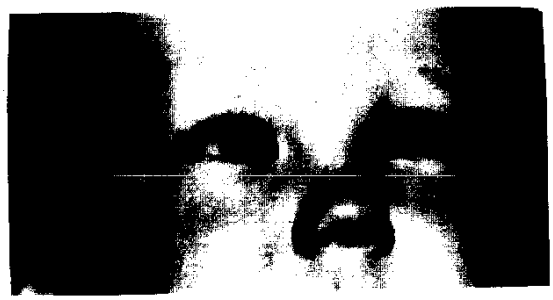

INFANTILE ESOTROPIA

ESSAY

Submitted in partial fulfillment of master degree

(OPHTHALMOLOGY)

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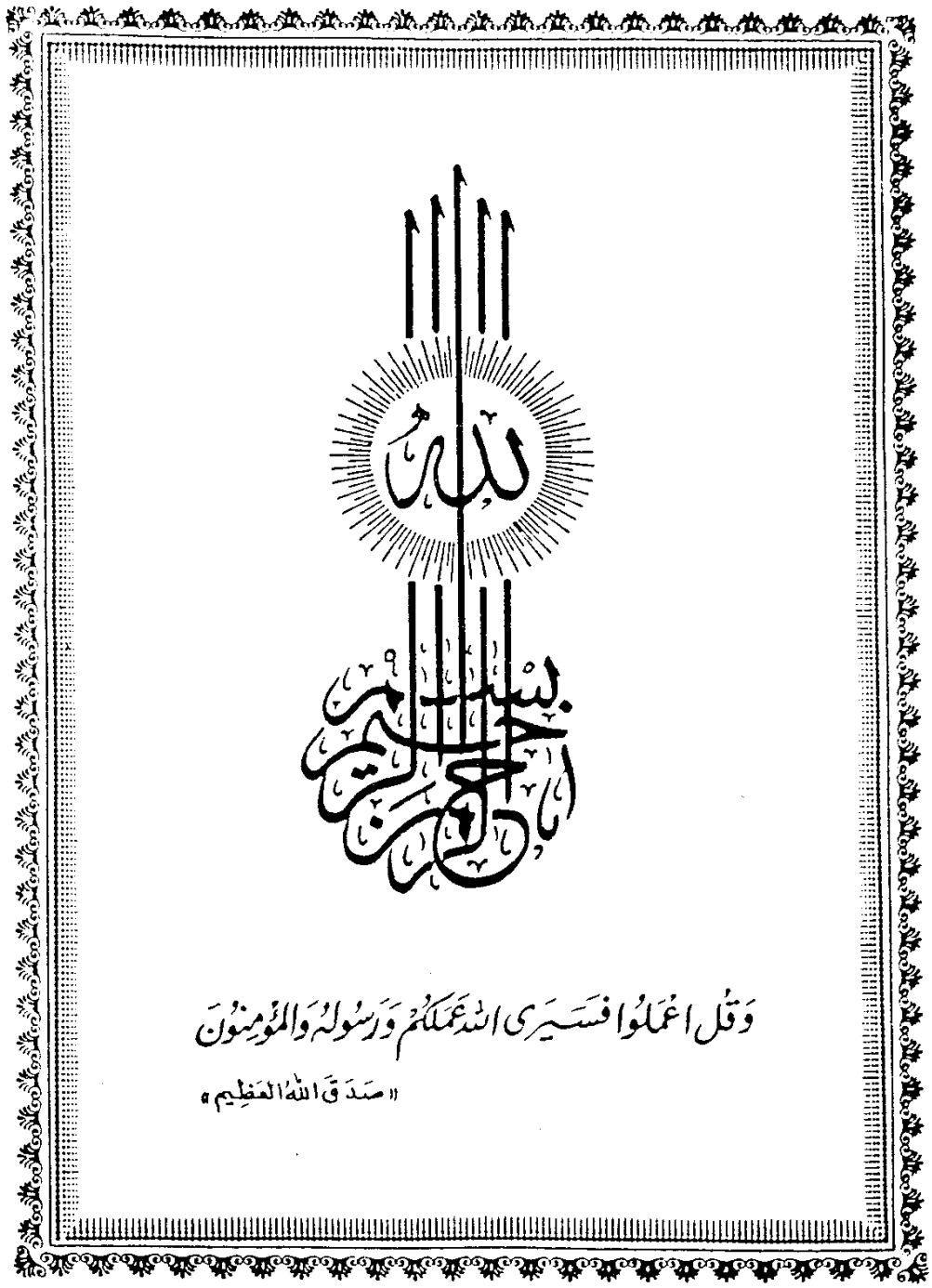

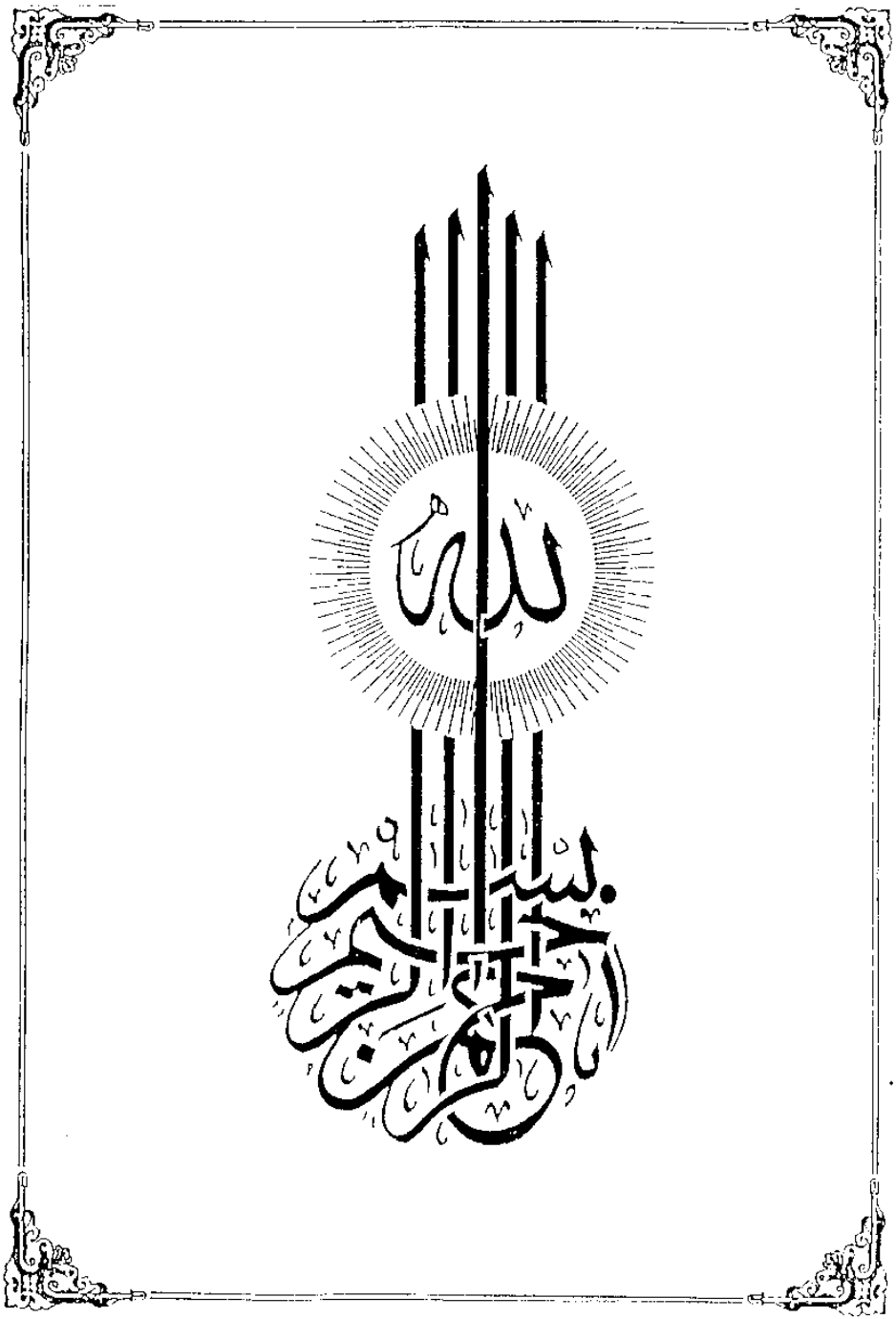

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To My Parents

ACKNOWLEDGEMENT

First and foremost, thanks to ALLAH, the beneficent and merciful.

I am greatly honored to express my supreme gratitude to Dr. Golzamin EL Hawary, Professor of Ophthalmology, Ain Shams University, for her kind support, valuable advices, and unlimited generosity in time and effort.

I am also indebted to all my Professors and staff in Ophthalmology Dept., Ain Shams University, for their encouragement and co-operation.

INRODUCTION

INTRODUCTION

A squint or strabismus is a failure of the two eyes to look directly at the same object. It is that condition in which the visual axis of one eye (the squinting eye) is not directed to the object being looked by the other eye (the fixing eye). When this happens binocular single vision is not possible.

Binocular vision is the ability of the brain to obtain one mental impression by the use of the two eyes. It can occur only if there is precise co-ordination of the movements of the two eyes for all directions of gaze. It also requires clear images from both eyes and their fusion into a single mental percept. The ability to see singly is normally acquired during the first years of life; it cannot be acquired later. Development of binocular vision in an infant can be arrested or perverted by any imperfection of the motor, sensory, or central components. An initial defect in one of these components is therefore likely to result in defects in the other two. A squint, which is a motor abnormality, can thus be due to a primary nerve or muscle defect or, more commonly,it is secondary to a sensory or central defect. Whatever the cause, squint is always more than an altered appearance.

Although the causes of many squints are not fully

understood, in the majority of squinting children there is a hereditary factor and in the others the responsible defect can be recognized. Examples are: an ocular abnormality which prevents good central vision, paresis of one or more of rectus muscles, congenital cerebral palsy and large refractive errors. Most squints are of the convergent type, while the most common subtype is the infantile esotropia.

If the binocular sensory mechanisms are normal, any squint must result in diplopia and this occurs at the onset of most squints. However, the infant is able to suppress the images arising from one eye (the squinting one) and, by this inhibition, diplopia is thereby overcome. Suppression is a facultative inhibition of vision of one eye while the other eye is fixating, which occurs only while it is useful. But if it is allowed to continue during the early years of infancy it becomes permanent, and single binocular vision is never possible. A number of other abnormalities may develop as a consequence of squint. These include amblyopia, eccentric fixation and abnormal retinal correspodence. The younger the child the more quickly do they occur and the more firmly they are established.

Because of the high incidence of infantile esotropia and the sensory changes which develop in chlidhood strabismus, the prompt investigation and treatment of a

squinting child is always mandatory. After the age of 6 months no infant with a squint is too young to be referred for ophthalmological examination.

This work is an attempt in focusing a light upon the most common type of strabismus which is "infantile esotropia" aiming at discussing its clinical picture and the suitable means of management.

DEFINITION

Definition

Costenbader (1961) defined infantile esotropia as any esodeviation that is known to be present before the age of one year. He re-defined the condition in 1968 as a constant esotropia with an onset between birth and the sixth month of age. Baker and Parks (1980) defined it as a large constant angle esotropia, unchanged since first noted by parents, a few days or weeks after birth and confirmed ophthalmologically no later than the sixth month of age. Lee and Dyer (1983) defined the condition as a large angle esotropia which begins to appear before the age of six months, and it is non accommodative in origin. Nelson (1989) defined it as a large angle, constant esotropia with onset during the first six months of age.

The term (infantile esotropia) was suggested by Costenbader in 1961, preferring it to the term congenital esotropia. Helveston and associates (1983) preferred to use the term congenital infantile esotropia to describe esodeviations appearing during the first 6 months of age. Alternative terminology to this case in addition to congenital esotropia and congenital infantile esotropia are essential esotropia and connatal esotropia (Gittinger, 1988).

BASIC CONSIDERATION

Basic consideration

Any condition under which humans do not coordinate and control the movements of both eyes to produce a unified image is considered abnormal, and proper understanding of the extraocular muscles anatomy and physiology is necessary to manage this abnormality effectively and safely (Burde, 1981).

Basic anatomy

The eye ball is suspended in the bony orbital cavity by a complex matrix of fascia and muscle. The fasciae of the orbit extend from the orbital apex to the orbital rim, and by dissection, may be divided into suspensory ligaments, check ligaments, septa, and muscle sheaths. Tenon's capsule is a fascial sheath enclosing the sclera which become fused with the conjunctiva at the corneoscleral limbus.

Eye movement is controlled by six extraocular muscles, four rectus muscles and two oblique muscles. All are supplied by the third cranial nerve except the lateral rectus muscle which is supplied by the abducent nerve and the superior oblique muscle which is supplied by the trochlear nerve. All these muscles, except the inferior oblique, take origin at the apex of the orbit. The superior oblique muscle arises from the body of the sph-