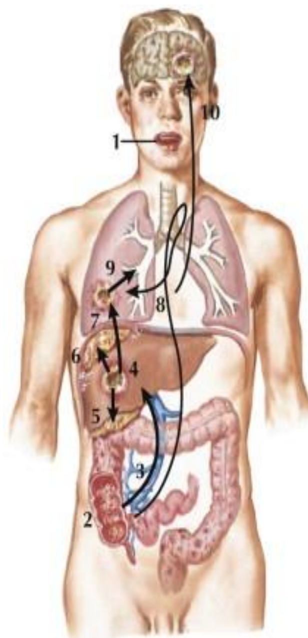
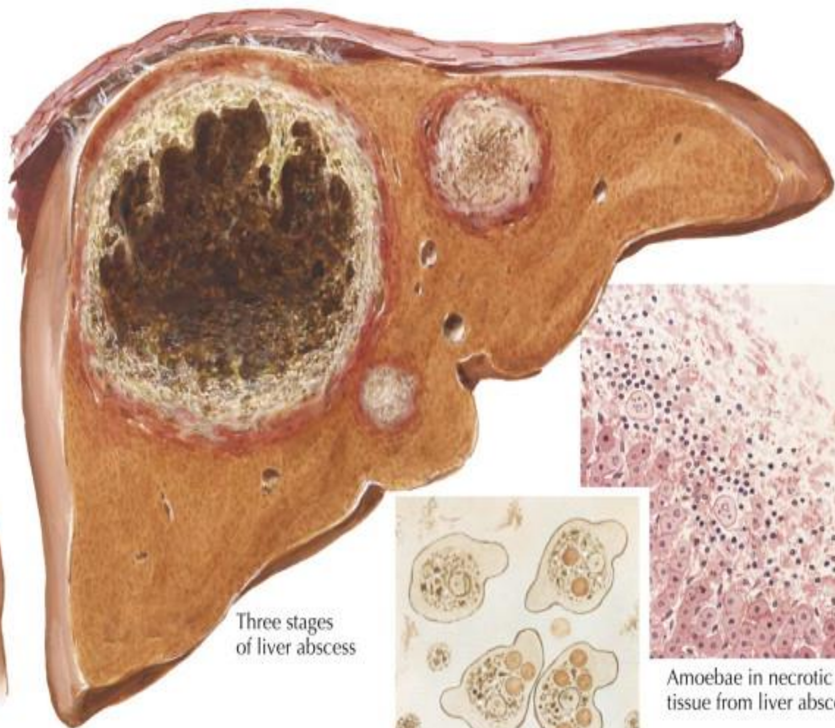
AMOEBIC LIVER ABSCESS



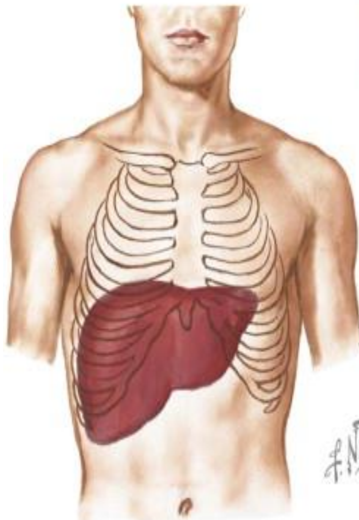
Pathways of Amoeba
1. Portal of entry
2. Intestinal focus
3. Portal vein route to liver
4. Liver abscess
5. Subhepatic abscess
6. Subphrenic abscess
7. Direct extension to lung abscess
8. Vascular route to lung abscess
9. Bronchial fistula
10. Brain abscess (vascular route)



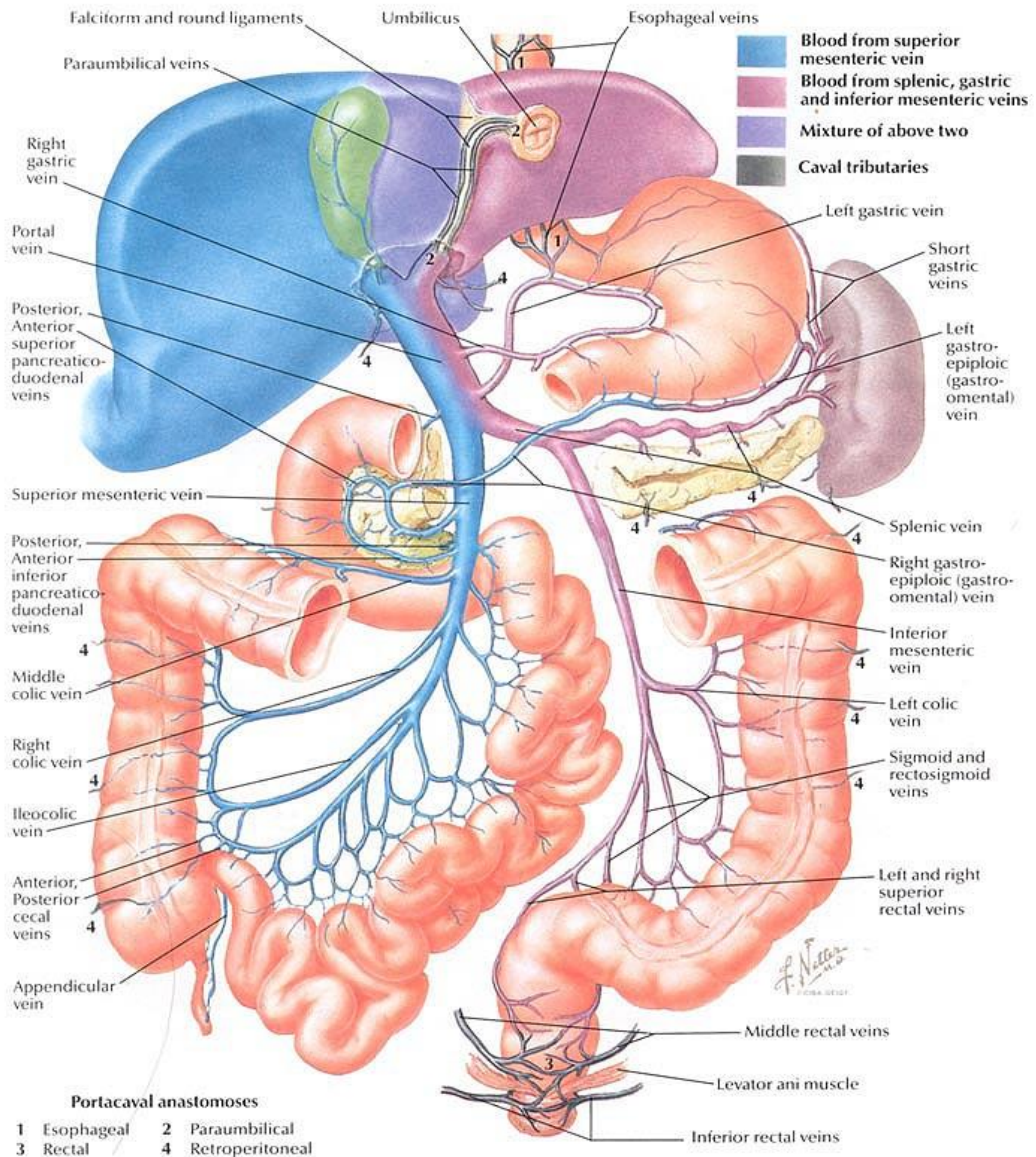
Three stages of liver abscess

Amoebae in necrotic tissue from liver abscess

Entamoeba histolytica in stool (hanging drop preparation)



Early stage of liver involvement: swollen, congested, tender



* Incidence:

- Common in tropical and subtropical areas.
- Usually occurs in middle aged males.
- More common than pyogenic liver abscesses.

* **Aetiology:**

A. Predisposing factor: Amoebiasis of the colon.

B. Organism: Protozoal parasite Entamoeba histolytica.

C. Route of infection: Ingestion of Entamoeba histolytica cysts with improperly washed vegetables → in the intestine the cysts change into trophozites → amoebic colitis → the organism is carried from ulcers in the right colon → portal blood → right branch of portal vein → right lobe of liver.

> ★ ***N.B.: Portal blood from the right colon (which is affected by amoebic colitis) drains mainly to the right lobe of liver.***

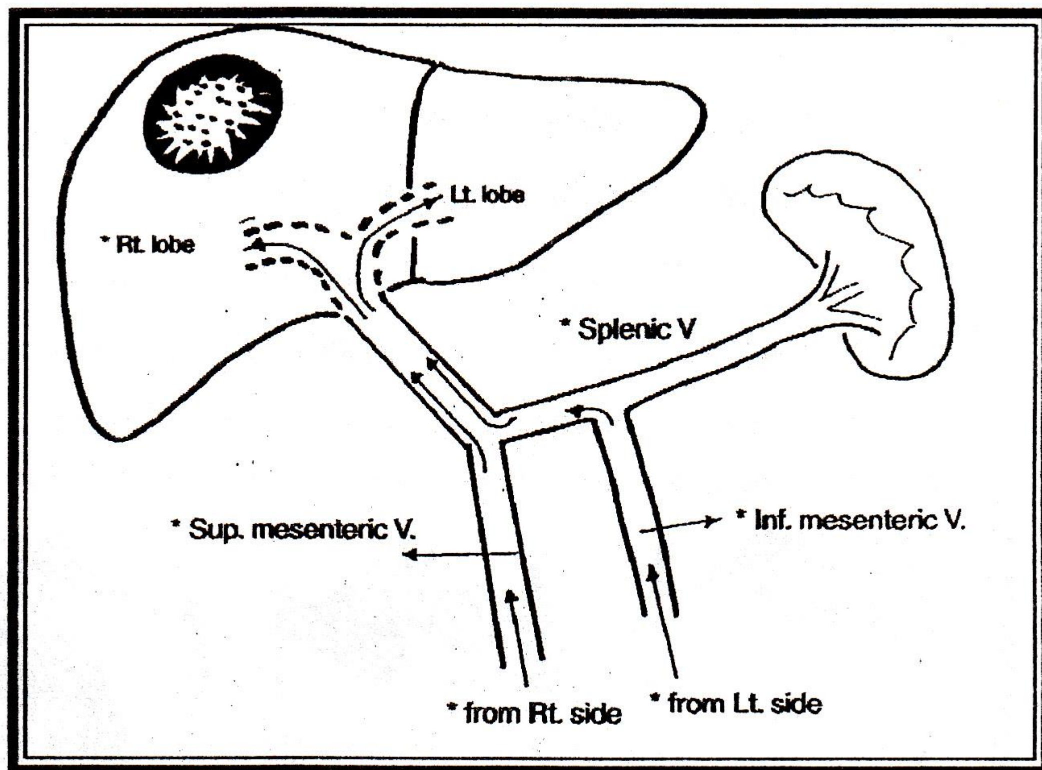
* **Pathology:**

1. **Number:** Usually single & unilocular.

2. **Site:** Usually in the **upper** and **posterior** part of the **right lobe** (the segmental branch of portal vein to this segment is in direct continuation of the right portal branch).

3. **Content:** The parasite produce liquefactive necrosis with formation of sterile anchuvy sauce or chocolate pus which is brownish necrotic material of destructed liver substance , W.B. Cs and R.B.Cs.

4. **Wall:** Shaggy, irregular consists of the boundary of the destroyed liver area and it contains entamoeba.



* **Complications:**

1. Secondary infection → pyogenic liver abscess.

2. Rupture:

a. Upwards:

- Subphrenic space → subphrenic abscess.
- Pleural cavity → empyema.
- Lung → amoebic lung abscess in the right lower lobe.
- Bronchus → Broncho-biliary fistula.
- Pericardium : Pericarditis.

b. **Downwards:** In the stomach, duodenum, colon, right renal pelvis or in the general peritoneal cavity → peritonitis.

c. **Outwards:** Rarely the abscess point on the skin.

d. In the blood stream → Pyaemic amoebic abscesses**.**

3. Destruction of the liver → liver failure.

*** Clinical picture:**

I) History suggests **amoebic dysentery** in 50% of cases :

- Diarrhea , tenesmus and passage of mucous (less commonly blood and pus)
- Colicky abdominal pain with tenderness over the caecum and ascending colon .
- The general condition is good with no fever , toxemia or dehydration .
- The condition spontaneously subside within few days .

II) Examination :

1) ***General:***

a. Mild fever (38-38.5°C), headache, malaise, anorexia, nausea, vomiting & weakness.
b. Mild ting of **jaundice** may be present.
c. **Earthy look** (i.e pale & toxic) **.**

2)*Abdominal:*

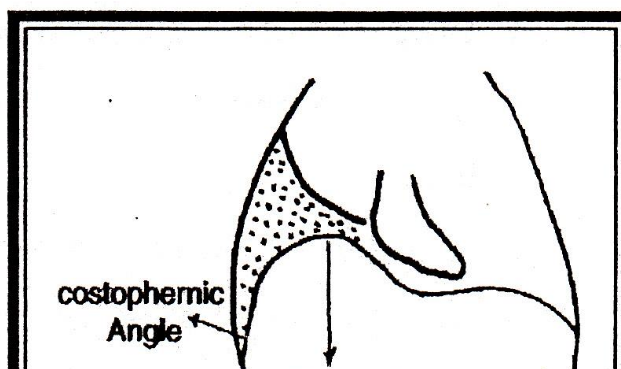
a. **Pain, tenderness & rigidity** over the lower right intercostals spaces , right hypochondrium and upper abdomen.

b. **Liver:** Enlarged, tender and soft. Enlargement is mainly upwards as detected by percussion.

3) ***Chest:*** right sided pleural effusion & basal lung collapse.

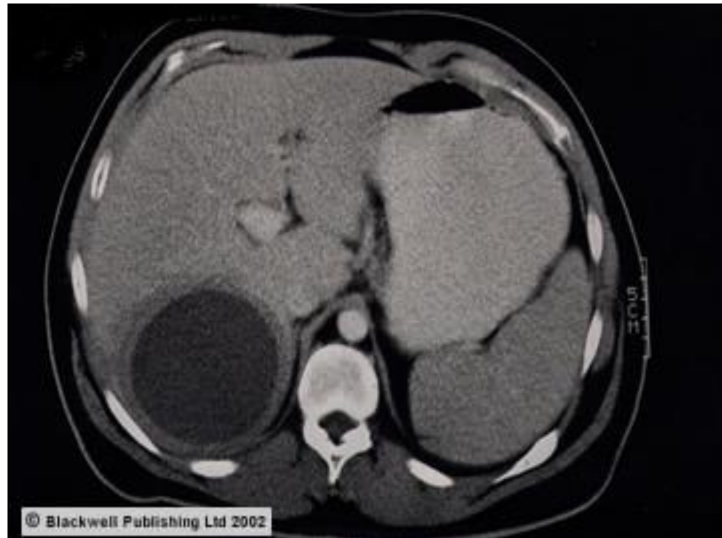
* **Investigations:**

1. ***Stool analysis*** & serological tests for entamoebae are useful in non-endemic areas but in endemic areas these tests are +ve in high percentage of population.
2. ***Blood picture:*** Shows anaemia and eosinophilia.
3. ***Serum bilirubin:*** May be elevated.
4. ***Plain X-ray: May show:***
   D. Elevated right cupola of diaphragm with limited mobility during respiration.
   E. Obliterated costophrenic angle from pleural **effusion**.
5. ***Ultrasonography and C.T. scan are most important*** show site & size of the abscess .
6. ***Therapeutic test*** with Metronidazole***.***



Plain X-ray

C.T. scan



***D.D.:**

A. Liver conditions : 1. Pyogenic liver abscess.
2. Hepatocellular carcinoma.
3. Acute cholecystitis.
4. Congested liver .
5. Acute hepatitis

B. Chest conditions: Empyema & pleural effusion. (X-ray is diagnostic)

C. Acute abdomen: e.g. subphrenic abscess or right pynoephrosis.

***Treatment:**

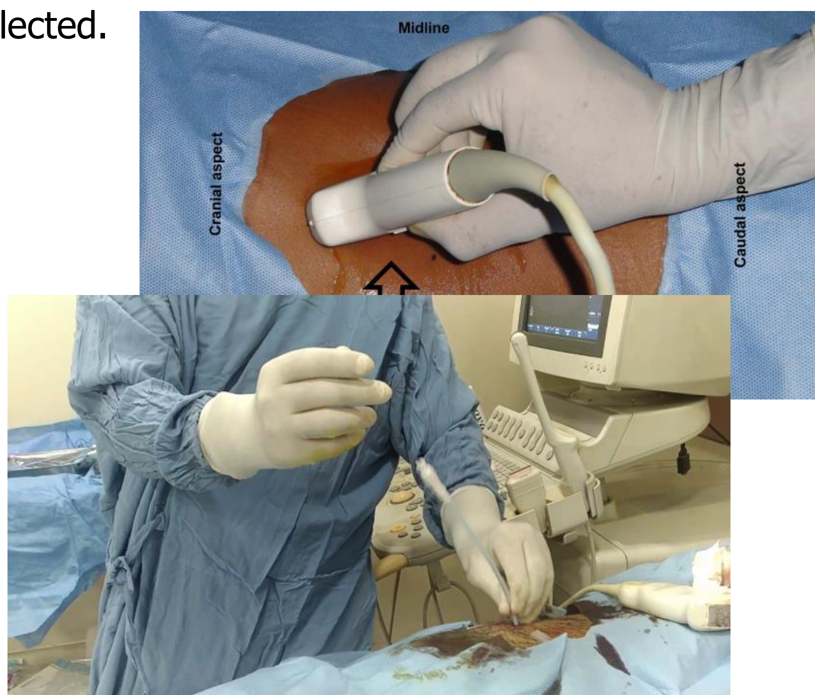
A. ***Prophylactic:*** Proper hygiene & Proper management of amoebic colitis.

B. ***Conservative:***

- ♦ Liver supports.
- ♦ Flagyl (metronidazole) 500 mg T.D.S. for one week.
- ♦ Tinidazol : 2 gm daily for 5 days .
- ♦ Broad spectrum antibiotics: in secondary infection.

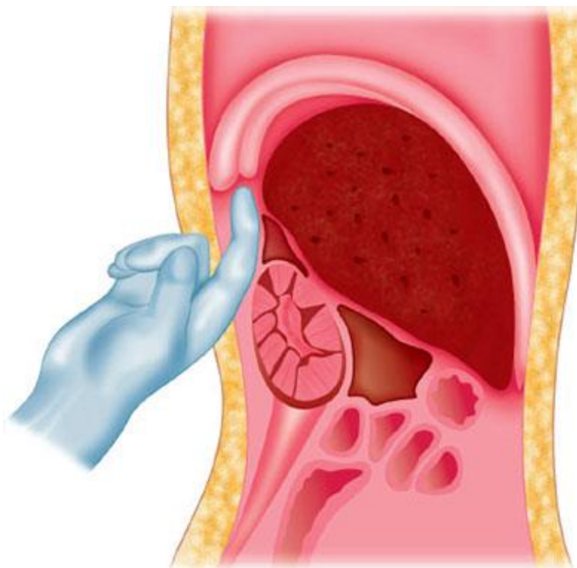
C. ***u/s guided percutaneous aspiration: (replace surgery)***

- **Indications:** Failure of medical treatment for 3 days or large abscess.
- **Method:**
  - ➢ ***Under local*** anaesthesia under complete sterile condition, a long wide bore needle or catheter is introduced through the skin into the abscess cavity.
  - ➢ ***The site*** of aspiration:
    - **If anterior** abscess**:** the needle is introduced below the costal margin.
    - **If posterior** abscess: it is inserted in the 10th intercostals space posteriorly.
    - If the site is **unknown**: the needle is inserted in the mid-axillary line in the 8th intercostals space.
  - ➢ Follow up by U/S & aspiration is ***repeated***, if the fluid is recollected.



d. ***Open drainage:***

- **Indication:** Very rarely needed nowadays if failure of aspiration, secondary infection or pointing.
- **Method:**
  1. ***Posterior subpleural approach:*** Through the bed of 12 rib posteriorly through extra-pleural approach .
     - For posterior abscess situated in the right lobe.
  2. ***Anterior extraperitoneal approach:*** For anterior situated abscess.



Source: Maxine A. Papadakis, Stephen J. McPhee, Michael W. Rabow
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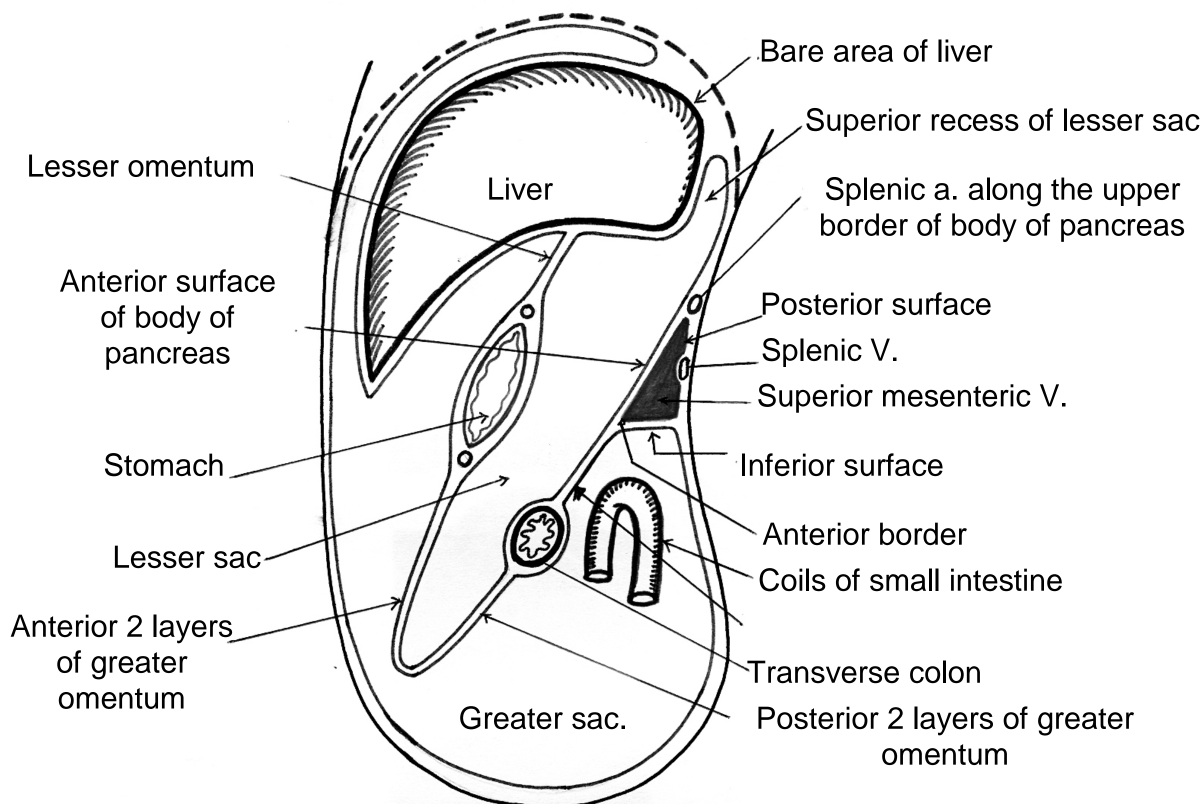
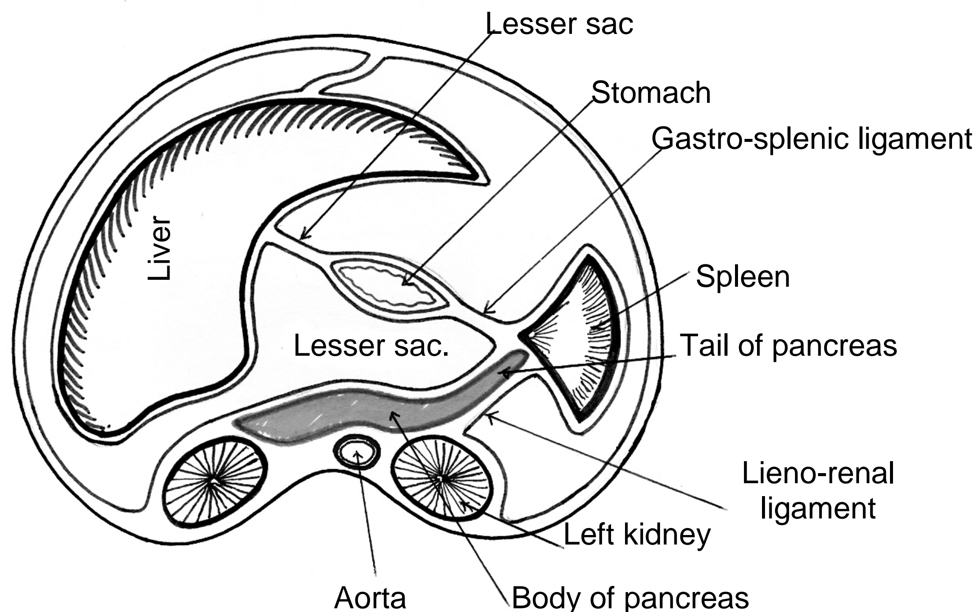


*** Surfaces and borders of body of pancreas ***
(Sagital Section)



*** Transverse section at the level of the body of pancreas ***