سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

سامية محمد مصطفى

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

سامية محمد مصطفى

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

سامية محمد مصطفى

شبكة المعلومات الجامعية

بالرسالة صفحات لم ترد بالأصل

Synthetic Hydroxyapatite As Integrated Orbital Implant

Thesis
Submitted in Partial Fulfillment of
M.D. Degree in Ophthalmology

By

Naila Abdullah Siam
M.B. B.Ch., M.Sc.Ophthalmology

Supervised by

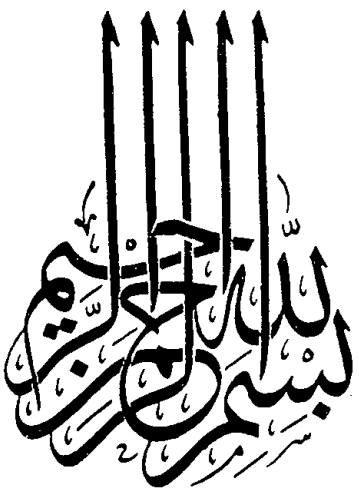
Professor Dr. Fawzi El-Sayed El-Shahed
PROFESSOR OF OPHTHALMOLOGY
BENHA FACULTY OF MEDICINE

Professor Dr. Essam El-Matboly Saber
PROFESSOR OF OPHTHALMOLOGY
BENHA FACULTY OF MEDICINE

Dr. Ashraf Abd El-Hameed El-Shayeb
LECTURER OF OPHTHALMOLOGY
BENHA FACULTY OF MEDICINE

Benha Faculty of Medicine
Zagazig University

2001


بسم الله الرحمن الرحيم

ACKNOWLEDGEMENT

It is my pleasure to express my grateful appreciation and deepest gratitude for Professor Dr. **Fawzi El-Shahed**, professor of ophthalmology, Benha Faculty of Medicine, for his unfailing guidance, marvelous support and continuous encouragement, without which this work could not have come to light.

I am greatly indebted to Professor Dr. **Essam El-Matboli**, professor of ophthalmology, Benha Faculty of Medicine, under whose constructive suggestions, sincere co-operation and generous help; this study was finally achieved.

My utmost obligations to Dr. **Ashraf El-Shayeb**, lecturer of ophthalmology, Benha Faculty of Medicine, for his enthusiasm, follow-up and valuable advice, throughout this study.

Lastly, I would like to devote my sincere thanks to all staff members of ophthalmology department, Benha Faculty of Medicine for their kind help, and all those who contributed to the completion of this study.

Naila Siam

CONTENTS

INTRODUCTION

INTRODUCTION

The use of an orbital implant was first described in nineteenth century, where a simple sphere of glass was introduced by Mules in 1885. [12]

Since then, numerous implants have been devised with varying degrees of success. Many different materials were utilized including glass, sponge, fat, bone, and some metals. [13]

Anophthalmic socket rehabilitation aims at providing the patient with comfortable, naturally appearing prosthesis with maximal motility and few socket complication.

A series of direct coupled; partially exposed integrated implants were developed with this goal in mind. However, they are no longer recommended or used, as they generally become chronically infected and extruded. [15]

Buried-integrated implants were subsequently introduced. Although these implants resulted in fewer complications, yet the mobility was not as good as with the direct-coupled implants, and extrusion rate remained unacceptably high.[67]

The fact that many types of implants have been developed and tried attests that the results with orbital implants to date have been less than ideal. The artificial eye should be directly coupled to an implant integrated with the extra-ocular muscles. Also, the implant must resist chronic infection and extrusion to have long-term results.

In 1985, porous hydroxyapatite spheres were suggested as an integrated, buried, direct motility implant. It has a micro-architecture similar to human cancellous bone with interconnecting channel.[38] When implanted in the orbit, it acts as a passive framework for fibrovascular ingrowth, and thus becomes integrated into the orbital tissue.[31] This material is completely biocompatible, non-toxic, and non-allergic.[24] IT is also, not associated with significant foreign body inflammatory reaction.[25] Few complications were reported, including tissue breakdown and exposure, could be managed.[40]

AIM OF THE WORK

AIM OF THE WORK

Evaluation of the synthetic Hydroxyapatite as an anophthalmic socket implant, and to determine if this implant can be integrated with an ocular prosthesis to promote improved motility and cosmoses.

Its advantage over the natural, coral-derived, hydroxyapatite implants includes a significantly lower material cost.

REVIEW OF LITERATURE

Orbital Fascia

The orbital contents are supported by a highly developed connective tissue system. The fascia may be divided into three parts: the fascia covering the globe (Tenon's fascia), the covering of the extraocular muscles, and the chick ligament extensions of the extraocular muscle fascia that reach to the surrounding bone and eyelids. The entire fascia layer can be considered as extensions or heads of the extraocular muscle fascia.[1]

Tenon's capsule, or fascia bulbi, is a fibroelastic membrane that extends anteriorly from the dural sheath of the optic nerve, where it is thinnest, to fuse with the conjunctiva immediately posterior to the corneoscleral limbus. It is loosely applied to the episclera posteriorly but adherent anterior to the Rectus muscle insertions. Tenon's capsule separates the globe from the intraconal orbital fat. The Rectus muscles penetrate Tenon's capsule posterior to the equator of the globe (Fig.1). The potential space between the globe and Tenon's membrane is termed Tenon's space. Externally, Tenon's capsule is joined to the network of fibrous septa dividing the lobules of orbital fat. [2]

The muscular fascia ensheathes the extraocular muscles and stretches between the muscles as the intermuscular septum (Fig. 2). The extraocular muscle fascial coverings are thin posteriorly but become much denser anteriorly. The muscular membranes are seen to connect externally to the orbital walls and internally to the fibrous septa dividing the intraconal fat lobules (Fig. 3). An extensive system of fascial septa radiates from the