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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

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ANTI-MICROBIAL PROPHYLAXIS IN EAR SURGERY

Thesis

Submitted For Partial Fulfillment

Of

Master Degree In Otorhinolaryngology

Presented By

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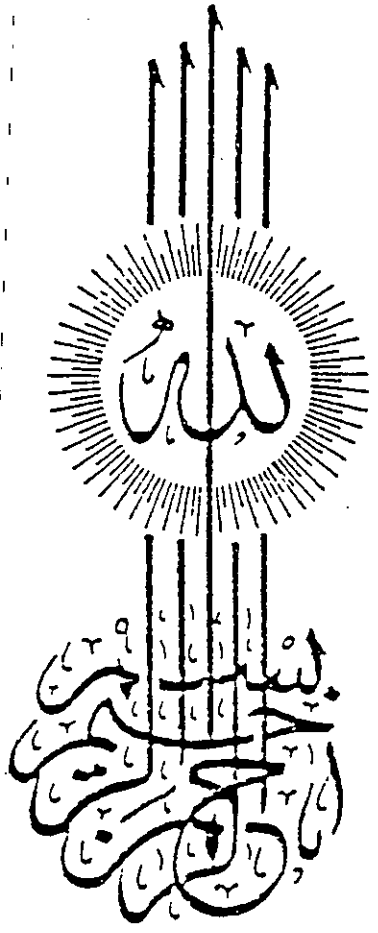
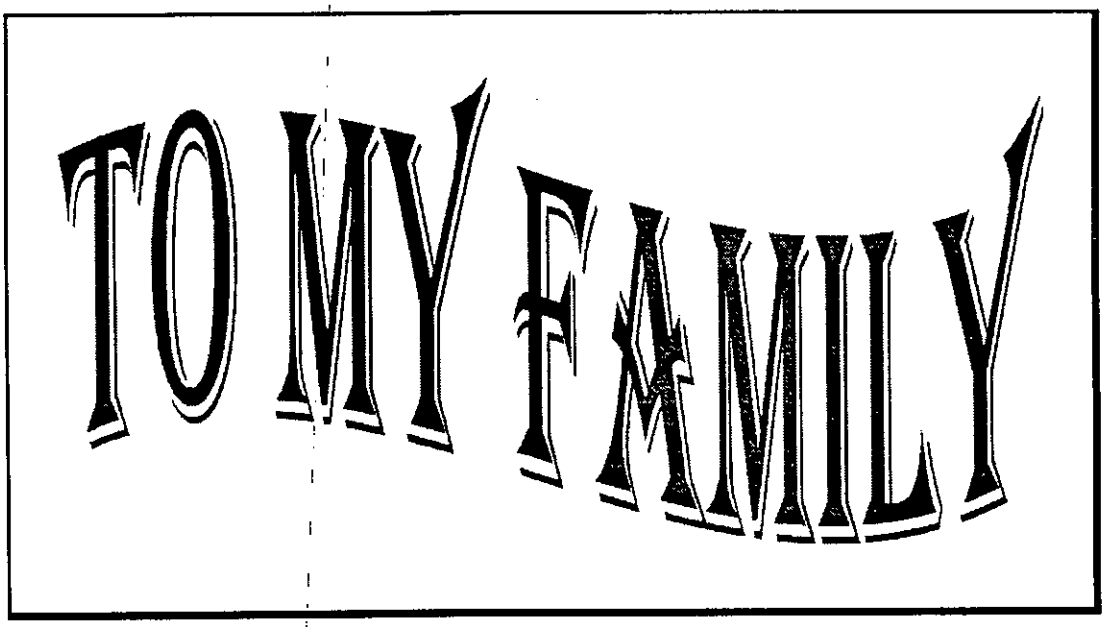
1996



﴿ وقل اعملوا فسيرى الله عملكم
ورسوله والمؤمنون ﴾

صدق الله العظيم [التوبة ١٠٥]


TO MY FAMILY

ACKNOWLEDGEMENT

I wish to express my deep gratitude and thankfullness to my supervisor ***Prof. Dr./ Zoheir El Hoshy*** *professor of E.N.T., faculty of medicine, Cairo University, for his guidance, encouragement, help and valuable advice at every stage of this work.*

I also would like to register the excellent and the kind help which was done generously by ***Prof. Dr./ Tarek Mohamed Kamel*** *professor of E.N.T., faculty of medicine, Cairo University.*

Iam sincerely indebted to ***Dr./ Mohamed Anwar*** *assistant professor of E.N.T., faculty of medicine, Cairo University for his kind help and great encouragement.*

Content

INTRODUCTION

INTRODUCTION AND AIM OF WORK

Introduction

Despite advances in medical technology and an extensive antibiotic armamentarium, infections contribute significantly to postoperative morbidity. Although the incidence of wound infections has been reported to be approximately 4.9%. The actual risk of developing a post Operative infection depends on numerous factors and has been reported to range from 1 to 40% depending on the surgical procedure performed *(Conte et al., 1984)*.

In 1980 *Cruse and Foord* reported that surgical wound infections prolonged hospital stay by 10.1 days on average based on this, one may conclude that wound infections clearly have a significant economic impact on the healthcare system and thus studies were undertaken to prevent such infections. Prophylactic antibiotics, have been shown in numerous situations to prevent the development of postoperative wound infections. Infact the prophylactic use of antimicrobial agents accounts for approximately 30% of the total hospital use of antibiotics *(Shapiro et al., 1979)*.

"Prophyaxis" implies that the agent is administered prior to suppuration of invasive organism *(Sandusky, 1980)*. Thus, antimicrobial surgical prophylaxis aims at preventing the development of infection rather than treating an established process.

Following a surgical procedure an infection may develop at the surgical incision or among the structures that are manipulated or exposed. The latter type of infection is often referred to as a deep infection. A wound infection is some what difficult to define, since cultures may be sterile even when the wound is definitely infected *(Cruse et al., 1988)*. Conversely, bacteria may sometimes colonize the surgical site and thus be recovered upon culture, although the wound is not infected. The signs and symptoms of a wound infection depend on the infecting organism and the tissue involved. The classic presentation usually involves a red, inflamed incision from which pus may be draining. However, wound infections may present as a more indolent process in which an abscess is later diagnosed. The infection may be readily apparent before a patient's discharge but in as many as 10% of cases. The wound infection is diagnosed following discharge *(Cruse, 1988)*.

The use of prophylactic antibiotics in surgical procedures has been and will continue to be a subject of great debate due to the lack of well controlled trials of prophylactic antibiotics. *(Chodak et al., 1977)*.

In ear surgery : in the absence of prior infection (stapes surgery, dry ear surgery) studies'results are not in favor of antibiotic prophylaxis. On the other hand when the ear is inflamed or infected the use of antibiotics is indicated *(Legent et al., 1994)*.

Contradictory and inconclusive clinical results leave the clinician with few firmly established guidelines. Excessive use of prophylactic

antibiotics in the absence of clinically proven benefit continues. Antimicrobial prophylaxis in surgery represents an area of potential abuse. Empirically, surgeons continue to seek better surgical results through antimicrobials *(Jackson, 1988)*.

Less controversy exists today concerning the proper usage of prophylactic antibiotics in the surgical patient. The choice of agents and the timing and route of administration have become standardized by authoritative committees based on numerous well-planned prospective clinical studies *(Page et al., 1993)*.

These studies have shown a decreased wound infection rate in patients given appropriate short-term antibiotic prophylaxis, compared with that of untreated or placebo groups *(Nichols, 1991)*. The evidence suggests that patients undergoing either clean or clean-contaminated operative procedures can benefit from antibiotic prophylaxis *(Nichols et al., 1993)*.

The goal of antimicrobial prophylaxis is to achieve sufficient antibiotic tissue concentrations prior to possible contamination in the relevant tissues and ensure adequate levels throughout the operative procedure to prevent subsequent bacterial growth. The dose that is effective prophylactically may differ from that required to treat an infection. Concentrations below the minimum inhibitory concentrations (MICS) may also have a beneficial effect *(Bergamini et al., 1989)*.

For prophylaxis only well tolerated antibiotics should be used. Cephalosporins are nowadays the preferred drugs for prophylaxis on account of their low toxicity. Parenteral systemic antibiotics seem to be more appropriate than oral antibiotics because the chosen antibiotics must reach high concentrations at all high risk sites *(Fry et al., 1986)*.