Re-emergence of Paragonimiasis

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Presently not only lay people but also most medical professionals often ignore the presence of parasitic diseases in Japan because of successful eradication of soil-transmitted intestinal helminth infections such as ascariasis and some vector-mediated endemic diseases such as malaria, filariasis and schistosomiasis within the past 50 years. However, this is not really true any longer because various parasitic diseases, especially food-borne zoonotic parasitoses, have emerged/re-emerged in this country (1). Paragonimiasis is a typical example of re-emerging food-borne zoonotic parasitoses in Japan. It was prevalent in the south-western parts of Japan especially in the southern Kyushu District (2). Miyazaki Prefecture was a representative endemic area in the 1950s. After mass screening and prevention campaigns by the local government during the 1950–60s, the prevalence of the disease drastically decreased (3). In the 1970s, paragonimiasis was considered a disease of the past in Miyazaki and, probably in other endemic areas in Japan. However, from the late 1980s, new cases began to emerge sporadically in these previously endemic areas (4). Subsequently the number of patients gradually increased with time and now paragonimiasis has become a major parasitic disease in southern Kyushu (1). During 1986–1998 we encountered 104 paragonimiasis cases, most of which were referred to our laboratory for immunodiagnosis (5). Even 1999 alone, we have recorded 30 cases (unpublished data).

The clinical features of paragonimiasis include cough, rusty sputum, and hemoptysis. By radiological examination, nodular or cavitating lesions in lungs with/without pleuricy are commonly seen in patients, though none of these pictures are unique for paragonimiasis (6). In the past, a majority of the patients were school children without obvious sex differences and those having multifocal lesions like that reported by Ashitani et al in this issue (7) were not rare.

Among the 104 cases we encountered during 1986–1998, the majority of the patients were middle-aged males and most patients had chest radiographic abnormalities. However, about 45% had a single unilateral nodular/cavitating lesion and 35% had unilateral pleuricy. About 10% had pleuroparenchymal lesions, most of which appeared on the same side. Bilateral involvement of the lungs was seen in only 5 cases and simultaneous appearance of cutaneous and lung lesions was seen in only 2 cases, and one out of 104 patients had bilateral lung lesions with a cutaneous lesion, though that case was P. miyazakii infection (8), whereas that reported by Ashitani et al in this issue (7) was P. westermani infection.

In Japan both P. westermani and P. miyazakii are the etiological agents of human paragonimiasis, though infection with the former is much more frequent than with the latter. It has been believed that the characteristic radiologic findings of P. westermani infection is nodular or cavitating lesions in the lungs while that of P. miyazakii infection is pleuricy. However, our study (5) revealed that this concept is no longer applicable because the prevalence of parenchymatous and pleural lesions were almost equally seen in infections with either species. Rather, these clinical manifestations seem to depend on the stage of infection; pleuricy in the early stage and parenchymal lesions in the later stage (5).

It should be noted that about 20% of our recent cases were asymptomatic and parasite egg detection rates in sputum or bronchoscopic aspirates were about 50% (5). Among the 104 cases we recorded, 102 were positive for parasite-specific IgG antibody in serum and/or pleural effusion, showing the usefulness of immunodiagnosis. Two exceptional seronegative cases were of chronic occult infection in an unexpected site, the liver (9) or peritoneral cavity (10). As usual with helminth parasite infections, eosinophilia and/or an elevated serum IgE level were commonly seen in paragonimiasis patients. In our study (5), about 80% of patients had eosinophilia or elevated serum IgE level. Therefore, paragonimiasis should always be included in the differential diagnosis for patients having lung lesions associated with eosinophilia and/or elevated IgE level, especially for those living in endemic areas or who have had a history of traveling around endemic areas. Because rapid and reliable immunodiagnostic methods are available (11) and chemotherapy with praziquantel at a dose of 75 mg/kg/day for 3 days is quite successful (12), unnecessary admission under suspicion of malignancy or invasive examination or treatment with surgical approach must be avoided for paragonimiasis patients.

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References


