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Letter to the Editor

Liver abscess caused by coexisting *Salmonella enteritidis* and *Entamoeba histolytica* in a HIV-infected patient

Dear Editor,

Liver abscess may cause severe illness in immunocompromised hosts, and the management depends on the etiologies, often either bacteria or ameba. The differentiation of pyogenic and amoebic liver abscess is important, since clinical therapeutic strategies are different for pyogenic or amoebic liver abscess, and liver abscess simultaneously caused by both types of pathogens is rare. Here we presented a case of liver abscess caused by *Salmonella enteritidis* and *Entamoeba histolytica*.

A 51-year-old man with hepatitis B virus infection and Gilbert's syndrome presented with intermittent fever for four days and body weight loss by 9 kg. Physical examination revealed oral candidiasis. HIV-1 infection with a CD4 lymphocyte count of 88 cells/μL was found. Blood cultures yielded *S. enteritidis* serogroup D. Abdominal echo showed a hypoechoic mass on left hepatic lobe and subsequent computed tomography scan revealed a cystic lesion of 6.4 cm in diameter with a thin enhancing wall (Fig. 1). Parenteral cefotaxime and metronidazole were administered empirically. *S. enteritidis* grew in drained pus from liver abscess and a high serum titer of amoebiasis antibody by latex agglutination, >1:1024, were noted. Though no amoebic parasite was found in stool by microscopic examination, the genetic element of *E. histolytica* was detected by polymerase chain reaction (PCR) using the Eh1-Eh2 primers, as described previously,[1] in drained pus. After antibiotic treatment, including initial cefotaxime and subsequent cefixime, metronidazole, and paromomycin, and antiretroviral therapy, his condition improved. Liver abscess resolved uneventfully after discharge.

The management of liver abscess generally categorized into amoebic and pyogenic abscess varies with the etiologies. Uncomplicated cases of amoebic liver abscess can be treated successfully by antimicrobial agents alone, but pyogenic liver abscess usually requires percutaneous or even surgical drainage, in addition to antimicrobial therapy. Therefore, early and correct differentiation of amoebic from pyogenic liver abscesses is crucial. Previous research focused on the features distinguishing amoebic from pyogenic liver abscess. For example, patients with pyogenic abscess are more likely to be aged >50 years, hypoalbuminemic as compared to amoebic liver abscess, and multiple abscesses are suggestive of pyogenic infection.[2] Coinfections with two etiologies were rare and there was only one case of liver abscess caused by *E. histolytica* with *Salmonella* species reported in the English literature since 2000.[3] However, the diagnosis of amoebiasis was based only on serological test. Since antibodies to *E. histolytica* could persist for years, it is difficult to distinguish recent from remote infections, solely based on serological tests. Thus, co-infection could be questionable. To our knowledge, this is the first case of concurrent salmonella and amoebic liver abscess, well documented by blood and pus cultures for salmonellosis, and serological data and a positive PCR result in drained pus for amoebiasis.

The coexisting two pathogens in a liver abscess was suspected to be attributed to secondary bacterial infection of an amebic liver abscess or coinfection due to an inefficient immune function.[3] Previous investigators have proposed some mechanisms as explanation for the association of schistosomiasis and pyogenic liver abscess: (1) liver necrosis caused by eggs or dead worms of *Salmonella mansoni* could be colonized by bacteria; (2) transient impairment of the cell mediated immunity in the acute phase of schistosomiasis.[4] The reason for concurrent amebic and *S. enteritidis* liver abscess in this patient may be similar to the association between schistosomiasis and

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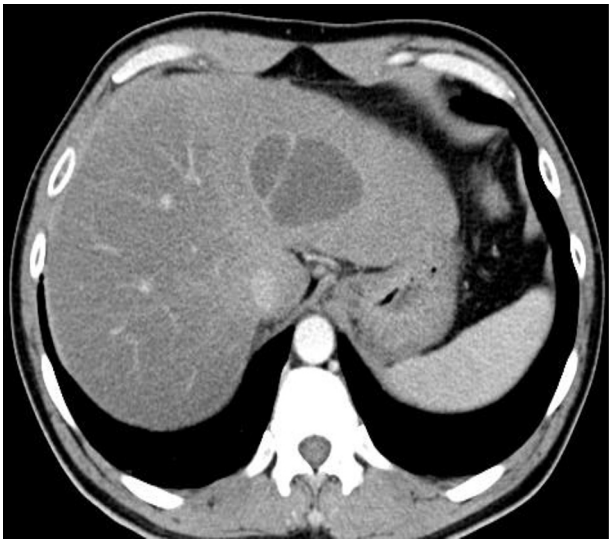

Figure 1. Computed tomography revealed a cystic lesion about 6.4 cm with a thin enhancing wall on left hepatic lobe.

pyogenic liver abscess, and CD4+ T-cell depletion may further put the HIV-infected patient at a higher risk for infection by *Salmonella* spp. and *E. histolytica*. In addition, because non-typhoid Salmonella (NTS) bacteremia causes high mortality for HIV-infected individuals, and patients with poor virological suppression were more likely to have recurrent NTS bacteremia,[5] we should pay more attention to this population. Though rare, this case reminds physicians the possibility of concurrent pyogenic and amoebic liver abscess among immunocompromised hosts.

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