EYE MANIFESTATIONS IN SYSTEMIC DISEASES.

THESIS

SUBMITTED FOR PARTIAL FULFILLMENT

OF THE REQUIREMENT

OF MASTER IN MEDICINE

By

MONA RAGAB ABO ZEID

M.B., B.Ch. AIN SHAMS UNIVERSITY

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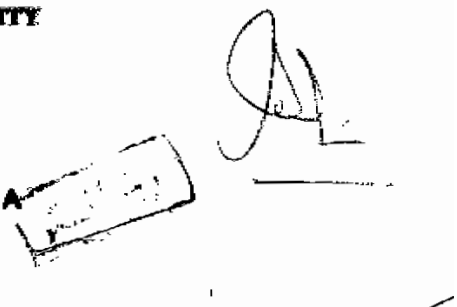

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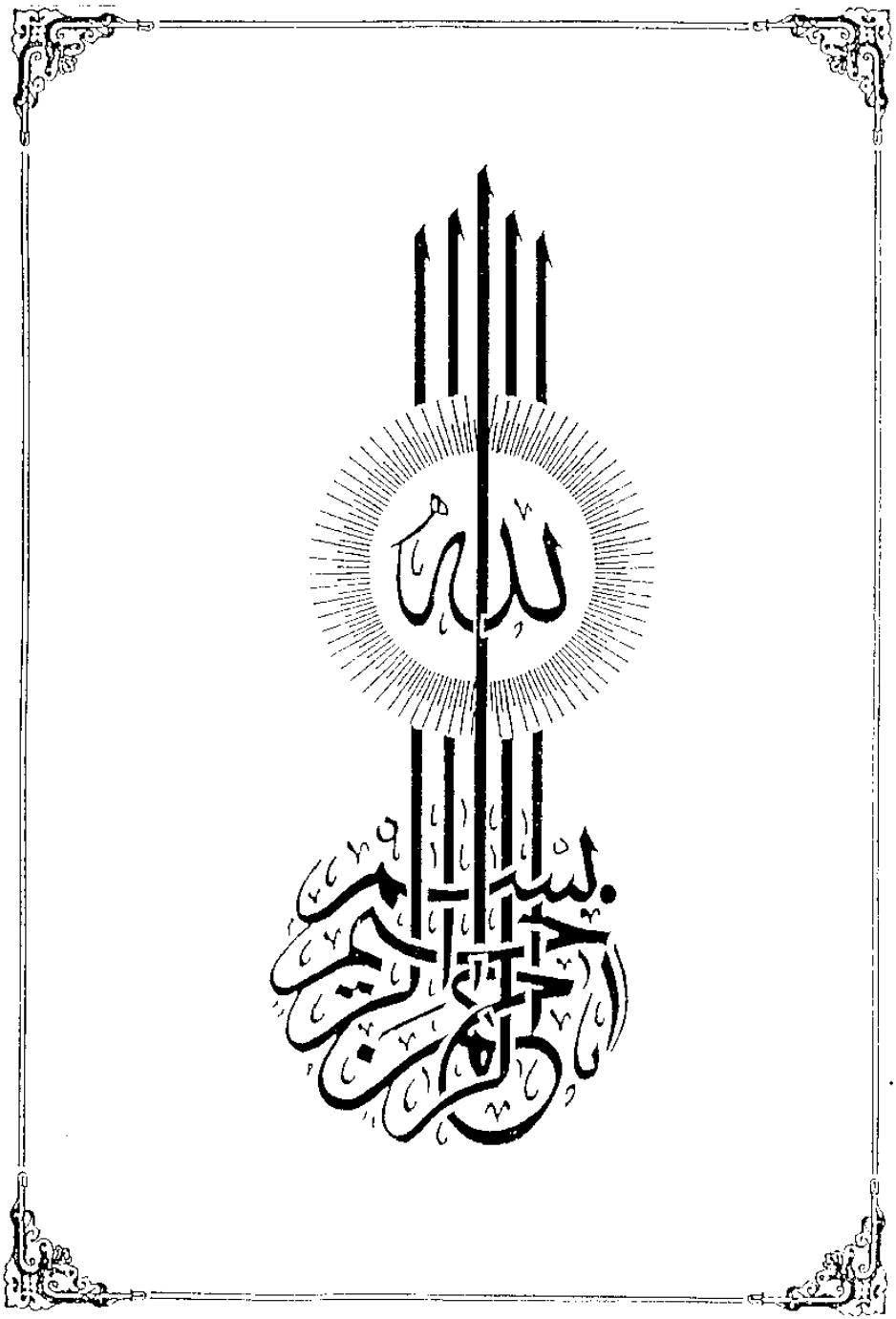

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INTRODUCTION

During recent years there has been an increasing interest in the affection of the eyes in systemic diseases. Metabolic diseases, collagen and rheumatic diseases, nutritional disorders, endocrinal abnormalities, vascular diseases, hematologic diseases, gastrointestinal diseases, infectious diseases, and neurologic lesions are examples of groups of diseases with characteristic eye manifestations.

The ocular manifestations of systemic affections may at times play an important role in settling the correct diagnosis of the generalized condition. Mousolf (1980).

The ophthalmic involvement may constitute a major problem and may be a threat to vision, conversely the ophthalmic findings may suggest the need to intensify one's search for evidence of the systemic disease elsewhere in the body. Chumbley (1981).

For this important relationship we thought it is necessary to write this review about eye manifestations in systemic diseases. We will try to be as comprehensive as possible although we know from the start that it is a great difficulty for this review to be an exhaustive one owing to the nature and diversity of the subject.

TERMINOLOGY

As we write this review from an internist point of view, we start by explaining some ophthalmological terms used in the text with a short resume about each condition.

Amaurosis fugax: Transient recurrent loss of vision, or momentary loss of vision especially occurring without apparent lesion of the eye. It may be monoocular.

Ambylopia : Partial or complete loss of vision respectively in one or both eyes in which there are no ophthalmoscopic or objective signs.

Band Keratopathy: A gradual development of a gray white opaque band starting at the limbus and extending across the cornea, at a level slightly below the middle of the pupil, due to deposition of calcium salts in the superficial cornea.

Blepharospasm : Involuntary spasm of the lids.

Ectropion : Turning out of the eye lid margin.

Entropion : Turning inward of the eye lid margin.

Epiphora : An overflow of tears due to excessive tear secretion or defective tear drainage.

Flooters : Small dark particles in the vitreous.

Hyphema: Blood in the anterior chamber.

Hypopyon : Pus in the anterior chamber.

Hypotony : Abnormally soft eye with decrease in the intraocular pressure.

Keratitis sicca : Decreased tear secretion results in epithelial erosions and mucus like strands and threads of nonviable epithelium which are attached firmly to the cornea.

Keratic precipitates: Aggregation of leucocytic cells are better seen by slit lamp on the posterior surface of the cornea, larger translucent keratic precipitates are called mutton fat keratic precipitates.

Keratitis,(Nummular Keratitis): Is a rare form of subepithelial keratitis the principal findings are 10-20 small disc-shaped opacities located in the central cornea just beneath Bowman's membrane.

Interstitial keratitis: Inflammation of the corneal stroma it is typically seen as a late manifestation of congenital syphilis or sometimes in acquired syphilis, also can occur as a complication of tuberculosis, leprosy, and sarcoidosis as well as following mumps or herpes zoster.

Keratomalacia : Corneal softening usually associated with avitaminosis A.

Lagophthalmos : Incomplete closure of the palpebral aperture when the eyes are shut that leaves the cornea exposed.

Leukoma : A dense,white, opaque corneal scar from any cause.

Madarosis : Loss of cilia (eye lashes)

Oculomotor apre-xia: The patient is unable to move the eyes on command, for example in conjugate gaze, but at other times is seen to carry out the movement at random.

Photopsia: Flashes of light.

Ptosis : Drooping of the upper eye lids when the eyes are open to cover more than the upper 1/6 of the cornea.

Pterygium: A triangular fold of tissue which

extends from the conjunctiva over the cornea.

Phthisis bulbi: Atrophy of the eye ball with hypotony as a sequela of panophthalmitis and endophthalmitis.

Staphyloma : Bulging of weakned cornea or sclera lined with uveal tissue, and is seen as thin, dark blue, bluging area.

Synechiae and iris bombè: Synechiae means adhesions of the iris to cornea (anterior synechiae) or to lens (Posterior synechiae) with irregular shaped pupils,if this adhesions forms around the entire pupillary margin (occlusion of the pupil) they can prevent the normal passage of aqueous humour from the posterior into anterior chamber this causes the mid-portion of the iris to bulge forward toward the inner surface of the cornea a condition called iris bombe.

Vaughan and Asbury (1980).

INFECTIOUS DISEASES

Certain systemic infections are manifested in the eyes, which provide important diagnostic signs, such signs when recognized will direct the course of a physical examination, and facilitate the establishment of the diagnosis.

Bacterial Infection :

Diphtheria :

Diphtheria is an acute infectious disease caused by a gram-positive corynebacterium diphtheriae, ocular involvement may present either as primary ocular diphtheria or as an accompaniment to an upper respiratory diphtheria secondary to toxic reactions in the cranial or peripheral nervous system.

Ocular motor palsies due to toxic neuritis is the most frequent ocular manifestations of diphtheria mainly of the abducent nerve, other ocular signs are ptosis, paralysis of accommodation, paralysis of convergence and divergence, Wilkins (1977).

Toxic palpeberal edema and conjunctival hyperemia with petechiae are other ocular signs in diphtheria.

In primary ocular diphtheria ocular manifestations are membraneous or psuedomembraneous conjunctivitis, where the eye lids are red, swollen, and painful, when the lids are everted a diphtheritic membranes are observed over the inner surface. Diphtheritic corneal ulcer can occur in primary ocular diphtheria since the exotoxin of corynebacterium diphtheriae is capable of necrotizing the intact corneal epithelium. Wilkins (1977).

Scarlet Fever :

A specific fever of sudden onset and acute course caused by a streptococcus viridens, the ocular manifestations of it include :

(1) Rash of the scarlet fever on the lids, palpebral edema, mild catarrhal conjunctivitis and numerous petechial conjunctival hemorrhages are the common ocular manifestations.

(2) Uveitis is a relatively frequent complication of

scarlet fever, and may result in depigmentation of the iris.

(3) Flame-shaped retinal hemorrhages with white centers (Roth's Spots) have been reported in Scarlet fever and Scattered all over the retina.

(4) Papilledema and occlusion of the central retinal artery by emboli are additional complications.

(5) Rarely dacryocystitis and dacryoadenitis have been reported in Scarlet fever. Duke Elder (1976).

Meningitis :

Meningococcal meningitis is an acute infectious disease caused by Neisseria meningitidis. The ocular manifestations are common and include:

(1) Catarrhal conjunctivitis with photophobia may precede the cerebral symptoms and meningococci have been obtained from conjunctival smears.

(2) Toward the end of the first week of the illness a metastatic uveitis appearing as an iridocyclitis or choroiditis, usually mild also has been reported.

(3) Muscular paresis usually of the sixth and third nerves have been described in the acute stage, while involvement of the fifth nerve may result in paraesthesia and neuroparalytic keratitis.

(4) The pupils usually show miosis but in the late stages paralytic mydrasis may set in.

(5) In infections involving the brain stem nystagmus may occur which may be uniocular.

(6) Other ocular signs include ptosis, spastic retraction of the lid,spasm of convergence or accommodation and papillitis as well as optic neuritis, Okun and Butler (1965).

Brucellosis :

Brucellosis caused by an aerobic gram negative coccobacilli, the most frequent ocular complication is nodular iritis with lesions at the pupillary border of the iris and mutton - fat deposits on the posterior surface of the cornea, this inflammation tends to subside in a short time.