بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــق الاصليـــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

REGIONAL ANAESTHESIA FOR EYE SURGERY THE PERIBULBAR BOLCK DEVELOPMENT OF A SIMPLE EFFECTIVE TECHNIQUE

Theses submitted for partial fulfillment of M.D. degree in Anaesthesia

By

SAHAR ADLY MOHAMED EL-HUSSANY HASHIESH
M.B.B.Ch. M.Sc. Anaesthesiology

Supervised By:

PROFESSOR
IBRAHIM ABASS YOUSSEF

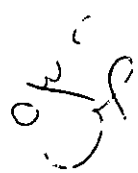
Head of Anaesthetic Department
And intensive care
Faculty of Medicine ,
El-Minia University

CONSULTANT ANAESTHETIST
ANDREW CHMIELEWSKI

Head of Anaesthetic Department
and Pain relief unit
Northampton General Hospital,
Oxford U.K.

ASS. PROFESSOR
IBRAHIM TALAAT IBRAHIM

Associate professor of Anaesthesiology,
Faculty of Medicine
El-Minia University



Faculty of Medicine
El-Minia University

1999

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGMENT

All thanks are due to God

I owe supreme gratitude and appreciation to Prof. Ibrahim Abbass Youssef Professor and head of anaesthetic department and El-Minia University Hospital for his continuos encouragement and keen support and precious confidence enabling me to invade this interesting anaesthetic field " the regional anaesthesia for eye surgery " and for his generous help , clarifying discussions , inexhaustible patience and precise final revision of result and discussion with remarkable contribution to this work that without him it would not have been materialized. Actually words fail to express my feelings for his support and constrictive criticism.

I would like to express my cardinal feeling of sincerity and utmost gratitude to Dr. Andrew Chmielewski, Consultant and head of Anaesthetic Department and Pain Relief unit in Northampton General Hospital in UK , who honored me by supervising my work , starting from choosing the research topic and the design of the research work and for comprehensive training , instructive teaching and kind guidance during my stay in UK .

I am greatly beholden to Dr. Ibrahim Talaat Ibrahim Assistant Professor in Anaesthetic Department El-Minia University Hospital for his meticulous guidance , generous review , and kind support.

I can not miss acknowledgment and expressing my sincere gratitude to Dr. Salah Nagib El-Tellawy Lecturer of Anaesthesiology and Algology El-Minia University Hospital for his valuable cooperation starting from revising the introduction and aim of the work, patients and methods and his contribution to this research in having the whole burden of the statistical work, suggesting the statistical tests , being the first one who revise the results and discussion of this work .

I am very grateful to all staff and residents in Anaesthetic Department in both Northampton General Hospital in UK and El-Minia University Hospital in El-Minia for their help and cooperation in producing this work.

Dr. Sahar Hashiesh

INTRODUCTION AND AIM OF THE WORK

Introduction

Since the discovery of cocaine as a local anaesthetic in 1884 by Koller ,eye surgery has been commonly performed under local anaesthesia .The retrobulbar anaesthesia technique was first described in the same year by (Knapp 1884), but it was not until 50 year later when better local anaesthetic agents were available that it became generally accepted .Today, more than one million retrobulbar anaesthetic blocks a year are performed in the United States (Duker et al ., 1991).

Regional anaesthesia is suitable for a wide variety of eye operations,including cataract extraction, trabeculectomy, vitrectomy and strabismus repair. Cataract surgery constitutes by far the most common eye operation done under local anaesthesia . General anaesthesia is still commonly used in other countries, but the pattern is changing. There is evidence that in elderly patients having cataract surgery, the endocrine and metabolic responses seen during general anaesthesia are inhibited by local anaesthesia (Barker et al ., 1990).Regional anaesthesia should be considered as an alternative choice for eye surgery, and not just for those unfit for general anaesthesia. The reductions in health care funding and the recent trend towards day-care surgery will increase the demand on regional anaesthesia for eye surgery(Rubin , 1990).

Today ,most of the eye anaesthesia blocks world-wide are performed by ophthalmic surgeons and the bulk of information on regional anaesthesia for eye surgery is found in the ophthalmic literature. however, life threatening complications, fortunately rare, are best managed by anaesthetists experienced in resuscitation. Furthermore, the care of patients having eye surgery with local anaesthesia can be improved by having anaesthetists involved in the perioperative management. Anaesthetists are also trained in

nerve block techniques. Thus, it is natural that in many centres, anaesthetists have become more involved in local anaesthesia for ophthalmic surgery(Aquavella , 1988 and Kaplan 1988).

One of the purposes of this research to draw the attention of anaesthetists to this neglected area , the review contains a brief description of anatomy of the orbit and its contents it is presented first to serve as a base for performing safe eye blocks , this is followed by an analysis of various ocular block techniques, the complications associated are then presented for their awareness, prevention and management .

The use of regional anaesthesia for cataract surgery is increasing at the expense of general anaesthesia and today it has become the anaesthesia of choice for the great majority of ophthalmic surgical procedures (Hodgkins, 1992). Regional anaesthesia is relatively easy to perform , seems to provide excellent anaesthesia and operative conditions and may be safer in elderly patients who frequently exhibit several coexisting diseases (Rubin , 1990) . The regional anaesthesia techniques allow early mobelisation and discharge in patients undergoing daycase surgery (Hamilton et al., 1988) ,and a recent study shows that in cataract surgery it is more comfortable under regional anaesthesia than general anaesthesia postoperatively. Furthermore regional anaesthesia is cheaper and does not need all that anaesthetic devices and operative personnel as the case in general anaesthesia (Koay et al., 1992).

Traditionally retrobulbar anaesthesia (in which the tip of the blocking needle lies inside the muscle cone behind the globe) is considered to be effective but serious complications such as retrobulbar hemorrhage , globe perforation , optic nerve damage, and brainstem anaesthesia have been reported (Hamilton et al., 1988).

Peribulbar or periocular techniques (in which the tip of the blocking needle lies outside the muscle cone) has gained wide acceptance in ophthalmic

anaesthetic practice because of its lower incidence of adverse effects as compared to retrobulbar blockade (Davis and Mandel ,1986) . Several innovations of periocular block have been introduced recently to overcome the frequent clinical problems associated with it such as increased time for onset of anaesthesia and akinesia of the eye , higher initial failure rate and higher volume of local anaesthetics used if further supplementary injections are required which may lead to an increased in intraocular tension by either : (a) different placement sites of the blocking needles (Ali-Melkklla et al ., 1993), or (b) adding adjuvants to improve the spread and the efficacy of the local anaesthetic mixture used **(Zahl et al ., 1992 ; Zahl et al ., 1991** and Roberts et al ., 1993).

Aim of the work :-

Through our three stages study we tried to develop a simple effective periocular technique as regards the approach and the local anaesthetic mixture used .

In the first and second stages of this study we fixed the approach and performing the block through two point transconjunctival injection and our aim is to optimize the standard local anaesthetic mixture as regards the spread through the orbital contents and the onset of action . With that optimized local anaesthetic mixture the third stage aimed to reduce times of injections if the efficacy of the block is not compromised.

First stage: Evaluation of role of hyaluronidase in peribulbar block..

Second stage : Evaluation of pH adjustment of local anaesthetic mixture with or without hyaluronidase.

Third stage : Do we really need two point injection sites with our choosen local anaesthetic mixture ? Evaluation of one point approach.

Which site could be sufficient infrotemporal or medial site ?