Parasitoses are a large group of infectious diseases with diverse host assemblages and transmission patterns. In Japan, after World War II, the nationwide campaign which was enforced by the new public health knowledge against parasitic diseases successfully controlled the classical soil-transmitted parasitoses such as ascariasis, trichuriasis and hookworm diseases. Some other diseases such as domestic malaria, schistosomiasis and lymphatic filariasis were successfully eradicated (1). Both human and environmental factors can influence the status of parasitic diseases in distribution, prevalence and transmission patterns, as well as the emergence of new ones. In Japan today, much attention has been given to the water- and food-borne parasitic diseases and parasitic zoonoses which are emerging and re-emerging because of growing international markets, improved transportation systems and demographic changes such as population movements. Preferential food-habits of the Japanese society consuming raw foods are also largely contributing to the increase in both food-borne parasitoses and zoonoses. For instance, the increase in food-borne helminthiasis, especially of anisakiasis and diphyllobothriasis, is attributed to the eating of raw fish. Other food-borne helminthiasis, especially of zoonotic nature and/or larva migrans, are prevalent in several regions in Japan. These include visceral larva migrans of \textit{Ascaris suum}, paragonimiasis and sparganosis. Cryptosporidiosis and giardiasis, which are protozoan parasites that can lead to outbreaks of diarrhea, are acquired through ingestion of contaminated water. Classical soil-transmitted parasites such as \textit{Ascaris lumbricoides} and hookworms are still present, albeit at low levels, mainly acquired from foods contaminated with these parasites.

In this issue of Internal Medicine, a very interesting case is reported by Kajiya et al (2). An 87-year-old man who had had dyspnea on exertion and edema was admitted for evaluation of severe anemia. Gastrointestinal bleeding was suspected to be the cause of anemia, and gastroenteroscopic examination disclosed a hookworm infection in the duodenum. Drug treatment diminished these symptoms. Although hookworm infection is suspected to cause heart failure, many internists in advanced countries do not consider this infection as a leader of heart failure.

In parasitic diseases, the severity of the pathology is associated with both the intensity and duration of infection as well as the location of the lesions. It is worth emphasizing that hookworm infections are common throughout much of sub-Saharan Africa, South China and Southeast Asia (3). \textit{Necator americanus} and \textit{Ancylostoma duodenale}, which are the most important hookworms of humans, live in the intestine of humans, attaching to the mucosa and feeding on blood and tissue fluids sucked from it (4). Hookworm disease manifests three main phases of pathogenesis: the cutaneous or invasion period, the migration or pulmonary phase and the intestinal phase. The intestinal phase is the most important period of pathogenesis and anemia is a common symptom of this phase. Anemia is also common in chronic heart failure (5), and the presence of anemia may simply be a marker of the greater severity of heart failure or the greater burden of comorbidity (6).

Generally, several transmission patterns are involved in parasitic diseases; water-borne, plant food-borne, fresh-water fish-borne, salt-water fish-borne, invertebrate food-borne and meat-borne infections. Most helminthic infections are acquired through eating food or drinking water contaminated with parasite eggs. Since helminth eggs from human or animal hosts are discharged in the host feces, vegetables grown in soil irrigated by sewage water or the use of night soil as fertilizer may be the source of soil-transmitted helminthic infections. Disease due to contaminated food is a widespread health problem and an important cause of reduced economic productivity. Food-borne parasitic infections are associated with socio-cultural practices and are increasing in non-endemic areas because of the development of international trade and travel, and an increasing availability as well as interest in ethnic foods. The rapid transport and cool storage facilities enable the survival of parasites in food as well as of surface contaminants. In addition to the above-mentioned water- and food-borne parasitic infections, imported parasitic diseases such as malaria, cysticercosis and creeping eruption caused by larval dog hookworm have also increased in Japan (7). However, parasitic zoonoses are
often misdiagnosed as malignant diseases and thus the correct diagnosis and appropriate treatments are highly recommended. The genesis of this paper stemmed from a desire to draw attention to the problem of increasing parasitic diseases in Japan.

References


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