INVOLVEMENT OF EYES IN INFECTIONS WITH TRICHINELLA SPIRALIS

THESIS

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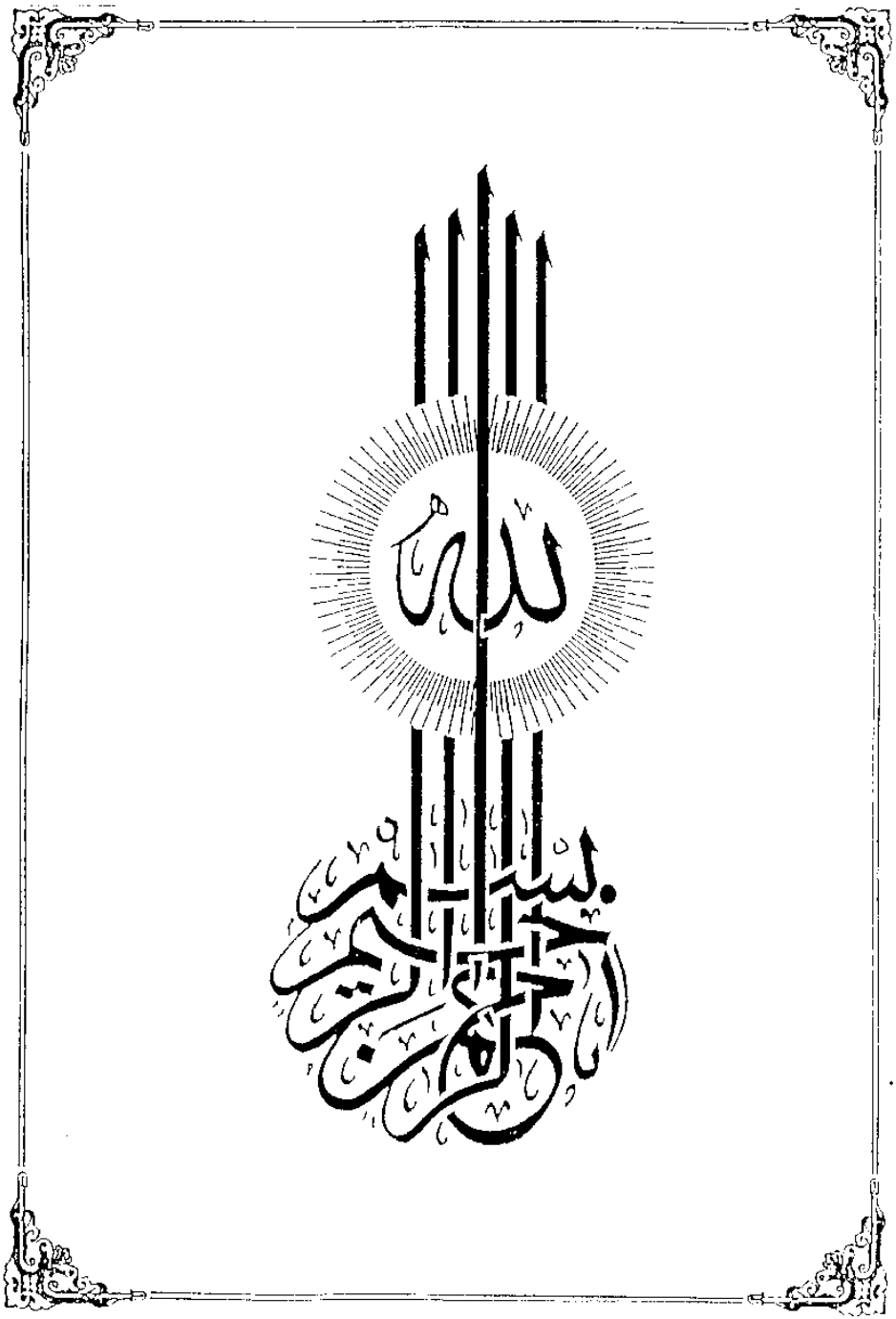
بسم الله الرحمن الرحيم

« وكان فضل الله عليك عظيما »

(صدق الله العظيم)



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C O N T E N T S

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LIST OF ABREVIATIONS

I.D.	:	Intradermal test
I.H.A.T.	:	Indirect haemagglutination test.
B.F.	:	Bentonite flocculation.
I.F.A.T.	:	Indirect immunofluorescent antibody test.
F.C.S.	:	Fluorescent complement staining.
ELISA	:	Enzyme linked immunosorbent assay.
T. spiralis	:	Trichinella spiralis
ppt.	:	Precipitation.
SR.	:	Superior rectus.
IR.	:	Inferior rectus.
MR.	:	Medial rectus.
LR.	:	Lateral rectus.

INTRODUCTION

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Trichinella spiralis is a tissue nematode of man and various other mammals. The most common natural host of this parasite are rats and pigs. Infection is established when viable larvae are ingested in infected pork.

Egypt was considered a Trichina - free country (Rifaat et al., 1969). However the infection started to appear later on, Tadros & Iskander (1975) and El-Nawawi, (1977), they were able to detect Trichinella larvae in four pigs in both Cairo and El-Menia Abattoirs.

Most cases of trichinosis are usually encountered in ophthalmic hospitals as the ocular swelling is one of the most constantly observed clinical features of the disease, (Thomas and Cooper, 1924; Conner, 1929; Carter,1930;Willet and Pfau, 1930; Kaufman, 1940 and Croll and Croll,1952).

Involvement of the eyes was recorded by Thompson(1910) and Thomas and Cooper (1924). The manifestations of infection with Trichinella spiralis varies from puffiness of the lower eye lid to gross oedema of both eye lids,periorbital oedema, palpebral oedema, pain on motion of the eye balls

and injection of conjunctival vessels. Other manifestations are severe myositis of the limbs, persistent fever, marked eosinophilia, positive intradermal test and response to treatment with thiabendazol. **Edward (1954)**, considered the eye signs as an acute allergic manifestation which develops early preceding the general dissemination of the disease and that, the extraocular muscles become involved in the later stages, by which time the eye signs have subsided.

Diagnosis can be judged on the basis of clinical picture, eosinophilia and laboratory diagnosis such as the Indirect Fluorescent Antibody test which was first applied for serodiagnosis of trichinosis by **Sadun** *et al.* **(1962)**.

The aim of this study is to determine the rate of involvement of the eyes achieved by examination of the different eye muscles of *Trichina* infected swines for larvae and aqueous humour for antibodies.

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REVIEW OF LITERATURE

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Historical Review :

Discovery ;

Trichinella spiralis is a parasitic Nematode. It causes Trichinosis (trichinelliasis). It was first discovered by Paget (1835) who found round worms in human flesh. It was encysted in the muscle tissue from a patient who died from pulmonary T.B. Owen (1835) gave it its scientific name Trichina spiralis.

During the next 25 years the life cycle was clarified , (Herbst, 1851 ; Kuchenmeister, 1855; Virchow, 1859; Leuchart, 1860). In 1896 Railliet renamed the parasite Trichinella spiralis.

Taxonomy of Trichinella :

According to Faust et al. (1976) Trichinella is classified as follows :

Phylum : Nematoda (Rudolphi, 1808)

Class : Aphasmidia (Chitwood, 1933)

Order : Enoplida (Chitwood, 1933)

Superfamily : Trichuroidea (Railliet, 1916)

Genus : Trichinella (Owen,1835; Railliet, 1896)

species : Spiralis.

Britov et al. (1971), reported on the existence of three species, T. spiralis (north-temperate), T. nelsoni(tropical) and T. notivo (arctic). **Garkavi (1972)** described a species T. pseudo spiralis. Different species can be differentiated by isoenzyme electrophoresis. **Flockhart et al. (1982)**

Morphology :

Trichinella spiralis is a round worm with slender cylindrical body having a resistant cuticle, a muscle layer consisting of longitudinal fibres and a complete and permanent digestive tract. The males measures 1.4 to 1.6 mm long and are more slender at the anterior than the posterior end. The anus is nearly terminal and has a large papilla on each side of it. Acopulatory spicule is absent.Stichocytes(large cells) are arranged in a row following a short muscular eosophagus. This single row forming stichosome **(Chitwood, 1930 and Despommier, 1975).**

Females are about twice the size of males, also tapering toward the anterior end. The anus is nearly terminal. The vulva is located near the middle of the eosophagus, which is about a third the length of the body. The single uterus is filled with developing eggs in its posterior portion, where as the anterior portion contains fully developed hatching, juveniles **(Schhmidt & Roberts, 1985),**