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شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

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شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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بالرسالة صفحات لم ترد بالأصل

EVALUATION OF USING PLATELET GEL WITH HYDROXYAPATITE FOR LOWER FLAT RIDGE AUGMENTATION

تقييم استعمال الصفائح الدموية الهلامية مع الهيدروكسي اباتيت لزيادة العظام المسطحة السفلية

by

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To
My
Parents

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Chapter I

INTRODUCTION

Introduction

The atrophy of the residual alveolar ridge of edentulous patients cause complete denture problems mainly pain, poor retention and instability. [1]

To obtain larger denture flange many lower edentulous ridges require both surgical techniques vestibuloplasty and ridge augmentation contributing for a greater stability and retention. . [2]

The technique of vestibuloplasty introduced by Khalil [1] in 1988, (fenestrated mucosal flap vestibuloplasty) is simple, doesn't need any grafting material and could be performed under local anaesthesia. It also guarantee proper re-positioning of tissues and muscles and provide rapid epithelialization of raw areas.

The most common surgical procedure technique is subperiosteal tunneling ridge augmentation technique which is done under local anesthesia .It is a simple office technique that necessitates no hospitalization. It has the distinct advantage of fixing the hypermobile alveolar mucosa and the bone graft, with augmenting the ridge at the same time[3,4].

The most acceptable augmentation material are ceramics which have the advantages of their close chemical structure and resemblance to bone mineral. Calcium phosphate biomaterial, especially hydroxyapatite clinically meets the criteria of an ideal implant. It eliminates the major problems associated with bone grafts to the alveolar ridge, such as grafts resorption, consolidation time and the need for a donor site. It appears biocompatible and gives good stability of the augmented ridge.

Also it has the added advantage of being directly bonded to bone and having the ability of osteoconduction. [3]

Combined techniques of posterior mandibular ridge augmentation and anterior sulcus deepening, improve the denture bearing area of the mandible more than vestibuloplsty alone and can be completed as one surgical procedure[4].

Mahmoud and Hany in 1996 recommended ridge augmentation through subperiosteal tunneling technique using hydroxyapatite at the same time with sulcus deepening procedure to overcome the problem of the high muscles attachment and /or mucosal attachments,and to increase the denture bearing area. The most common surgical procedure for ridge augmentation using HA is the subperiosteal tunnel technique [4,5]

The main problems in reconstruction of atrophic ridges with HA granules are the difficult handling properties, inconsistent postoperative results and the nature of the periosteum, which is almost unstrechable not infrequently, subperiosteal tunneling may tear the periosteum .Also during surgical technique implant migration and incorrect position of the implanted material along the center of the residual mandible may happen. Migration of the implant material toward the buccal or the lingual sides and thus leading to pressure exerted on the mental nerve and resulting in parasthesia of the lower lip . [5]

To overcome these problems, Mercier and Bellavance. [6] 1999 recorded materials to be mix with hydroxyapatite, one of them is fibrin glue

Mixing the hydroxyapatite with fibrin has the advantage of creating an easy moldable material which can be adapted to any skeletal surface and

stays in place after surgery. Prominent ossification was found in all cases with the presence of normally structured spongy bone.HA granules were embedded in the calcified bone matrix.They had not elicited inflammatory reaction and did not induce bone resorption It is well documented that fibrin-bound HA is successfully applied as a bone substitute in preprosthetic as well as in plastic and reconstructive surgery. [7]

Implantation of porous hydroxyapatite and fibrin glue leads to the formation of long lasting bone whose hardness is equal to or greater than that of normal bone.[8]

Dean and Ronalds[9] (1997) reported that the potential risk of infectious disease transmission from commercially available fibrin glue system has led to the development of numerous autologous techniques for preparing platelet gel which is an autologous modification of fibrin glue that has been recently described and used in various applications with apparent clinical success but still it has never gained FDA approval in the united states because of the reported risk of viral transmission associated with its use.

They concluded that the critical difference in composition between platelet gel and fibrin glue is the presence of high concentration of platelets and native concentration of fibrinogen in platelet gel. Native concentration of fibrinogen in platelet gel increases its working time and imparts to its gelatinous adhesive consistency that allows for ease of injection into surgical site.The advantages of platelet gel over other biologic sealant, is safety, convenience for patient, improved tissue healing, and no risk of infection.[9].

The authors also believe that the presence of platelets in the formulation brings cytokines and growth factors to the site of surgery in a manner that would not occur with fibrin glue. Through activation of platelets within the gel and the resultant release of growth factors, enhanced wound healing should be expected[9].

Platelet gel is used in surgical procedures of the maxillofacial region, mandibular reconstruction, surgical repair of the alveolar cleft and associated oral antral oral-nasal fistulae, and in adjunctive procedures related to the placement of Osseo integrated implants also platelet gel is used in instances if perforation of the flap is done, as well as an excellent postoperative homeostatic[9].