

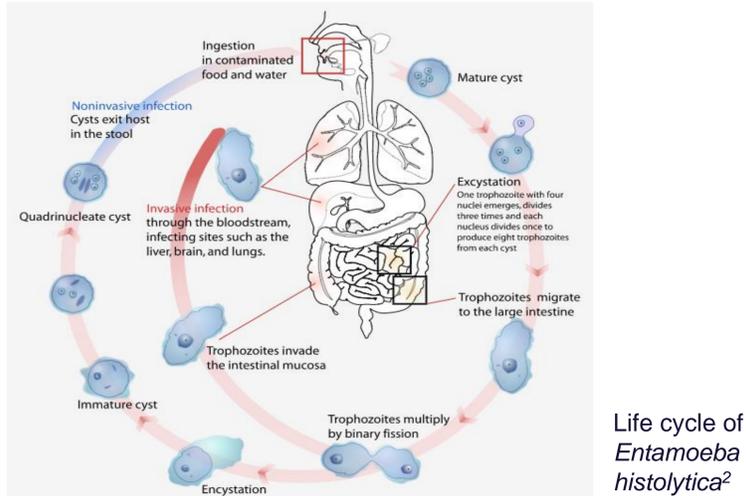
A.L.Chue<sup>1</sup>, A.Ganeshan<sup>2</sup>, J.Scriven<sup>1</sup>

<sup>1</sup> Infectious Diseases Department, Heartlands Hospital, Heart of England NHS Foundation Trust

<sup>2</sup> Radiology Department, Heartlands Hospital, Heart of England NHS Foundation Trust

## INTRODUCTION

- Amoebiasis is caused by the protozoan parasite *Entamoeba histolytica* with transmission occurring via the faecal-oral route
- Infection occurs worldwide but is more common in countries with poor sanitation.
- Acute amoebiasis can present with diarrhoea or dysentery with chronic cases presenting with gastrointestinal symptoms and fever
- Extraintestinal amoebiasis occurs when the parasite spreads to other organs, commonly the liver, causing amoebic liver abscess<sup>1</sup>



## HISTORY

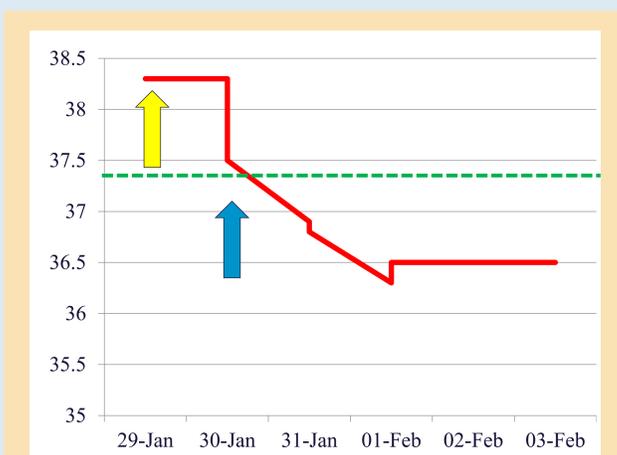
- A 56 year old gentleman presented with fever, lethargy, myalgia, right upper quadrant pain and diarrhoea following travel to India and Thailand four weeks ago
- He had travelled to Delhi for eight days and then to Thailand for 23 days
- Whilst in India he became unwell with diarrhoea which resolved without treatment
- He developed symptoms six days after returning
- He gave no exposure history to animals
- He stayed in hotels whilst travelling and ate local foods
- He did not take malaria prophylaxis
- Right upper quadrant tenderness was noted on examination
- The differential diagnosis included dengue, typhoid, amoebic hepatitis
- He was commenced initially on empirical Ceftriaxone 2g once daily

BLOODS	28/01	31/01	02/02	07/02	10/02	14/02	21/02	07/03	26/06
Haemoglobin (g/L)	153	135	129	141	128	139	132	129	155
White cell count (x10 <sup>9</sup> /L)	18.70	20.01	17.70	16.42	15.51	11.68	8.82	7.72	7.48
Neutrophils (x10 <sup>9</sup> /L)	15.73	17.01	13.59	12.81	11.88	7.74	4.48	3.84	4.60
C-reactive protein (mg/L)	259	288	93	115	56	18	3	<1	-
Bilirubin (umol/L)	19	12	8	8	4	7	4	5	8
Alanine transaminase (IU/L)	51	44	29	15	16	24	28	41	66
Alkaline phosphatase (IU/L)	154	133	138	139	147	164	140	92	78
Urea (mmol/L)	7.1	6.7	5.0	3.7	4.0	6.1	5.7	5.0	5.7
Creatinine (umol/L)	71	48	48	58	59	65	66	62	80

## INVESTIGATIONS AND MANAGEMENT

- An ultrasound scan of his abdomen demonstrated multiple hypoechoic areas within the liver with a mixed solid and cystic consistency, suggestive of possible amoebic or pyogenic abscesses
- A subsequent computerized tomography (CT) scan revealed an enlarged liver with at least eight focal lesions within both lobes, the largest of which measured up to 6cm (Figure 2)
- One such lesion was located in the left lobe, close to the pericardium (Figure 1)
- Images were in keeping with multiple pyogenic hepatic abscesses
- Amoebic serology was negative and a diagnosis of pyogenic liver abscess was initially favoured due to the presence of multiple liver abscesses
- Fevers resolved rapidly following the addition of oral metronidazole (Graph 1).
- Given the diagnostic uncertainty and the possibility of rupture into the pericardium, ultrasound-guided drainage was carried out on six of the lesions over the following few days

- Standard bacterial cultures and 16sRNA testing of the pus samples were negative
- PCR testing for *Entamoeba histolytica* on the pus samples was positive
- Repeat amoebic serology, taken one week later, was positive
- Treatment was rationalized to oral metronidazole and he received six weeks of therapy due to the extent of disease
- Treatment with paromomycin followed for ten days for intra-luminal clearance
- Repeat ultrasound imaging of his liver, five months after initial presentation, showed complete resolution of liver abscesses



Graph 1. Temperature chart demonstrating when ceftriaxone commenced (yellow) and metronidazole commenced (blue)



Figure 1. CT scan demonstrating large infra-cardiac abscess



Figure 2. CT scan demonstrating multiple abscesses in both lobes

## DISCUSSION

- Patients with amoebic liver abscess usually present at a median of 12 weeks following travel from an endemic area
- Characteristic features are right upper quadrant pain and fever
- Rupture of liver abscesses can occur into any adjoining space or organ
- Ultrasonography demonstrates solitary lesions in 70-80% of cases but multiple lesions have been noted previously<sup>3</sup>
- Localization in the left lobe predisposes to extension into the pericardial sac
- Typically lesions are hypoechoic in nature
- Serological testing may be negative in the first seven days<sup>4</sup>
- Aspiration is not routinely required but may be warranted if the cyst appears to be at imminent risk of rupture or if there is a lack of response to empirical therapy<sup>5</sup>

## CONCLUSIONS

- This is an unusual case of invasive *Entamoeba histolytica* infection resulting in multiple abscesses and negative initial amoebic serology
- Drainage is not typically required in the management of amoebic liver abscesses but was performed in this case given the diagnostic uncertainty and the presence of a large infra-cardiac abscess

## ACKNOWLEDGEMENTS

- We would like to thank the patient for giving consent for his images to be used

## REFERENCES

- Amoebiasis. [www.who.int/ith/diseases/amoebiasis/en/](http://www.who.int/ith/diseases/amoebiasis/en/). World Health Organisation 2017
- <https://courses.lumenlearning.com/boundless-microbiology/chapter/fungal-and-protozoan-diseases-of-the-digestive-system/>
- Amoebiasis. Pritt BS, Clark CG. Mayo Clin Proc. 2008;83(10):1154
- Peterson KM, Singh U, Petri WA Jr. Enteric Amoebiasis. In: Tropical Infectious Diseases: Principles, Pathogens and Practice, 3rd ed, Guerrant R, Walker DH, Weller PF (Eds), Saunders Elsevier, Philadelphia 2011. p.614.
- Image-guided percutaneous procedure plus metronidazole versus metronidazole alone for uncomplicated amoebic liver abscess. AUChavez-Tapia NC, Hernandez-Calleros J, Tellez-Avila FI, Torre A, Uribe M SOCochrane Database Syst Rev. 2009