

Research Note

**Pathogenic *Entamoeba histolytica* Infection in a Steady Couple of Japanese Homosexual Men**

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Our previous seroepidemiological studies (Takeuchi *et al.*, 1987; 1989; 1990) and zymodeme analysis (Nozaki *et al.*, 1989) on amebic infection in Japan led us to have the view that pathogenic strains of *Entamoeba histolytica* were spread among the male homosexual population. However, we have had no clinical cases of Japanese homosexual couple with invasive amebiasis as an evidence of sexual transmission of pathogenic *E. histolytica*. We herein report the occurrence of such a Japanese homosexual couple, which appears to further support our view mentioned above.

**Case 1**

A 39 year old Japanese male residing in Tokyo visited a hospital with chief complaints of fever and right abdominal pain on August 22, 1989. An immediate administration of antibiotics and analgetics did not relieve his symptoms. Because subsequent whole body CT and ultrasonography

showed the presence of a low density mass in the S6 region of his liver, he was sent to Keio University Hospital for further medical care on August 26.

We found nothing noteworthy about his family and past medical history; however, he had been a practising homosexual for several years. On admission, he had a fever (39.9°C) and a pain in the right upper portion of his abdomen with a moderate tenderness. The number of peripheral leucocytes was 12,000/mm<sup>3</sup>, and CRP was positive. Serologically, TPHA, HBsAg, HBsAb and HIVAb were all negative. At first, on the basis of these data as well as findings by CT and ultrasonography, we diagnosed the case as bacterial liver abscess and placed a drainage into the liver lesion under an ultrasonographic guide, followed by oral administration of an antibiotic, Shiomarin 4g daily; however, these symptoms were not relieved. In addition, bacterial culture of the abscess fluid and blood was unsuccessful throughout. On August 31, accordingly, the abscess fluid was examined for the presence of *E. histolytica*. An immediately conducted microscopic observation indicated the presence of a few, but actively motile trophozoites of ameba, which were morphologically identified as *E. histolytica*. Serologic examination also showed that the gel diffusion precipitin test (GDP) (Takeuchi and Kobayashi, 1983) and the enzyme-linked immunosorbent assay (ELISA) (Takeuchi *et al.*, 1988) were strongly positive, which led us to change the diagnosis to amebic liver abscess. The ameba was not detectable in his stool

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specimen despite repeated microscopic examination, and the culture of ameba utilizing his stool and Robinson's medium (Robinson, 1968) was not successful, which made the zymodeme characterization impossible. This case was treated with oral administration of metronidazole 1.5g daily for 10 days.

### Case 2

This was a 29 year old Japanese male homosexual who was a steady sexual partner of case 1. He was informed of the amebic liver abscess of case 1, and immediately visited our hospital for the purpose of examination of amebic infection. Although he had no appreciable clinical symptoms, trophozoites and cysts of ameba, also morphologically identified as *E. histolytica*, were detected in his stool specimen, and GDP and ELISA were found to be strongly positive. The ameba could be isolated and the isoenzyme profiles were examined to characterize the zymodeme according to Sargeant's method (Sargeant and Williams, 1978; Sargeant, 1988), which indicated zymodeme XIX, a pathogenic zymodeme. These findings suggest that the case was in the "pre-patent" period of amebic infection proposed by Sargeant (1987). This case was treated in the same manner as in case 1.

Epidemiology of sexually transmitted amebiasis of homosexual men has been well investigated in western countries and Japan. There seems little doubt that sexually transmitted amebiasis has had a significant role in the recent increase in prevalence of amebic infection in these countries (Marr, 1981; Takeuchi *et al.*, 1983). However, we suggested a distinct difference in the epidemiological aspect of this unusual sexually transmitted disease between western countries and Japan. In western countries, virtually all of the strains of *E. histolytica* circulating among the male homosexual population seemed non-pathogenic, which was supported by serologic studies (McMillan *et al.*, 1984), zymodeme analyses (Goldmeier *et al.*, 1986; Mathews *et al.*, 1986; Proctor *et al.*, 1987) and clinical data (Quinn *et al.*, 1983; Markell *et al.*,

1984). In Japan, however, more than 50 homosexual men with invasive amebiasis have already been found. Moreover, we showed a high correlation between positive syphilis serology with invasive amebiasis in Japanese cases (Takeuchi *et al.*, 1987), and disclosed that the seropositivity of Japanese homosexual men for amebic infection was much higher than that of heterosexual men and female prostitutes (Takeuchi *et al.*, 1989; 1990). In addition, pathogenic zymodemes have been detected in the ameba isolates from homosexual men in Japan (Nozaki *et al.*, 1989). These findings are not incompatible with the view that pathogenic *E. histolytica* is frequently responsible for sexually transmitted amebiasis in Japan. Although the definitive reason of this difference is not known at present, our recent zymodeme characterization of numerous ameba isolates from Japanese cases with amebic infection led us to envision that a close geographic correlation of Japan with Indian subcontinent and probably Southeast Asia may affect the unique epidemiological aspects of amebiasis in this country (Kobayashi *et al.*, 1990).

Since the present two subjects denied sexual contact with other homosexual males, it seems likely that they were infected with their own oral-anal sexual contact. This appears to be the first steady male homosexual couple with invasive amebiasis in Japan, which probably supports our view mentioned above. Although an example of cohabiting homosexual men with positive amebic serology was reported in the United Kingdom (Burnham *et al.*, 1980), the epidemiological observation on the pathogenicity of ameba in the male homosexual communities in western countries suggest that the couple in the UK was exceptional and sporadic.

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