HEPATIC ECHINOCOCCOSIS
« HYDATID DISEASE »

THESIS

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BY

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بسم الله الرحمن الرحيم

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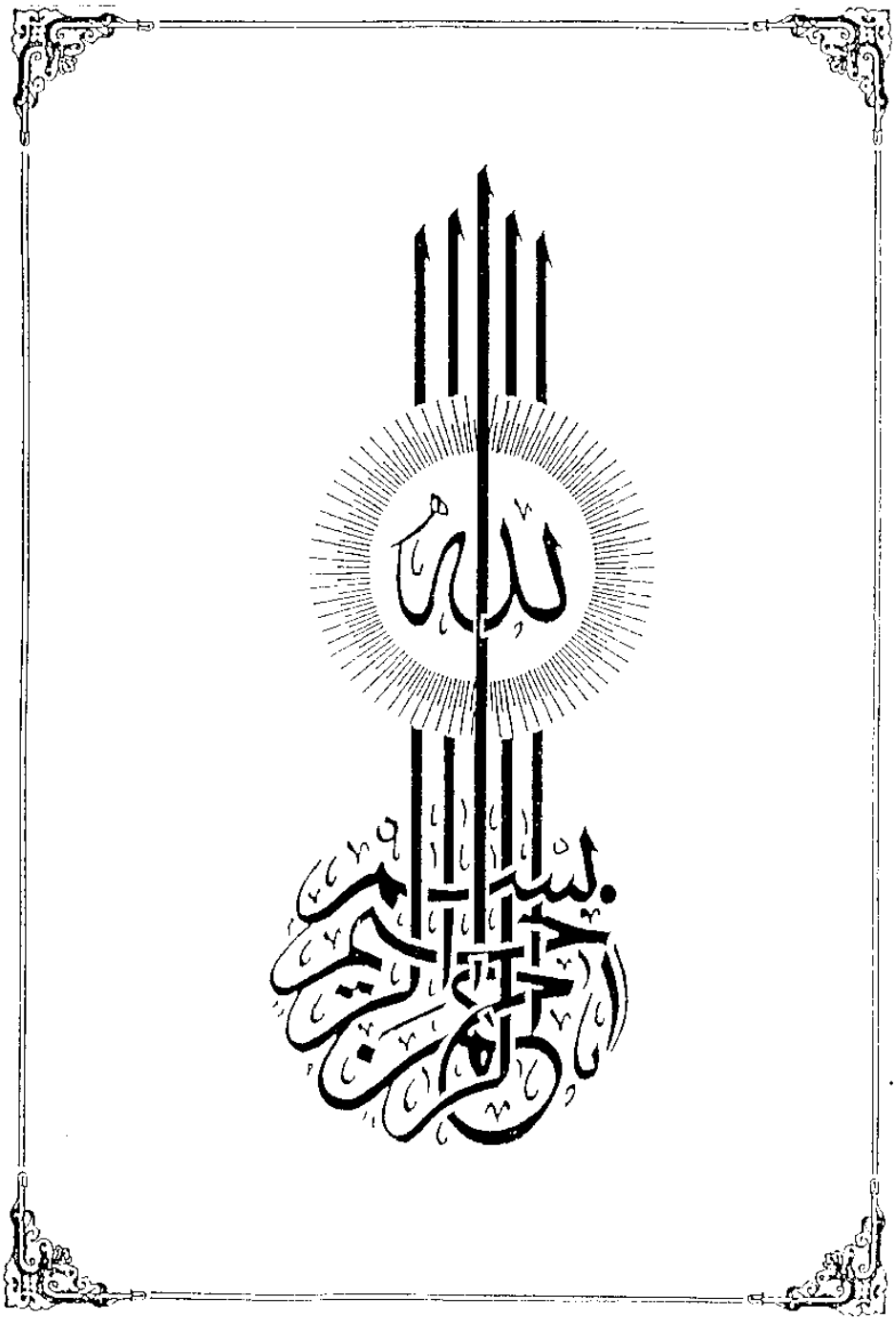

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CONTENTS

INTRODUCTION AND AIM OF WORK

Hydatid disease of the liver probably was known to Hippocrates who discribed "a liver full of water". Echinococcosis in man is an indiscriminate disease, extending from arctic to the tropics. It shows no ethnologic affinities and has no regard for age or sex.

With the modern more efficient and inexpensive means of transportation,and increase of the world population so many parts of the world have been discovered in which the disease is prevalent. On the other hand people are meeting, mixing and migrating. With this migration diseases uncommon in particular region may appear with increasing frequency, thereby confronting the clinician with perplexing diagnostic and therapeutic problems.

It seems therefore that echinococcosis is becoming wide in its distribution and this should raise alert for many reasons. Unlike other diseases, the larva on settling in the liver and/or other parts of the body keeps peaceful coexistence with the host so growing to huge size without attracting attention (Latency).

With its heavy complications and recurrences it is a burden on the national economy of those countries in which the disease is endemic, since no radical medical treatment is available.

Study of the disease is important since the only available radical treatment is surgery with highly skilled and expert surgeons.

The introduction of new technique in the diagnosis and treatment of the disease will lead to early discovery and treatment with the least possible complication, since the disease is found in a fairly defined stages and each stage requires a definite way of treatment and carries with it a certain percentage of complication.

The aim of this study is to shade light on the incidence, clinical features and different tools of investigation emphasizing on the management of the disease and its prognosis.

CHAPTER I

Historical Review

Geographical Distribution

Life Cycle

Hydatid Cyst

Surgical Pathology

Historical Review

Echinococcosis or hydatid cyst infection is one of the ancient diseases known to man. It was first described by Talmud as bladder full of water. ***(AL RHAZES 1958).***

*Hippocrates in his 55th Amphorism of section VII stated that, " when the liver is filled with water and burst into the epiploon, in this case the belly is filled with water and the patient dies.****(Adams 1946).***

Aretaeus *and* ***Gulen*** *during the first century A.D. and* ***El-Rhazes (860-925)*** *in the nineth century A.D also, made reference to this disease. During the middle ages, it was thought that the lesions were manifestations of someother morbid condition,****(DEW 1928).***

In the 17th century ***Francesco Redi(1626-1694)*** *recognised the animal orign of hydatid cyst, a few years later* ***Edward Thyson*** *(1650 - 1708) came to suspect the parasitic nature of the disease* ***DEW*** *(1928),as did* ***P.J.Hartman in (1683)*** *according to* ***Faust and Russell(1964)***

In 1782 GOeze accurately described the cyst of the tape warm and its head with suckers and hooklets,he called it ***Taenia Vesiceralis Socialis granulosa.(DEW 1928).***

In 1786 ***Batsch*** *recognised under the microscope the small larva around with a crown of hooklets.****(RALPH 1975).***

Finally in 1805 **Rudolphi** studed the adult warm in the intestine of the dogs and published a large treatise on the parasite,givining it the name **Echinococcus (Dew 1928;Ralph 1975).**

In 1853 **Sichald** in a Classical series of experiments, infected dogs with larvae of the parasite obtained from tropical hydatid cysts of sheep, thereby establishing conclusively the releationship between the adult warm in the dogs, and the cystic larval form in the sheep. This work was translated into english by **T.H.Huxley** of sydenham society of London in 1857. **Nauryn (1863)** in Berlin, **Krabbe** (1866) in Iceland and **Thomas (1855)** in Australia independantley, defined man's position in the parasite's life cycle as being identical to that of sheep by feeding larvae derived from human sources, to the dogs and recovering mature warms in this animal's intestine. **(Ralph 1975).**

The life cycle of Echinococcus granulosus had become quite clear, therefore by about the middle of the 19th century. However in 1855 the venerable German pathologist **Rodolf Virchow.** pointed out the parasitic nature of quite another liver lesions in man which, was morphologically a varient of Echinococcus granulosus. This assertion created great confusion in the world of helminthologists and pathologists, and it took another hundered years before it was established that this particular condition was due to a separate and quite distinct species of the parasite which is also capable of infecting man. **(Ralph 1975).**

The earlist report in the medical literature of hydatid cyst in man was that of **Bremser** *in 1821* **(Romero Torres and Campell 1965).**

The clinical aspects of the disease had become clarified by the early part of the 20th century, and this was also the begining of many investigations on the purely parasitological features of the condition. South american workers in particular, from the later part of the 19th century on words, accomplished brilliant work on the subject,but it remains that the two outstanding figures in this field were FALEX DÉVÉ of ROUEN,(FRANCE) and HAROLD DEW of melbourne **(Romero Torres & Campell 1965).**

GEOGRAPHICAL DISTRIBUTION

The first human case of Echinococcus granulosus in North Amercan contenent was observed by low in 1808 and reported in 1822(Lyon). Sir William Osler reviewed 61 cases in 1882. The first autochthonous case in the United States was reported in 1951 (TUCKER), by 1958 KATZ and PAN has collected 556 cases from the U.S of which only 38 were considered to be a native cases, the remainder being immgirants. However the disease readily transmitted from sheep and dogs to man whenever zoonotic condition prevail. (TUSCHKA 1969).

The parasite is actually found in every country of the world, and the distribution of the parasite greatly favour its survival and propagation in nature.(Williams et al 1971)

Occurance of the disease in man appears to be limited geographically to areas where close and continuous contact exists between carnivores such as dogs and imgulates such as cattle and sheep. Accordingly North Africa, Middle East, East Africa, Australia, New-zealand and South America have for many years been considered the endemic regions of the world. (Williams et al 1971).

The Middle East and East Africa frequently cited as among those of the world in which, hydatid disease is most prevalent although published evidence of this is limited (SCHWABLE AND DAOUD 1959).

In Egypt human Echinococcosis had been recognised for many years. Cahill et al 1965 reported a prevalence of 3.8% among the healthy

individuals from rural areas of upper Egypt in contrast to a zero prevalence in lower Egypt.

The raising of life stock, keeping of sheep, nomadic tribal life, and in general access of dogs to the entrails of slaughtered sheep and cattle, readily perpetuate life cycle of the parasite.

Man is an accidental intermediate host. It has been shown that dogs can not reach slaughtered life stock, and their contact with man is reduced or eliminated. The disease diminshes or disappears spontaneously over a number of years.

In Iceland where for centuries most people lived as sheep breeders Echinococcosis was prevalent for many years. About one in seven persons carrying the cyst in the middle of the 19th century. By 1940 however only four cases were reported from Iceland (DUNGAL 1957). A significant decline in the overall incidence, though not eradication of the disease, has also been experienced in Australia and Newzealand. The geographical distribution of the disease accordingly does not follow any mysterious forces and the term Endemic must be viewed in its relative sense. World maps delineating endemic areas with appropriate shading are of no great value to epidemiologist. Such maps should be revised at least once every twenty years, as many rural areas in developing counteries are rapidly transfered into urban centers, while other regions are reclaimed for agricultural purposes. ***(William et al 1971).***

Kenya(Turkana) *district is Considered the most heavily infested area in the world* ***(CHEMTAI, A. et al 1982; FRENCH & NELSON, 1982).*** *The incidence varies from 198/100.000 which is five times higher than elsewhere in the world, to 17/100.000* ***(FRENCH & NELSON, 1982).***

In ***ETHIOPIA*** *the southwest part has got also high prevalence* ***(FULLER,G & FULLER,D,1981).***

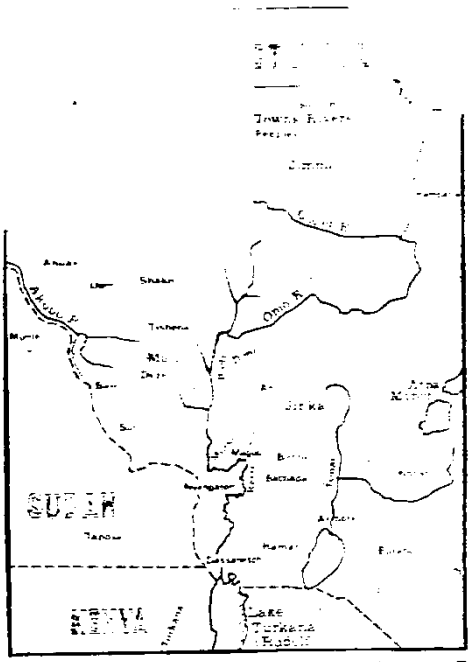
In South Sudan Taposa area and murle area are the two areas from where cases of hydatid cyst are seen frequently both in rural and central hospitals. These two areas as seen in the maps Fig 1 & 2 are in close contact with most heavily infected areas in both Kenya and Ethiopia. This may explain the prevalence of hydatid disease in people of those two districts since, the interrelation between the border tribes, the open borders with no natural obstacles, people having the same habits and tradition regarding marriage and food habits,also people work as cattle and sheep breeders which necissitate wondering with it from place to another and they share their neighbours in same areas their water supply which are usually pits containing rain water.

In Sudan 26% of the domestic rumnants were reported to be infected at slaughter ***(William et al 1971).***

"In my openion, with all this in mind and added to it home slaughter for personal consumption, which is the case in some parts of the north and the majority of southern region this percentage may increase."

What is important to the surgeon in so called endemic areas of the world is to recognize that any tumerous mass felt anywhere in a patient on physical examination,can be a hydatid cyst. Similarly the clinical significance of a patient having travelled to or resided in a sheep and cattle raising area at some time in the past should be equally clear to the surgeon practising in non endemic regions.

Fig(1):



Maps shows relation of South Sudan and Kenya-South West Ethiopia above after ***Fuller G*** *and* ***Fuller D 1981-Below after French Nelson,1982***

Fig(2):