactating patients.

After phase I therapy, molars were divided randomly into two groups (Group I and II) for the treatment with either nonabsorbable or absorbable barrier membranes in conjunction with HABG in both groups in split mouth design (Fig. 1). In both the groups, furcation defects were treated with conventional flap debridement and defect filled with hydroxyapatite bone graft material (G-GRAFT) followed by placement of nonabsorbable d-PTFE GTR barrier membrane (TEF GEN-FD) in the group I and absorbable barrier membrane duramater (FDDMA) in the group II.

2.2. Clinical parameters

The following clinical parameters were recorded at baseline and 6 months postoperatively. A customized acrylic stent was fabricated with an occlusoapical groove prepared on the midbuccal aspect for the standardization of placement of



Fig. 1 – Barrier membranes.

Download English Version:

<https://daneshyari.com/en/article/3152142>

Download Persian Version:

<https://daneshyari.com/article/3152142>

[Daneshyari.com](https://daneshyari.com)