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PARASITIC DISEASE IN CLINICAL PRACTICE

G. C. Cook

With 60 Figures

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Series Editor's Foreword

Parasitic Disease in Clinical Practice is the sixth monograph to appear in the now established and flourishing Bloomsbury Series in Clinical Science. Written by a distinguished authority in the field, the book gives a comprehensive and detailed description of parasitic infections and their clinical consequences.

Such infections are no longer confined to tropical parts of the world and now have a widespread distribution. Rapid advances are being made in understanding their epidemiology and in diagnosing and treating particular infections. Current literature is largely directed to the parasites, their characteristics and their isolation; a clinical review is clearly needed. This has now been provided, for the author's stated objective is to "inculcate a greater awareness, understanding and appreciation of human parastic disease in the minds of all clinicians".

London, March 1990 Jack Tinker

Preface

Homo sapiens has always existed in a finely balanced equilibrium with a great diversity of infective agents, almost all of them of great antiquity. Many must have exerted a profound effect on the evolution of the human genome. While the average physician is usually aware of potentially pathogenic viruses, bacteria (and rickettsia), and to a lesser extent fungi, his/her knowledge of protozoan and helminthic infections is frequently imperfect and often rudimentary. But the question does get asked from time to time: could this be parasitic? These infections account for morbidity and mortality in the world's developing countries on a vast scale; malaria, schistosomiasis and amoebiasis are perhaps the most important numerically. They are certainly not confined in their geographical distribution to tropical locations, however; they are present in temperate zones too, and in parallel with a huge expansion of overseas travel and tourism has come a rapid increase in their prevalence in northern Europe. They also present a major problem in some members of the immigrant (minor ethnic) groups. Immunosuppression is now a commonplace clinical state (and that induced by chemotherapeutic agents and malignant processes is being rapidly overshadowed by that caused by the HIV-1 and HIV-2 retroviruses) and a greatly enhanced awareness of the relevant parasitic infections (many of them protozoan) is clearly of paramount importance. Zoonotic parasitoses are also widespread in the United Kingdom; *Toxoplasma gondii* infection is important during pregnancy, *Toxocara canis* in infancy and childhood, and *Echinococcus granulosus* (which still exists in western England and Wales), are but three examples. Some parasites are well adapted to the human host and live in an almost symbiotic relationship; others (*Plasmodium falciparum* is an excellent example) have so far failed in this respect and severe morbidity and even death of the infected individual results.

Descriptions of helminthic infections date back thousands of years, but visualization of the protozoa was dependent upon the early microscopists; van Leeuwenhoek visualized *Giardia lamblia* in 1681. It was, however, the great advances in description and taxonomy in the nineteenth century, culminating in the exciting discoveries of man–mosquito cycles by Sir Patrick Manson (*Wuchereria bancrofti*) and Sir Ronald Ross (*Plasmodium* sp), which led to the development of parasitology (the lumping together of protozoology with helminthology is not easily explained) which became a science quite separate from microbiology. In the latter days of Empire and Raj, Great Britain pioneered *clinical* parasitology (a discipline which was closely associated with tropical or 'colonial' medicine). Today, the clinical parasitologist is a very rare breed indeed and is in fact an endangered species.

The last two decades have seen major advances in the understanding, diagnosis, and management of human parasitic disease. Immunological and molecular biological approaches have made significant contributions, although the quest for safe and effective vaccines for protozoan and helminthic infections alike remains a distant dream. A number of the hitherto unknown factors in the host–parasite equation are beginning to reveal their secrets. Serodiagnosis has improved beyond all recognition, and lengthy searches for visual evidence of the parasite itself (adult parasites, larvae, eggs or cysts) is often no longer strictly necessary. Chemotherapy remains difficult in the case of some of the 'exotic' infections with a specific geographical distribution (e.g. trypanosomiasis and leishmaniasis); however in several others (e.g. neurocysticercosis and schistosomiasis) advances have verged on the spectacular. There are very few examples on the other hand of major developments in the eradication of parasitic diseases in either developing or developed countries, even in localized geographical locations.

The resultant diseases encroach into all of the ramifications of general medicine, and also all the clinical specialities. It is therefore essential that not only physicians but all those involved in patient care should develop a high 'index of awareness' for these infections. The major objective of this monograph is therefore to inculcate a greater awareness, understanding and appreciation of human parasitic disease in the minds of all clinicians (and that certainly includes both undergraduate and postgraduate students).

I make no apology for beginning with malaria, which still claims the lives of many unfortunate travellers; the 'opportunistic' infections associated with AIDS are I hope allocated their due amount of space; I have relegated the 'exotic' infections to the last chapter, not because I consider them unimportant but because they form a very small tip of a very large iceberg of parasitoses as seen in

northern Europe. For the most part I have used a system-oriented approach.

I thank Miss Andrea Darlow for drawing the parasite life-cycles, the staff of the CT-Scanning Department of University College, London, and that of the Electron-Microscopy Department, London School of Hygiene and Tropical Medicine, for many illustrations, and Mrs Jayne Ball for typing the entire manuscript.

London, September 1989 G. C. Cook

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