Entamoeba histolytica

By

Ghada M Galal

Pro of Tropical Medicine & Gastroenterology

ILOs

By the end of this lecture the student should be able to

- 1- Mention the different diseases caused by E. histolytica and their clinical picture.
- 2- Select from different clinical symptoms and signs the ones that help reaching diagnosis of amoebic dysentery and differentiate it from other causes of dysentery.
- 3- Select the suitable investigation to confirm the diagnosis of amoebic abscess.
- 4- Have the ability to manage and describe treatment to a case of *E. histolytica* infection.

Amoebiasis

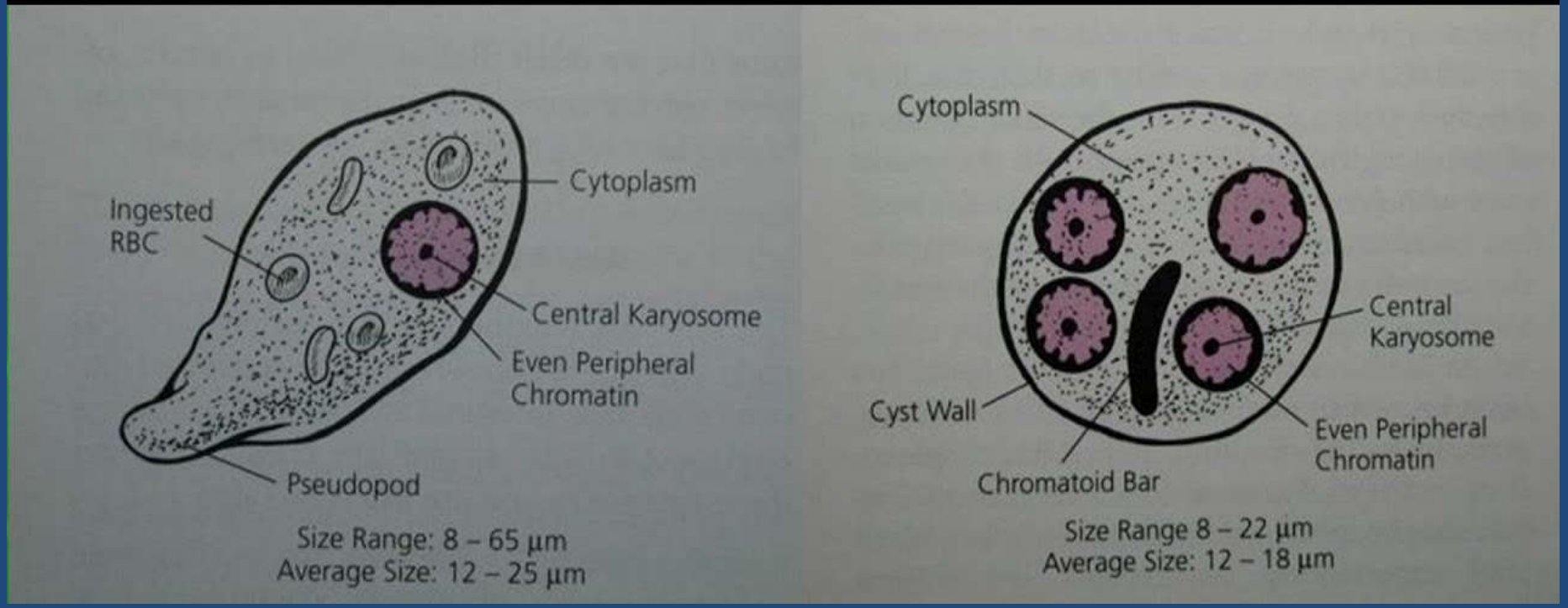
It is a condition due to harboring of *Entamoeba histolytica* either with or without clinical manifestation . There 2 forms

- Primary (Intestinal)
- Secondary (Extra intestinal)

The organism has 2 forms

Entamoeba histolytica

Trophozoite and cyst identification



➢Trophozoite (active form)

- It is responible for ulcers in the colon and abscess in any organ.
- It is present in fresh stool (during dysentery) and in tissues (during invasion).

➢Cysts :

- It is present only in the lumen of colon and in stool and never indvades tissues
- It is responsible for transmission of infection from man to man
- Present in the stool of asymptmatic patient or carrier and responsible for the spread

Mode of infection

- Swallowing of cysts in food or drink contaminated by food handlers or flies or through polluted water supply .
- Sexual route in homosexuals ----perianal destruction and amoebic ulcers of the genitalia .
- Folloing ingestion of the cyst it passes through the stomach and excysts and emerge in the large intestine as the acyive trophozoite.

Pathology

➢ ***Intestinal :***

The parasite affects the large intestine (mainly the caecum and ascending colon). Rectum, sigmoid and appendix also may be affected. It may lead to ulcers caused by proteolytic enzymes release by the parasite → tissue necrosis.

Amoebic ulcer

- Flask shaped with undermined edge and normal intervening mucosa unless invaded by secondary infection. .

- In severe cases, arteriolar erosion in the base of ulcer may occur leading to severe haemorrhage .
- Necrosis of the ulcer may cause perforation and peritonitis

Amoeboma :

Repeated amoebic invasion with superadded pyogenic infection leading to nodular thickening of the bowel wall and may be a mass in the ileocaecal region (D.D of mass in the right iliac fossa)

➢ *Extraintestinal*

- **Liver**: is the most common site affected. The vegetative forms are embolized through the tributaries of portal vein in the base of colon ulcers and reach the liver causing hepatitis or abscess.
- **Skin**: Cutaneous amoebiasis may occur in the perianal skin or skin around colostomy or follow direct inoculation by fingers.
- **Other organs** may be affected including brain, lungs…

Clinical picture of Intestinal amoebiasis

- **Asymptomatic**

Mild or no symptoms although harboring luminal trophozoites or passing cysts in stool .

- **Symptomatic**: either acute or chronic

1) Acute amoebic dysentery : semifluid stool with mucus and blood. Frequency is 3 – 5 / day, associated with tenesmus

2) Chronic amoebiasis: is more common and characterized by remission and exacerbation

Clinical picture (Cont..)

The Patient complains of dyspepsia , abdominal pain , bulky stool with offensive odor . There may be constipation and responds to antiamoebic treatment.

On abdominal examination :

The colon is palpable and slightly tender. .

Untreated amoebic dysentery may result in intestinal perforation or widespread dissemination of the disease with abscess formation.

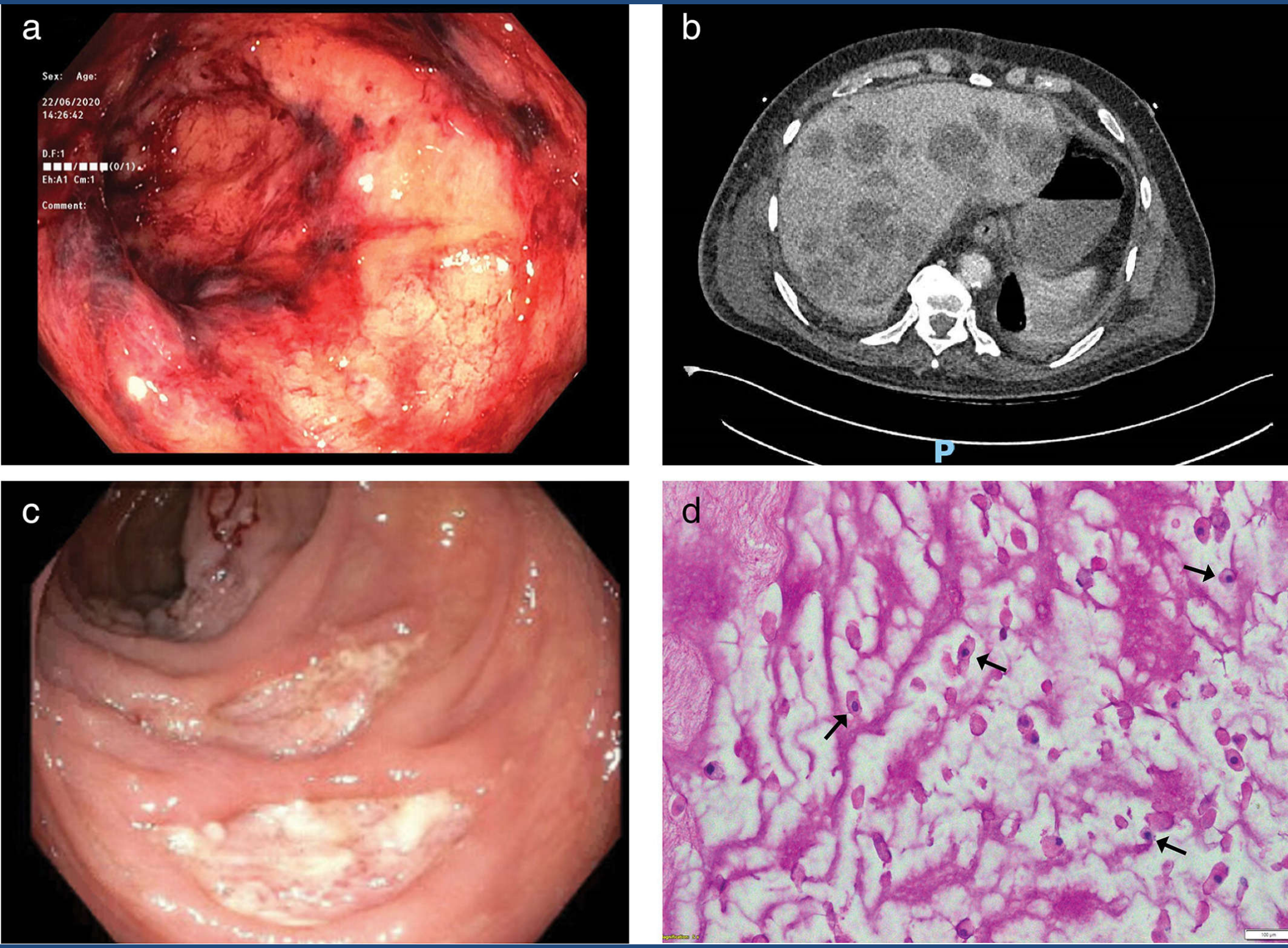
Diagnosis

- **Clinical picture**
- **Stool examination** for trophozoites and cysts
- **Sigmoidiscopy** : to visualize the ulcer, usually discrete, small , flat, shallow-based with overlying yellowish exudate. In the intervening mucosa is frequently normal in appearance.

Swabing of ulcer and microscopic examination ---- Trophozoites

Differential Diagnosis

- Bacillary dysentery
- Bilharzial dysentery
- Inflammatory bowel diseases
- Colorectal cancer
- Colonic TB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Hepatic amoebiasis

- It usually follows dysentery after latent period of many years or there may be no previous history of amoebiasis
- **Pathology :**
- More common in Rt . lobe (portal blood draining caecum and ascending colon)
- The trophozoites reaching the liver may cause :

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Pathology (Cont..)

1) Milliary abscesses :

Hepatitis in the form of minute small scattered liquefactive necrosis.

2) large abscess : milliary abscesses may coalesce together to form large abscess with ragged wall and necrotic anchory sauce material.

Clinical picture of hepatic amoebiasis

- Insidious onset of hectic fever, anorexia, weight loss, rigors or chills.
- Dull aching Rt. hypochondrial pain radiating to back or Rt. Shoulder .

On Examination

- The patient has toxic earthy look . Feverish with profuse sweating and rigors.
- Mild jaundice may be present
- Enlarged tender liver
- Intercostal tenderness

Fate and Complications

- Rupture or direct extension to a neighboring organ as: lung (Rt. Basal lung lesions in the form of effusion, pleurisy, basal crepitations or collapse
- To the pericardium (rupture into pericardium ----- cardiac tamponade)
- The stomach, intestine, peritoneum, gall bladder may be affected .
- Inspissation of pus due to interrupted treatment and even chronicity with thickening of the wall .
- Calcification (indicates chronicity)

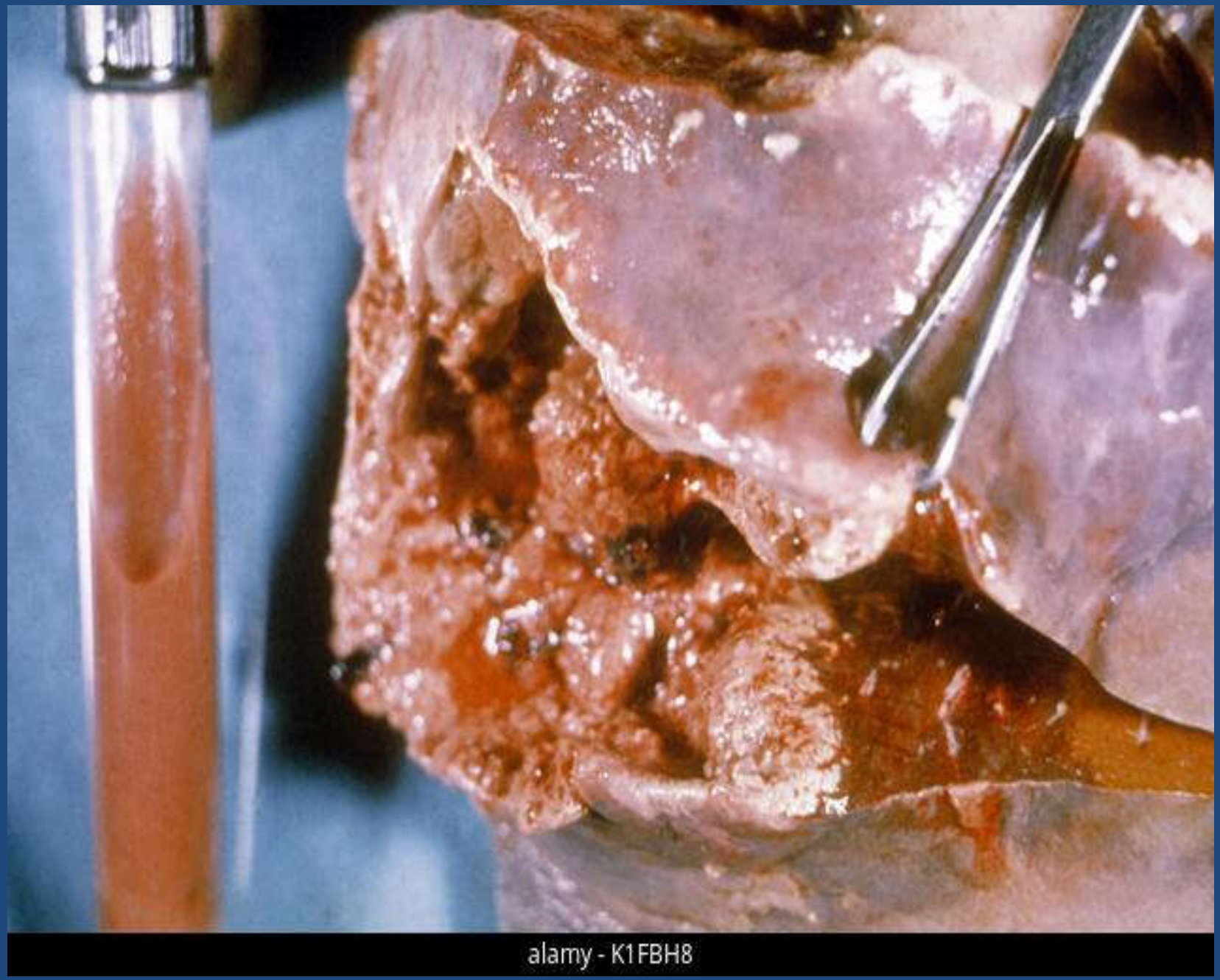
Diagnosis of amoebic liver abscess

- Suggestive clinical picture
- Lab findings: Leucocytosis, ↑ALP, ± ↑transaminases. However, ↑bilirubin is uncommon and if found should direct you to another diagnosis.

  Mild anaemia (of chronic disease) may be seen in prolonged cases.
- Serological test: EIA or indirect haemagglutination test for detection of Ab
- Ag detection is +ve in >90% of cases of liver abscess

Radiological diagnosis

US exam shows a single round or oval hypoechoic lesion in the liver. **Aspiration** is done to exclude pyogenic infection. The finding of amebic pus as “anchovy paste” or “chocolate sauce” refers to the thick, acellular, proteinaceous debris consisting of necrotic hepatocytes and few polymorphonuclear cells obtained by successful aspiration.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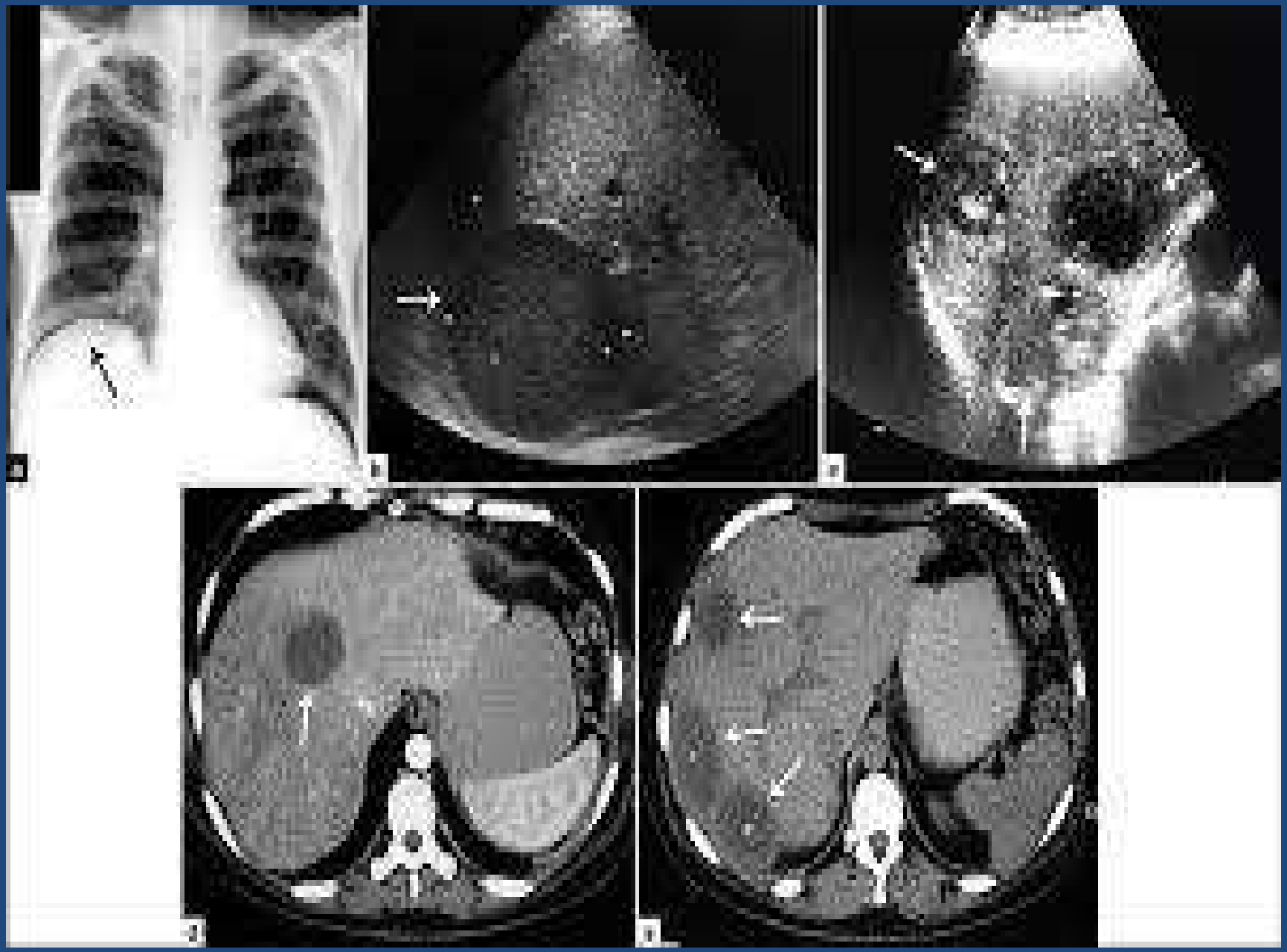

Amebic trophozoites are magenta colored by periodic acid–Schiff staining, making them easy to visualize, but finding trophozoites in an aspirate only occurs in 20% to 30% of cases, with a higher yield from the edge of the abscess.

Chest x ray may show elevation of the right copula in case of large abscess in the dome of right hepatic lobe.

DD:

Pyogenic abscess

Hepatocellular carcinoma

Anti-amoebic drugs (amoebicidal drugs)

Luminal

Diloxanide furate

Paromomycin

Metronidazole

Tinidazole

Secnidazole

Tissue

- Imidazole compound

Metronidazole

Tinidazole

Secnidazole

- Nitazoxanide
- Chloroquine (for hepatic amoebiasis only)

Treatment of amoebiasis

Treatment of intestinal amoebiasis: We use luminal amoebicidal drugs

Diloxanide furate (Furamide)

500 mg TID for 10 days

Paromomycin (Humatin) 30 mg/kg (divided on 3 doses) for 10 days. It is non absorbable aminoglycoside. It kills the cysts and bacteria on which amoeba depend.

Treatment of amoebic liver abscess

I) Medical:

We use one of the tissue amobicidals to be followed by a luminal amoebicide to eradicate amoeba in the colon and prevent future relapse.

II) Aspiration is indicated to

- confirm diagnosis
- To differentiate abscess from maliganacy
- Presence of localized tender swelling
- Persistent pain after medical treatment

Treatment (Cont..)

III) Surgical (open) drainage is indicated in

- Lt. Lobe abscess (for fear of rupture into pericardium)

Severe secondary infection of abscess

Inaccessible site for aspiration and after failure of medical treatment

Rupture into the peritoneal cavity

Failure of repeated aspiration (due to inspissated pus)


Thank
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