بسم الله الرحمن الرحيم

(قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم)

صدق الله العظيم

سورة البقرة – الآية ٣٢

Maxillary Alveolar Clefts Reconstruction Using Recombinant Human Bone Morphogenetic Protein-2 and Absorbable Collagen Sponge carrier

Thesis submitted to:
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Dedication

This work is dedicated to my professors, my parents, my family and all my colleagues.

إعادة بناء الشق السنخي في الفك العلوي باستعمال البروتين ٢ المكوِّن للعظم البشري مع الحامل الإسفنجي الكولاجيني القابل للامتصاص

رسالة

مقدمة كجزء من مقومات الحصول على درجة الدكتوراة

في جراحة الفم

من الطبيب/ محمد إبراهيم محمد إبراهيم

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دراسة سريرية أجريت على 12 مريض يعانون من وجود شق سنخى أحادى الجانب بالفك العلوى. قسم المرضى عشوائيا إلى مجموعتين متساويتين, ضمت المجموعة الأولى ستة مرضى عولجوا بإستخدام البروتين 2 المكون للعظم البشرى مع الحامل الكولاجينى القابل للإمتصاص, و المجموعة الثانية مكونة من ستة مرضى عواجوا بإستخدام الطعم العظمى من عظام الحوض الأمامية. جميع الإجراءات العملية كانت متماثلة لجميع المرضى, و فترة المتابعة كانت ستة أشهر عن طريق التقييم الإكلينيكى و الأشعة المقطعية لقياس كمية العظام المتكونة و كثافة العظام لكلا المجموعتين. بنهاية فترة المتابعة, أظهرت الأشعات تكون عظام جديدة فى كلا المجموعتين مع تحرك الأنياب الدائمة داخل العظام المتكونة, و وجد أنها أعلى بكثير فى المجموعة الثانية عنها فى المجموعة الأولى. من جهة أخرى وجد أن كثافة العظام المتكونة فى المجموعة الأولى أعلى من المجموعة الثانية و لكن بدون وجود دلاله إحصائية.

A clinical investigation was carried out on twelve patients, presented with unilateral maxillary alveolar cleft, requesting treatment of the clefts. The patients were randomly divided into 2 equal groups; group A comprised 6 patients grafted with recombinant human bone morphogenetic protein-2 on absorbable collagen sponge carrier and group B comprised 6 patients grafted with autogenous bone harvested from anterior iliac crest. The operative procedures were similar for all patients, and follow-up period was 6 months in the form of clinical and radiographic evaluation by C.T scan to measure the amount of bone fill and bone density in both groups. At the end of the follow-up period; the radiographs showed bony bridging between bony segments at the cleft site in both groups, and movement of the erupting permanent canine into the newly formed bone. The amount of bone fill was then measured and found to be significantly higher in group B than group A. on the other hand; bone density of the newly formed bone found to be higher in group A than group B but statistically insignificant.

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Introduction

Alveolar cleft management is one of the most controversial since the first reported bone graft to the cleft maxilla is attributed to *Lexer* (1908), nearly a century ago. For 50 years, bone grafting was sporadic and performed without clear objectives. We have more than one philosophy and multiple treatment modalities concerning each step in alveolar cleft management regarding the need for grafting, the most appropriate age, what material is most ideal?, and should adjunctive procedures such as orthodontic expansion be used before or after grafting?, lastly, what are the appropriate measures of success?. [1, 2]

Successful management of patients with cleft lip/palate requires a multidisciplinary approach. Coordinated treatment by the cleft palate team is an essential requirement to obtain optimum treatment results. The literature is replete with information on the need for a team approach in the management of patients with cleft lip and palate.[3]

Unfortunately, little consensus exists on the sequence and timing of treatment for these patients. The following factors may account for the apparent variation of opinions relating to the management of cleft patients; 1) Lack of randomized clinical trials comparing the outcomes of various treatment modalities and/or the effects of timing of therapy. 2) Absence of a common classification system limits meaningful comparisons between various studies. 3) Treatment sequence is not dictated by equitable representation of the opinions of each and every team member. Dominant team members may mandate treatment on the grounds of their individual bias. 4) Treatment sequence and timing is not always problem-specific.[2, 3]