

ABSCCESS DRAINAGE

LIVER ABSCESS

- *Pyogenic liver abscess was reported in the writings of Hippocrates (470 : 360 B.B.), who based prognosis on the type of fluid recovered from the abscess.*
- Liver abscess is :
 1. Most common type of visceral abscesses.
 2. Life-threatening disease.
 3. Male: Female → 3:1 to 10:1.
 4. Mortality → 2: 12 %.
- **ETIOLOGY :**
 1. **Biliary disease:**
 - I- Extrahepatic biliary obstruction.*
 - II- Biliary-enteric anastomoses.*
 2. **Infection via the portal system (portal pyemia)**
 3. **Hematogenous (via the hepatic artery).**
 4. **Cryptogenic.** → > 50%.

- **RISK FACTORS :**

- | | |
|---|---|
| • <u>Geographic factors:</u> <ol style="list-style-type: none">1. <i>Living in areas with endemic diseases as TB, Amoebiasis.</i>2. <i>Traviling to tropical countries.</i> | • <u>Systemic factors:</u> <ol style="list-style-type: none">1. <i>Diabetes.</i>2. <i>Steroid use & Immunosuppression.</i>3. <i>Sepsis</i>4. <i>Malnutrition</i>5. <i>Alcoholism</i>6. <i>Renal failure</i> |
| • <u>Physiological:</u> <ol style="list-style-type: none">1. <i>Old age</i>2. <i>Pregnancy</i> | |

- **MICROBIOLOGY**

- Most abscesses → contain more than one organism.
- The most common causative microorganisms :
 1. E. coli
 2. K. pneumoniae.
 3. E. Histolytica.
 4. T.B.
 5. Fungal strains:
rare

- **C.P. :**

1. Fever
2. Cough
3. Chills
4. Anorexia
5. Weight loss
6. Pluritic Chest
pain
7. Abdominal pain

- **DIAGNOSIS:** *Is depends on*

- **C.P.**

- **Imaging:**

1. U.S. & Aspiration - CT

- **Lab. Investigation.**

1. CBC → Anemia in 50-80%, Leukocytosis.
2. (ESR) → raised.
3. Liver function tests → elevated alkaline phosphatase level in 95-100%.
4. Prothrombin time.
5. Culture of Pus sample.
6. [Serology](#): +ve for amebiasis.
7. Blood culture: +ve in 33-65% of cases.

Liver Abscess & Ultrasonography

* *Ultrasonography:*

→ Diagnose liver abscess earlier → decrease morbidity and mortality.

→ Guidance to take samples of its contents.

→ Is the Main role in treatment, percutaneous drainage.

• *Advantages of US in Diagnosis of L.A.:*

- | | |
|------------------------|------------------------------|
| 1. Non invasive. | 5. More available than other |
| 2. None Ionizing. | modality. |
| 3. Sensitive. | 6. Relative low cost. |
| 4. Flexibility in use. | |

• *Difficulties in diagnosis of liver abscess:*

1. In early stage → appears as solid lesion may → misdiagnose as hepatic neoplasm.
2. Tumors such as leukemia, lymphoma and melanoma → Hypoechoic lesions.
3. Polycystic disease → inconclusive US findings, so diagnosis is finally established based on the CT.

• **TREATMENT :**

1. **Antibiotics**

3* **Resection**

2. **Drainage:** Two ways of drainage:

➤ *Non surgical:*

- Percutaneous needle aspiration.
- Percutaneous catheter drainage.

➤ *Surgical:*

* Open drainage.

* Laparoscopic drainage.

U.S. GUIDED PERCUTANEOUS DRAINAGE

- Management was exclusively surgical in the past.
- Modern treatment shifted toward IV broad-spectrum antibiotics and imaging-guided drainage.
- ***Percutaneous image-guided drainage*** is first-line treatment when there are no surgical indications.
- *In amebic liver abscess → **Drug therapy alone** is the mainstay of management. , However aspiration quickens clinical improvement.*

- **Methods of US guided therapeutic aspiration**

Two methods :

- Percutaneous needle aspiration.
- Percutaneous catheter drainage “PCD”.

I. Percutaneous needle aspiration:

- It has the following advantages than PCD:
 - i. Easier to perform,
 - ii. Less complicated,
 - iii. Less aggressive,
 - iv. Less expensive.
 - v. Less risky for postprocedure septicemia.
- It requires careful follow-up and repeated imaging procedures to monitor response to therapy.
- **Tools:** 18-gauge disposable trocar needle
- Local Anesthesia: Not needed.
- Lack of response to a ***third aspiration trial*** → is considered failure of treatment.

Aspiration of *multiloculated abscesses* mostly failed, so PCD is necessary.

II. *Percutaneous catheter drainage (PCD)*

- Next Option After needle aspiration.
- **Tools:**
 - 8-French multiple-side hole pigtail catheter .
 - Supine position.
 - Local anesthesia.
 - The optimal route of access :
 - Traversed the least possible amount of liver tissue.
 - Avoided bowel and pleura.
 - Once positioned → irrigation with *isotonic saline* & placed to allow gravity drainage.
 - Aspiration is performed → until no more pus was removed.
 - Secure it by stitches to the skin for continuous external drainage.
 - It left in place until production of content stopped.
 - Residual cavities of abscesses → managed by catheter repositioning and aspiration or by introduction of a new catheter.
 - Remove it when the abscess cavity collapses & stop production of pus.

⇒ *Follow up*

- After discharge from the hospital, patients undergo follow-up in the outpatient clinic:
 - ℞ At least once / week during treatment.
 - ℞ Biweekly → until 6 months from the beginning of the treatment.

Criteria for successful treatment

- Clinical symp. & signs improvement.
- Sonographic evidence of abscess resolution:
 - Disappearance or
 - Marked decrease in the abscess cavity (more than 50% reduction of longest diameter before treatment).
- The success rate of PCD 80-87%.

Failure

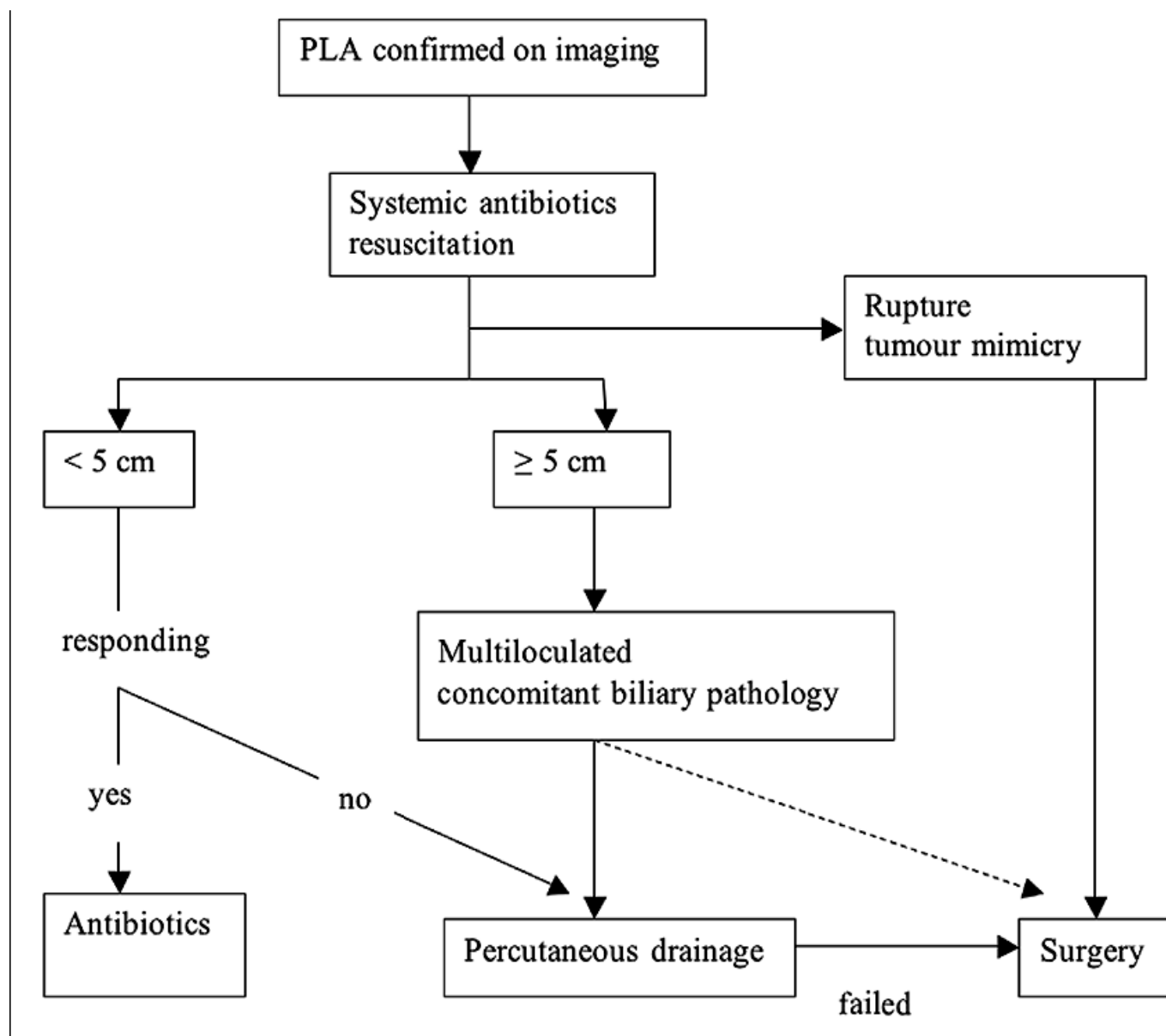
- PCD failed if no improvement occurs. or
- If the condition worsens **within 72** hours of drainage.

Complications

- | | |
|---|--|
| 1. Pain | 2. Bleeding |
| 3. Organs injury: <ul style="list-style-type: none">• Colon• Right kidney• Pancreas | <ul style="list-style-type: none">• Diaphragm• Lung or pleura• Gallbladder or bile ducts |
| 4. Peritonitis | 6. Needle fracture |
| 5. Shock | 7. Infections of needle track |

Contraindications

1. Ascites.
2. Coagulopathy.
3. Poor accessibility.
4. Multiple small abscesses.



SPLENIC ABSCESS

- Rare entity
- mortality rate: is still high, up to 47%, and
 - can reach 100% among patients who do not receive antibiotic treatment
- Hematogenous spread is the commonest etiology.