Amoebiasis

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Amoebiasis is caused by *Entamoeba histolytica*, which is spread between humans by its cysts. It is one of the leading parasitic causes of morbidity and mortality in the tropics and is occasionally acquired in non-tropical countries. Two nonpathogenic *Entamoeba* species (*E. dispers* and *E. moshkovskii*) are morphologically identical to *E. histolytica*, and are distinguishable only by molecular techniques, isoenzyme studies or monoclonal antibody typing. However, only *E. histolytica* causes amoebic dysentery or liver abscess.
The life cycle of the amoeba

Figure A. The life cycle of Entamoeba histolytica.
Pathology

- Cysts of *E. histolytica* are ingested in water or uncooked foods contaminated by human faeces. In the colon, trophozoite forms emerge from the cysts. The parasite invades the mucous membrane of the large bowel, producing lesions that are maximal in the caecum but extend to the anal canal. These are flask-shaped ulcers, varying greatly in size and surrounded by healthy mucosa.

- A localised granuloma (amoeboma), presenting as a palpable mass in the rectum or a filling defect in the colon on radiography, is a rare complication that should be differentiated from carcinoma.

- Amoebic ulcers may cause severe haemorrhage but rarely perforate the bowel wall.
Amoebic trophozoites can emerge from the vegetative cyst from the bowel and be carried to the liver in a portal venule. They can multiply rapidly and destroy the liver parenchyma, causing an abscess. The liquid contents at first have a characteristic pinkish colour, which may later change to chocolate-brown.

Cutaneous amoebiasis, though rare, causes progressive genital, perianal or peria-bdominal surgical wound ulceration.
**Clinical features**

- Intestinal amoebiasis – amoebic dysentery
- Most amoebic infections are asymptomatic. The incubation period of amoebiasis ranges from 2 weeks to many years, followed by a chronic course with abdominal pains and two or more unformed stools a day.
- Offensive diarrhoea, alternating with constipation, and blood or mucus in the stool are common. There may be abdominal pain, especially in the right lower quadrant (which may mimic acute appendicitis).
- A dysenteric presentation with passage of blood, simulating bacillary dysentery or ulcerative colitis, occurs particularly in older people, in the puerperium and with super–added pyogenic infection of the ulcers.
- **Amoebic liver abscess**
- The abscess is usually found in the right hepatic lobe.
- There may not be associated diarrhoea.
- Early symptoms may be only local discomfort and malaise; later, a swinging temperature and sweating may develop, usually without marked systemic symptoms or signs. An enlarged, tender liver, cough and pain in the right shoulder are characteristic but symptoms may remain vague and signs minimal. A large abscess may penetrate the diaphragm, rupturing into the lung, and may be coughed up through a hepatobronchial fistula. Rupture into the pleural or peritoneal cavity, or rupture of a left lobe abscess in the pericardial sac, is less common but more serious.
The stool and any exudate should undergo prompt microscopic examination for motile trophozoites containing red blood cells. Movements cease rapidly as the stool preparation cools. Several stools may need to be examined in chronic amoebiasis before cysts are found.

Sigmoidoscopy may reveal typical flask-shaped ulcers, which should be scraped and examined immediately for *E. histolytica*. In endemic areas, one-third of the population are symptomless passers of amoebic cysts.

An amoebic abscess of the liver is suspected on clinical grounds; there is often a neutrophil leucocytosis and a raised right hemidiaphragm on chest X-ray. Confirmation is by ultrasonic scanning. Aspirated pus from an amoebic abscess has the characteristic chocolate-brown appearance but only rarely contains free amoebae.
Serum antibodies are detectable by immunofluorescence in over 95% of patients with hepatic amoebiasis and intestinal amoeboma, but in only about 60% of dysenteric amoebiasis.

DNA detection by PCR has been shown to be useful in diagnosis of *E. histolytica* infections but is not generally available.
Management

- Intestinal and early hepatic amoebiasis responds quickly to oral metronidazole (800 mg 3 times daily for 5-10 days) or other long-acting nitroimidazoles like tinidazole or ornidazole (both in doses of 2 g daily for 3 days).
- Nitazoxanide (500 mg twice daily for 3 days) is an alternative drug.
- Either diloxanide furoate or paromomycin, in doses of 500 mg orally 3 times daily for 10 days after treatment, should be given to eliminate luminal cysts.
- If a liver abscess is large or threatens to burst, or if the response to chemotherapy is not prompt, aspiration is required and is repeated if necessary. Rupture of an abscess into the pleural cavity, pericardial sac or peritoneal cavity necessitates immediate aspiration or surgical drainage. Small serous effusions resolve without drainage.
Prevention

Personal precautions against contracting amoebiasis include not eating fresh, uncooked vegetables or drinking unclean water.
THANKS