General

If amoebae are transported with the venous blood from the intestinal wall to the liver, an abscess in the liver may be formed: hepatic amoebiasis. If the abscess is adjacent to the fibrous capsule of the liver, adhesions are formed. A subphrenic abscess is less frequent than direct perforation of the diaphragm with empyema or fistula formation to the bronchi. Perforation to the peritoneum is rare. Perforations of the intestine, biliary ducts or navel with secondary phagedenic ulceration of the skin are more frequent than generalized peritonitis. Abscesses of the left hepatic lobe may perforate the pericardium in a life-threatening manner.
[The term “abscess” is not correct here in the strictest sense as this is not a collection of pus cells (white blood cells). It is local cytolysis of liver tissue.]

Clinical aspects


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Liver amoebiasis with perforation of the abscess through the abdominal skin. Photo Prof. Gigase. Copyright ITM

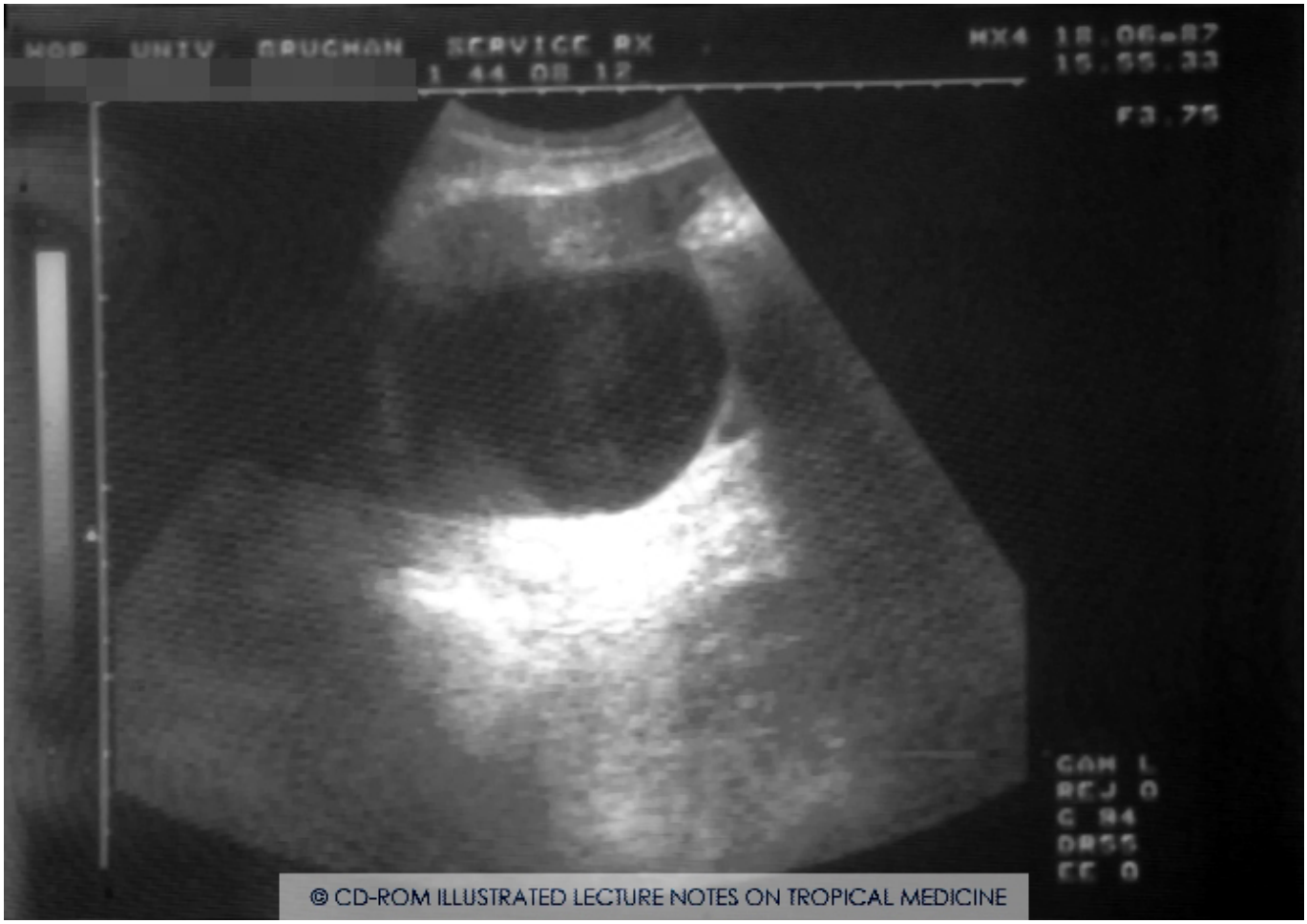
Liver amoebiasis with perforation of the abscess through the abdominal skin. Photo Prof. Gigase. Copyright ITM

Upon physical examination, there is fever and pain in the liver region (pain upon palpation or percussion). The pain increases during deep inspiration or coughing. If the abscess volume is significant, the liver will be enlarged, and the diaphragm will be elevated (percussion, auscultation, chest X-ray). The patient may develop pain in the right shoulder (referred pain). Dullness upon percussion of the base of the right lung may be due to the elevation of the diaphragm, reactive pleural fluid or breakthrough to the pleura, or atelectasis of the lung. Jaundice occurs in a minority (6-29%) of patients and tends to be a very late symptom. Jaundice can result from biliovascular fistula (with backflow of the bile into the hepatic veins) or compression of bile ducts. The abscess spreads until it breaks through to the surroundings:

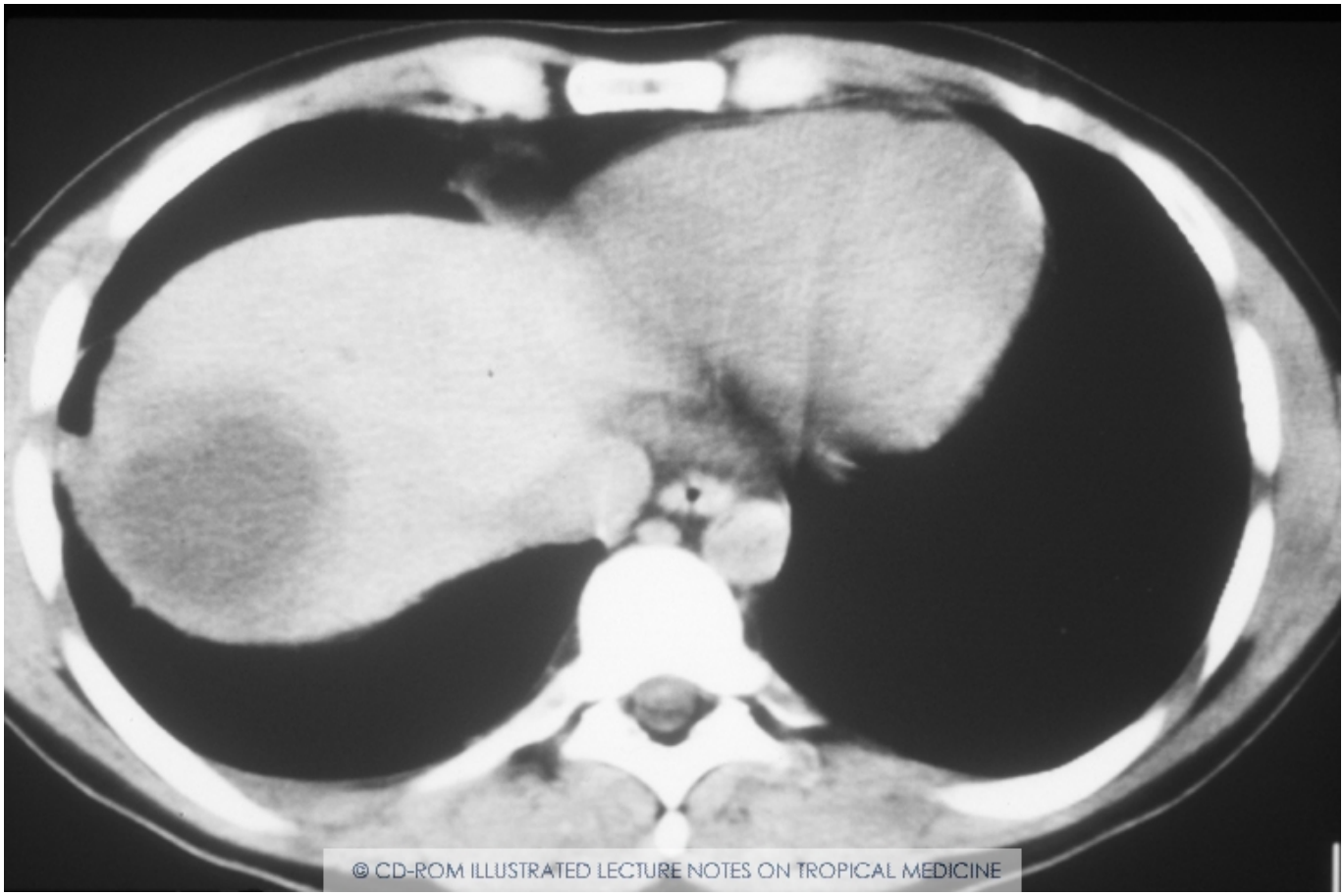
the pleura (empyema), the lung, the pericardium or the skin. If fistulisation to the skin occurs, there may be a swift progression of a painful skin ulcer. Untreated amoebic liver abscess is often fatal.

Diagnosis

The diagnosis of a hepatic abscess may be suspected from clinical findings. Leukocytosis will be high (and there is no eosinophilia). Ultrasound and serology (ELISA, Latex agglutination) can confirm the diagnosis but are often unavailable. Antibodies will remain present for a long time -often years- after infection. An amoebic abscess of the liver will contain necrotic liver tissue at its center. Upon aspiration, this often has a dark brownish-red color called “anchovy” or “chocolate” pus, but the pus may also be yellow, grey or greenish. The pus has no offensive odor, unlike most bacterial (anaerobic) abscesses, which is an important difference. The abscess wall contains trophozoites, but the necrotic liver tissue does not. Local edema or bulging of the skin with or without fluctuation indicates the proximity of the abscess and the site where a puncture can be carried out. In case of doubt, a trial therapy quickly produces a spectacular improvement. Fewer than 20 % of people with a hepatic abscess have Entamoeba histolytica in the feces. Therefore, the absence of amoebae in the stools does not rule out the diagnosis.



Entamoeba histolytica. Ultrasound of the liver showing an amoebic liver abscess. Copyright ITM



Liver abscess due to infection with Entamoeba histolytica. CT scan of the liver shows a circular necrotic area. Copyright ITM

Hepatic amoebiasis: Differential diagnosis

1. Pyogenic/anaerobic hepatic abscess: stinking pus, poor general condition, often icterus, negative serology, sometimes portal-of-entry in the intestine (e.g. colon tumor, appendicitis).
2. Hydatid cyst: slow development, no fever, no toxemia, serology positive for *Echinococcus*, sometimes calcifications on abdominal X-ray, no leukocytosis. Ultrasound may show daughter cysts.
3. Biliary cysts: ultrasound shows a thin wall with anechoic content, otherwise asymptomatic.
4. Haemangioma: hyperreflective on ultrasound, otherwise asymptomatic. On CT scans with dynamic sequences, there is a centripetal staining with a delayed isodense appearance to the surrounding liver tissue. On MRI, a haemangioma is extremely hyperreflective on T2-

weighted images (T2 = “water images”).
5. Metastases: ultrasound shows generally (but not necessarily) irregular and hyperreflective structure; central necrosis may occur. Frequently peripheral edema.
6. Hepatoma: no fever or toxemia, no response to trial therapy, elevated alpha-feto protein, negative serology, often related to HBV or HCV; biopsy is diagnostic.

Treatment

An amoebic liver abscess is treated with **metronidazole** for 10 days (often initially IV) or **tinidazole** 2 gr daily for 5 days, followed by **paromomycin** or **diloxanide furoate** for 10 days. The latter is to destroy any amoebae in the lumen of the intestines. If the diagnosis is known, aspiration is only carried out for very large abscesses or if there is a risk of breakthrough. Surgery is indicated if the abscess ruptures (e.g. into the peritoneum). If a relapse of the abscess occurs, this usually happens within two months.

Amoebiasis of other organs

Amoebiasis of the lungs is generally the result of the spread of an amoebic abscess of the liver, which perforates through to the base of the lung. Breakthrough to a bronchus may occur. The prognosis is usually favorable. Amoebic pleuritis (empyema) is an unpleasant complication because of the need to drain the empyema. Other locations are rare and include:

Primary amoebiasis of the lung without prior hepatic amoebic abscess.

Abscesses in muscles, e.g. the thigh.

Ulceration of the skin of the lower limbs by amoebae could result from superinfections of skin wounds due to scratching with dirty nails.

Urogenital forms, either due to fistula formation of intestinal lesions to the bladder or of peri-anal ulcers to the vagina and cervix of the uterus. Location on the penis if the partner has ulcers of the vagina/cervix or anal ulcers.

Parasites may appear elsewhere and lead to abscesses in other organs, e.g. the brain.