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Amoebic liver abscess in a male homosexual

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Introduction

Amoebiasis is caused by *Entamoeba histolytica,* an intestinal protozoan which infects 50 million individuals globally. In Sri Lanka the commonest mode of transmission of intestinal amoebiasis is via contaminated food and water. There are no other modes of transmission reported in Sri Lanka. Amoebic Liver Abscess (ALA) is the most common extra intestinal manifestation of invasive amoebiasis (1).

Faciliatory factors of the spread include poor hygienic/ sanitary practices, middle age, male sex and over-crowding (2). In Northern Sri Lanka most patients with ALA had a history of consuming palmyrah *(Borassus flabellifer)* toddy, a local alcoholic beverage made from fermented sap. Homosexual men, men who have sex with men (MSM) and those engaging in oro-anal sex are potential high risk factors for *E. histolytica* infection. We report a case of ALA identified in a homosexual man British nationality. As of now this is the first report in Sri Lanka of amoebiasis in a homosexual man.

Case presentation

A 37-year-old British male presented with fever with chills and rigors for 2 weeks duration. There was a dull non-radiating pain in the right hypochondriac region with significant weight loss (5 kg over 1 month) and anorexia. There were no other systemic symptoms.

He had homosexual practices including anal intercourse, anilingus and receptive fellatio. He reported multiple casual and commercial sexual encounters with males while he was residing in China, Thailand, India and Africa prior to arriving in Sri Lanka with his husband. He had not had any sexual encounters with any other males in Sri Lanka and denied drinking palmyrah toddy. There was a febrile illness with passing out blood and mucous with faeces (dysentery) two years back when in China which had resolved spontaneously. There was no significant past medical history of chronic diseases such as diabetes mellitus, immunosuppression, or recurrent or atypical infections. He has tested negative for Human Immunodeficiency Virus (HIV) three months back and was on tenofovir and emtricitabine as pre-exposure prophylaxis (PrEP). The patient practised stringent hygienic practices in food preparation for self and did not consume cooked or uncooked food outside including street food in his routine.

He was febrile (101 ^{0}F) with no pallor or icterus. There was no lymphadenopathy. There was a tender hepatomegaly with a lobulated presentation in absence of splenomegaly, ascites or stigmata of chronic liver disease. There were no intercostal tenderness. The rest of the systems examination. His full blood count demonstrated haemoglobin 11.2 g/dL (12-15), white blood cell count of 9.7 x 10^{9}/L (4 - 11x10^{9}) with normal differential counts and platelet count of 568 x 10^{9}/mm^{3} (150 - 450 x 10^{9}).

The C-reactive protein (CRP) was 182.1 mg/L (<6) and erythrocyte sedimentation rate (ESR) were 70 mm in the first hours. The liver function tests revealed alanine aminotransferase (ALT) of 24 IU/L, aspartate aminotransferase (AST) of 15 IU/L, alkaline phosphatase test (ALP) of 100 IU/L, and gamma-glutamyl transferase (GGT) of 64 IU/L. The blood culture was negative.

Ultrasound scan (USS) revealed a 7 x 6 cm right lobe hepatic abscess which was aspirated. Direct microscopy for amoebic cysts in faeces and trichrome staining for trophozoites in faeces and abscess aspirate were negative for *E. histolytica.* Aspirate taken from the hepatic abscess was sent to the Department of Parasitology, Faculty of Medicine, University of Peradeniya, Sri Lanka for amoebic culture and polymerase chain reaction (PCR) specific to *E. histolytica.* Aspirate did not yield any growth. However, the PCR demonstrated positivity for *E. histolytica*. A nested PCR identifying serine rich protein coding gene (SREHP) of *E. histolytica* was used. A set of primers (SREHP-5 and SREHP-3) which amplify a 549-bp fragment of the SREHP gene was employed for the initial PCR, followed by a second set of primers (nSREHP-5 and nSREHP-3) located within the previously amplified fragment. This nested PCR resulted in a 450-bp fragment (3). Serology for *E. histolytica* could not be performed due to logistic reasons. The patient's current HIV status by antigen and antibodies were normal and the serology as well as culture for melioidosis were negative.

The patient was 85 kg in weight and was treated intravenous metronidazole 750 mg t.d.s. for 10 days. Intravenous co-amoxiclav 1.2 g t.d.s. was also administered empirically considering possible secondary bacterial infection. The patient improved clinically, and his CRP reduced to 6 mg/L in 7 days accompanied with defervescence by the 4th day (Figure 1). He remained asymptomatic and was well at one month's follow up**.** The patient was reviewed at 6 months, whereat a repeat ultrasound done showed complete resolution of the abscess.

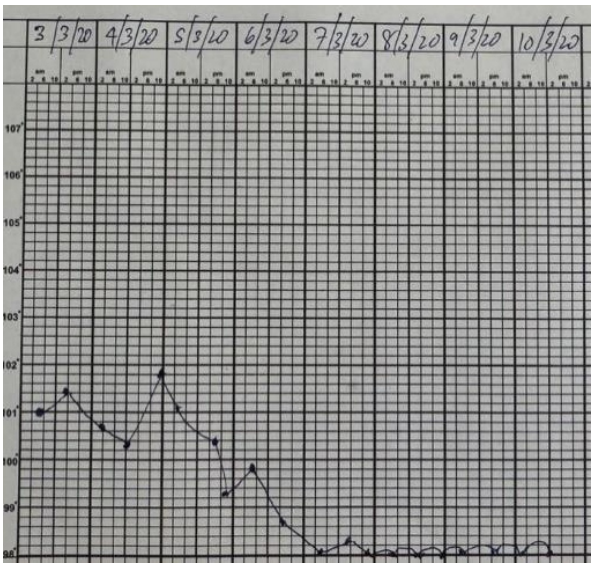

Figure 1: Fever chart of the patient

Discussion

Invasive amoebiasis can give rise to amoebic colitis as well as ALA although asymptomatic states may be present in a greater degree. Invasive disease is associated with greater morbidity and a burden on health care.

Sexual transmission of intestinal pathogens among MSMs was recognised since 1960 (4). The mechanics of transmission are consequence of oral-anal sexual activity that makes faeco-oral acquisition conducive (5, 6). Sporadic outbreaks of *E. histolytica* were described even in a non-endemic country such as Spain among MSM (7). A study in New York demonstrated 1 in 5 homosexual men had positive stool microscopy in comparison to 1 in 20 and null in bisexual and heterosexual males respectively (8). Seroprevalence of *E. histolytica* among Chinese MSM practicing receptive-anal intercourse and sadomasochistic practices is very significant with 41% prevalence (9). Same sex practices as well as oro-anal relationships are shown to be significant risk factors for acquisition of amoebiasis (10).

This patient reported an episode of dysentery in China. He has also travelled to Thailand, Africa, and India and has had casual and commercial homosexual practices. He had been naturalised in the Northern Province of Sri Lanka for two years

with his husband where there is a high risk of *E. histolytica* infection. The mode of transmission of *E. histolytica* in this patient cannot be confirmed with certainty. He may have acquired it through contaminated food or water which is the most common mode of transmission. However it may be possible that he may have gained it through oro-anal sexual activity or by both.

Although infection rates of *E. histolytica* in MSM are high, 90% of the infected patients are asymptomatic (11). The most common clinical features of ALA in symptomatic patients are right hypochondriac pain (92.1%), fever (88.6%) and tender hepatomegaly (78%) as in our patient (9).

Abdominal USS is the most widely used first-line imaging method in patients with symptoms of hepatic amoebiasis (12). The abdominal Computerized Tomography (CT) scan is another important imaging method, with greater resolution and sensitivity in detecting liver lesions, especially the smaller ones, which is useful in early diagnosis. Microscopy for *E. histolytica* cysts or trophozoites in faeces is not specific and can be confounded with asymptomatic carriage, particularly of *Entamoeba dispar* (9). PCR is sensitive and specific to *E. histolytica* and is useful in confirming the diagnosis of ALA if aspirated pus is available (13). A study comparing real time PCR with coproantigen and salivary IgA showed a sensitivity and specificity of 93.3% and 100% respectively (14). Similarly, another study demonstrated a sensitivity of 93.5% and specificity of 100% for quantitated PCR comparing with other conventional diagnostic tests for ALA (15). Nested PCR also has an overall superiority in comparison with microscopy and serology (16, 17). In our patient, faeces was negative for *E. histolytica* which was attributed to degeneration of parasitic material due to delay in dispatch and preparation. However the diagnosis of ALA was confirmed by PCR of the aspirate.

Metronidazole is the standard treatment for ALA. The recommended first line treatment for patients with ruptured ALA is percutaneous drainage. Conservative treatment is commonly recommended for patients with unruptured ALA. In this case the abscess was aspirated and he was treated with metronidazole for ten days.

Studies have shown that hygienic practices such as douching, cleaning of the anus prior to sexual activity are associated with lower prevalence of the infection (6). Usage of enemas, wet-wipes, cleaning devices before sexual activity as well as condoms and oral should be motivated in individuals practising MSMs to avoid faecal contamination. This will ensure clean and hygienic states along with enhancement of sexual performance (18). Strategies such as these need to be motivated among such individuals in a targeted manner as a public health measure.

Conclusions

This case, the first report of ALA among MSM in Sri Lanka to our knowledge, highlights the importance of detecting invasive amoebiasis. Individuals who practise homosexual practices may acquire the disease by oro-faecal mode which may be facilitated by sexual practices. Successful diagnosis can be carried out by radiological means and PCR for amoeba. The latter has superiority compared to conventional diagnostic modalities. While successful treatment can be achieved by metronidazole, targeted behavioural modification need to be motivated in individuals with high-risk sexual activity to prevent the spread and occurrence of similar presentations.

Limitations

The collection, dispatch and preparation of aspirate from the clinical setting in Colombo to the laboratory in Peradeniya took over 24 hours. This may have been the reason as to why the aspirate culture did not show any growth. We were unable to do serology for *E. histolytica* in this patient due to unavailability. It is a limitation in our case study.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report.

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