THE ANTIBODIES TO LEISHMANIA AND TRICHINELLA IN RODENTS IN ISMAILIYA GOVERNORATE

A THESIS

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بسم الله الرحمن الرحيم

" قالوا سبحانك لا علم لنا الا ما علمتنا
انك أنت العليم الحكيم "

صدق الله العظيم

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C O N T E N T S .

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INTRODUCTION

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In the last few years , rodents have constituted a problem in some Egyptian Governorates especially in the Suez Canal zone . They are generally considered among the most destructive vertebrate animals on earth .

Rats eat about IO % of their body weight daily and contam - inate a great deal of food with their droppings and urine . (Dykstra , I966). Besides,they attack some agricultural products and cause a great loss in stored grains and rice .

Five genera of Family Muridae occur in Egypt . These are , Rattus , Mus , Acomys , Arvicanthus and Nesokia . From the medical point of view Rattus and Mus are the most important genera,especially the former one .

Generally speaking , rodents are common sources for many parasites of zoonotic importance .

Perhaps , the most dangerous parasitic diseases among these are Trichinosis and Leishmaniasis .

Trichinosis is a disease caused by the tissue nematode Trichinella spiralis . It commonly infests pigs and man and in nature the infection is mainly propagated by rodents .

Leishmaniasis includes a group of diseases endemic in many countries in the world .

These diseases are caused by the haemoflagellates, Leishmania

tropica , Leishmania donovani and Leishmania braziliensis , besides other strains .

The aim of this work is to search for and to detect antibodies to Trichinella and Leishmania parasites in the sera of collected rodents using standard serological tests .

REVIEW OF LITERATURE

CHAPTER I

TRICHINELLA SPIRALIS.

(I) Historical Review and Geographical Distribution.

Trichinosis is probably an ancient disease though authentic records are lacking.(Belding,1965). Trichinella spiralis ; the etiologic agent of trichinosis was first discovered in the encysted larval stage in the muscles of patients who were autopsied in London by Peacock (1828) , Hilton (1833) and Paget (1835). Owen (1835) was however the first who described and named the encysted larvae. The worm was regarded merely as commensal in man untill Von Zenker (1860) demonst - rated its association with a disease that follows ingestion of infected pork. He described the symptoms,lesions as well as the larval and adult worm in a young girl who had died in Dresden of " atypical typhoid ". Nowadays,trichinosis has a cosmopoli - tan distribution. To some extent however, it is less important as a human infection in the Tropics and the Orient than it is in Europe and the United States.

In the Middle East,there are some reports on trichinosis. In Israel,Witenberg (1964) reported infection among wild and domestic animals. In Lebanon,Matossian et al (1974 & 1975) reported two outbreaks among human beings. In Syria,few epidem- ics have been occasionally reported due to consumption of wild pigs.(Faust et al , 1976). In Jordan,Morsy et al (1981)

found sero-positive reactions among wild rodents.

In Egypt, Ostertag (I9I2) , Yamagoti (I959) and Swellengrebel & Sterman (I96I) reported cases of Trichinella spiralis. However, Egypt has been considered as a trichinosis free country by Wahby (I943). El-Afifi and El-Sawah (I962) could not find any Trichinella spiralis cysts among pigs slaughtered in Cairo abattoir. Selim and Yousef (I968) and Rifaat et al (I969) again gave further evidence that Trichinella spiralis is absent in Egypt. Recently, Tadros & Iskander (I975) in Cairo and El Menia , Sedik et al (I975) in Cairo and El Nawawi (I975) in Cairo, using the trichinoscope technique proved the presence of Trichinella spiralis infection in fresh pork samples. Siam et al (I979) isolated the parasite from fresh but not processed pork. Rashwan (I979) using muscle examination could detect infection in stray dogs and rodents but not in stray cats collected at piggeries in Alexandria. On the other hand, Morcos et al (I978) in Alexandria reported the first human case in Egypt. The patient was in Alexandria butshe had paid a short visit to Europe two years before being diagnosed.

(II) Morphology and Life Cycle.

Trichinella spiralis is one of the important Aphasmid Nematode parasites of man. The association of carnivorous and rodents hosts, as well as pigs and man offers Trichinella spiralis the best chances of permanent survival. (Swellengrebel and Sterman, 1961.).

The infection can spread easily among meat eaters. Its occurance in man mainly depends on the dietary habits of the population as regards the consumption of raw or inadequately cooked meat, especially pork. When man consumes raw infected flesh, the cysts are digested in the stomach and excystation of the larvae occurs in the duodenum. The larvae invade the duodenal and jejunal mucosa and develop into minute, thread-like adult males and females within two days. (Faust et al, 1976.).

The male worm, which is rarely found, measures about 1.5 mm in length and about 40 μ in breadth. The posterior extremity bears a pair of minute conical papillae shielding the terminal cloaca. The female, which is viviparous, measures about 3 mm in length and 60 μ in breadth. The vulva is situated close to the anterior extremity. (Davey and Crewe, 1973).

After fertilization, the female begins to deposit larvae. This continues as long as the mother worm is alive, over a period of four to sixteen weeks or more. (Stryker, 1947 and Carter, 1949).

The larvae get into lymph and blood and travel around in the