In the name of Allah
The most gracious, The most merciful

Master The

LONG CASES
IN MEDICINE

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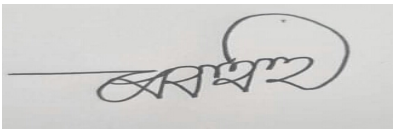
Dedicated to-

PROFEESSOR DR. KHALID HASAN
&
DR. TAHMINA KHATUN

FOREWORD

It's a great pleasure and honor for me to write a few words about ***'Long Cases in Medicine'***. This book is an excellent made-easy book, written by Dr. Md. Mehedi Hasan Lemon. I am sure that reading the lucid description in this book, undergraduate students will be able to prepare themselves in a systematic way for the final examination as well as for real life. I think after reading this book thoroughly, the students will be able to take the history from any type of patient along with proper and systematic examination to reach a diagnosis and provide proper management. In this respect, I strongly appreciate and feel that this book will really be a good guide, written in a concise and comprehensive manner, and this will help all the students to make a strong and basic foundation on which future pillar of knowledge can be made to stand erect. I appreciate and praise the whole-hearted effort and honest work, sincerity, endeavor, enthusiasm and patience in bringing out this book for the learners of Medicine.



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PREFACE TO FIRST EDITION

By the grace of almighty Allah and blessings of my well-wishers, I have been able to bring out the 1st edition of 'Long Cases in Medicine'. This book offers a simplified way of approach to common long cases in Medicine wards and Medicine examinations. This book will provide a quick, portable and reliable reference for improving basic knowledge regarding long cases in Medicine and pass your examinations smoothly.

I apologize for inadvertent mistakes have been overlooked. I will be happy to receive any comment, criticism and suggestion for improvement of this book in future.

Dr. Mehedi Hasan Lemon

PREFACE TO THIRD EDITION

By the grace of almighty Allah and blessings of my well-wishers, I have been able to bring out the 3rd edition of 'Master The Long Cases in Medicine'. Attempts were made to simplify more and more every topic. Some new important topics are added. Data are updated according to latest edition of textbooks and guidelines.

I apologize for inadvertent mistakes have been overlooked. I will be happy to receive any comment, criticism, and suggestion for improvement of this book in future.

Dr. Mehedi Hasan Lemon

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BIBLIOGRAPHY

Davidson's Principles and Practice of Medicine-24th edition
Harrison's Principles of Internal Medicine-21st edition
Kumar and Clerk's Clinical Medicine-10th edition
Lectures and Ward classes of renowned medical colleges.

TABLE OF CONTENTS

PROFORMA OF WRITING A LONG CASE

Particulars of the patient:

1. **Name:**
   - **a.** For identification of the patient
   - **b.** Patient usually likes to be asked by his/her name.
   - **c.** Patient feels assured when you know his/her name.
2. **Age:** Is important as some diseases are more common in at specific ages. e.g.

   In children:
   a. Pneumonia
   b. Viral hepatitis
   c. Acute appendicitis
   d. Round worm intestinal obstruction
   e. Ranula (Mucous containing cyst in floor of the mouth)
   f. Papillary carcinoma

   In middle age:
   a. Carcinoma of stomach
   b. Acute and chronic cholecystitis
   c. Peptic ulcer
   d. Acute pancreatitis
   e. Perforated peptic ulcer
   f. Varicose ulcer
   g. Venous ulcer
   h. Renal and ureteric calculi
   i. Ca rectum

   In older age:
   a. Pneumonia
   b. Parkinson's disease
   c. Stroke
   d. Ca colon, bronchial carcinoma
   e. Gastric and duodenal ulcer
   f. Abdominal aortic aneurysm
   g. Diverticular disease
   h. Hernia
3. **Sex:**

   More in male:
   a. Ca stomach
   b. PUD
   c. Basal cell carcinoma
   d. Renal and ureteric calculi
   e. Carcinoma bladder
   f. BEP
   g. Ca prostate

   More in female:
   a. Cholecystitis
   b. Gall stone
   c. Ca breast
   d. Goiter
   e. Thyrotoxicosis
   f. Ca gall bladder
4. **Occupation:** Some diseases are related to specific occupations **e.g.**
   Working in dying industry, rubber industry: Ca bladder
   Involved in Standing for long period of time e.g., traffic police: Varicose vein
5. **Religion:** e.g., carcinoma of penis, phimosis, paraphimosis, subprepucial infection is hardly seen in Muslims and Jews as they do circumcision.

6. **Address:** e.g., basal cell and squamous cell carcinoma are more common in countries that have much bright sunlight.

Presenting complaints:

1. Complaints of the patient should be recorded in a chronological order of their appearance or severity of the disease.
2. Record each presenting symptom in the patient's own language and must avoid any medical terminology and adjunct.

History of present illness: H/O present illness should include-

1. **Elaboration of the chief complaints:**
   For pain: Remember **SOCRATES: S**ite, **O**nset, **C**haracter, **R**adiation, **A**ssociated symptoms, **T**iming, **E**xacerbating and relieving factors, **S**everity

   For non-pain symptoms: Remember **ODIPARA: O**nset, **D**uration, **I**ntensity, **P**rogression, **A**ggravating factor, **R**elieving factor, **A**ssociated symptoms

2. Use patient's own words
3. **For any provisional diagnosis, following points to be mentioned here:**
   a. Differential diagnosis: Mention important negative points to exclude DDs
   b. Aetiology
   c. Association with other disease
   d. Complication
4. **In case of suspected malignancy:** Ask local, metastatic and paraneoplastic features
5. **Inquire about DM, HTN:** How was it diagnosed? Is it controlled or not? Current medication and compliance. Any complication?
6. **Constitutional symptoms:** Bowel and bladder habit, appetite, sleep pattern, weight loss
7. **Systemic review:** Patient may forget or think some symptoms as unimportant. So, ask the patient if he/she has other symptoms according to anatomical systems of the body.

Past history:

1. H/O previous diseases: e.g., Tuberculosis, Kidney disease, IHD etc.
2. H/O any surgery or procedure, investigations
3. Any childhood illness

SYMPTOM ANALYSIS

ABDOMINAL PAIN

1. **Site: Where is the site of pain?**
   Epigastric: Peptic ulcer, Acute pancreatitis, GERD, Cholecystitis, Referred pain of acute myocardial infarction and basal pneumonia
   Right hypochondriac: Acute cholecystitis, Liver abscess, Acute viral hepatitis, Enlarged tender liver in CCF, Subphrenic abscess.
   Right iliac fossa: Acute appendicitis, Crohn's disease, Salpingitis.
   Pain starts at mid abdomen and then shifts to right iliac fossa: Acute appendicitis.
   Left iliac fossa: Diverticulitis, Volvulus, Salpingitis, IBS, IBD, ureteric colic, pelvic abscess
   Loin pain: Renal colic, Acute pyelonephritis, Perinephric abscess.
   Generalized abdominal pain: Peritonitis, Inflammatory bowel disease, Gastroenteritis.
2. **Onset: How does it start?**
   Acute pain:
   a. Acute cholecystitis
   b. Acute appendicitis
   c. Acute pancreatitis
   d. Intestinal obstruction
   e. Perforation of gas containing hollow viscus
   f. Ruptured abdominal aortic aneurysm

   Chronic pain: PUD, IBS
   Intermittent: PUD, Chronic pancreatitis
   PUD may cause pain at late night
3. **Character: What is the character of pain?**
   a. **Burning:** PUD
   b. **Colicky:** Obstruction, ureteric stone, stone in common bile duct, ascariasis in common bile duct.
   c. Throbbing: Hepatitis, cholecystitis
4. **Radiation: Where does it radiate?**
   a. **Pain radiating to back:** Acute pancreatitis, penetrating peptic ulcer.
   b. Pain radiating from loin to groin: Ureteric colic.
   c. **Pain referred to right shoulder:** Acute cholecystitis, also diaphragmatic pleurisy.
   d. **Pain referred to left shoulder:** Splenic infarction, perisplenitis.
   e. **Pain radiating to neck:** Esophageal reflux.
   f. **Pain radiating to inferior angle of scapula:** Biliary colic
5. **Association: Is it associated with diarrhea, vomiting, dyspepsia, altered bowel habit, urinary complaints, gynecological complaints, abdominal distension, etc.?**
   Vomiting: PUD**,** Acute abdomen
   Fever: Infective cause
   Diarrhoea or alteration of bowel habit (In chronic cases): Intestinal TB, IBS, Malignancy
   Right hypochondriac colicky pain with jaundice: Gallstone in common bile duct.
   Shock: Ruptured ectopic pregnancy or ruptured abdominal aortic aneurysm
6. **Timing and duration:** How long have you been suffering from this pain? When does it start? When does it go? Has it changed since it has begun?
7. **Exacerbating and relieving factors: What brings it on or makes it worse? What does it make better?**
   Aggravated by smoking, alcohol, NSAIDs or steroid and relieved by antacids: PUD
   Worse in empty stomach and relieved by taking food: Duodenal ulcer
   Worse after taking food: Gastric ulcer
   Pain aggravated by heavy meal and alcohol, but partially improved by bending forward: Acute pancreatitis.
   Pain aggravated by fatty food: Cholelithiasis.
   Pain aggravated by eating: Ischemic pain of gut.

Pain aggravated by movement: Peritonitis.
Pain relieved by vomiting: Gastric outlet obstruction.
Pain relieved by spasmolytics or defecation: Intestinal obstruction.

8. **Severity: How severe is it?** Mild, moderate or severe
9. **Consider some extra-abdominal cause of abdominal pain:**
    a. Diabetic ketoacidosis
    b. Basal pneumonia (Due to basal pleurisy)
    c. Acute inferior MI
    d. Henoch Schonlein purpura
    e. Addisonian crisis
    f. Acute intermittent porphyria
    g. Sickle cell crisis
    h. Hypercalcemic crisis
    i. Polyarteritis nodosa
    j. Hyperlipidemia
    k. Hereditary angioedema
    l. Paroxysmal nocturnal hemoglobinuria
    m. Chronic lead poisoning
    n. Familial Mediterranean fever
    o. Tabetic crisis in tabes dorsalis
    p. **Others:** Munchausen's syndrome, functional.

LIVER ABSCESS

Particulars of the patient:

Name: Mr. Imrul Khayes
Age: 50 years
Sex: Male
Marital status: Married
Religion: Islam
Occupation: Shopkeeper
Address: Mymensingh Sadar, Mymensingh
Date of admission: 26.09.2023
Date of examination: 27.09.2023

Presenting complaints:

1. Fever for 6 days.
2. Abdominal pain for same duration.

History of present illness:

According to statement of the patient, he was reasonably well 6 days back. Then he has developed fever, which is high grade, intermittent, highest recorded temperature was 104^0F, subsided after taking paracetamol, associated with chills and rigor. There is no H/O burning sensation of micturition, joint pain, rash in the body, cough, and chest pain (To exclude pneumonia), H/O travelling in hilly area (Malaria). He also complained of pain in right upper abdomen for same duration, dull aching in nature, radiating to right shoulder, more marked on lying right lateral position, coughing or deep breathing and gradually increasing in severity. [Now try to elicit the cause of liver abscess] He has no H/O abdominal surgery or trauma, abdominal distension, yellow coloration of skin, eye, or urine (Choledocholithiasis or viral hepatitis), recent H/O diarrhoea. The patient had no history breathlessness on exertion or in lying flat and swelling of the leg (To exclude CCF), no recent H/O working in dirty water (Leptospirosis). Patient also complained of loss of appetite, malaise, and weight loss over this period. Weight loss is unintentional not documented, evidenced by loosening of his cloths, not associated with heat intolerance, palpitation, tremor (Thyrotoxicosis), increased frequency of micturition and thirst (DM), dizziness on standing, pigmentation (Addison's). He is not known to be hypertensive or diabetic. His bowel and bladder habit are normal. With those above complains, he admitted to this hospital for further evaluation and management.

Drug history: He took several medications from quack but couldn't mention the names of those drugs before admission to this hospital. After admission to this hospital, he has undergone some blood tests and abdominal ultrasound and is being treated with some injectable and oral medications.

H/O past illness: He has no significant past illness.

Family history: All the member of his family are in good health.

Personal history: He is non-smoker, non-alcoholic.

Socioeconomic history: His monthly income is about 20 thousand taka. He lives in semi-pakka house, drinks arsenic free tube well water and uses sanitary latrine.

Immunization history: He is immunized according to EPI schedule.

Menstrual history: [If female] She is having regular menstrual cycle with average flow.

General examination:

Appearance: Ill looking
Body build: Average

Co-Operation: Co-Operative
Decubitus: Left lateral position
Nutritional status: Average
Anaemia: Absent
Jaundice: Mild (Or may be absent)
Cyanosis: Absent
Clubbing: Absent
Koilonychia: Absent
Leukonychia: Absent
Pulse: 96/min
BP: 100/60 mm of Hg, no postural drop
RR: 18/ min
Temperature: 101^0 F
JVP: Not raised
Pigmentation: Absent
Body hair distribution: Normal
Bony tenderness: Absent
Dehydration: Absent
Oedema: Absent
Thyroid gland: Not enlarged
Lymph node: Not palpable
Bed side urinary albumin: Absent
IV cannula in situ:

Systemic examination:

Alimentary system:
Mouth and oral cavity: Normal
Abdomen Proper:
Inspection:
Shape of the abdomen: Swelling in right hypochondrium and fullness of right lower intercostal space
Movement of the abdomen: Movement is restricted in upper right side of abdomen
Umbilicus: Central in position, inverted.
Flanks are not full
No visible pulsation, peristalsis, engorged vein, pigmentation, or striae
Palpation:
Superficial palpation:
Temperature: Not raised
Tenderness: Present in right hypochondrium
No hyperesthesia, muscle guard or lump
Deep palpation:
Liver: Liver is enlarged, 3 cm from costal margin along the midclavicular line, tender, surface is smooth, soft in consistency, margin is sharp, upper border of liver dullness on right 5^{th} intercostal space, liver span…..cm. No hepatic bruit present.
Spleen: Not palpable
Kidneys: Not ballotable
Urinary bladder: Not palpable
Fluid thrill: Absent
Hernial orifice: Intact
Percussion:
Shifting dullness: Absent
Auscultation:
Bowel sound: Present
Renal bruit: Absent

Respiratory system examination: Intercostal fullness and tenderness at right lower chest

Other system examination: Normal

Salient feature:

Mr. Imrul Khayes, 50 years old, normotensive, non-diabetic, non-smoker, non-alcoholic, Muslim, shopkeeper hailing from Mymensingh Sadar, Mymensingh, presented with fever and abdominal pain for 6 days. 6 days back, he developed fever, which is high grade, intermittent, highest recorded temperature was 104^0F, subsided after taking paracetamol, associated with chills and rigor. There is no dysuria, joint pain, rash, cough, and chest pain, H/O travelling in malaria endemic area. He also complained of pain in right hypochondrium for same duration, dull aching in nature, radiating to right shoulder, more marked on lying right lateral position, coughing or deep breathing and gradually increasing in severity. He has no H/O abdominal surgery or trauma, abdominal distension, jaundice, recent H/O diarrhoea. The patient had no history orthopnea or leg swelling, no recent H/O working in dirty water. Patient also complained of loss of appetite, malaise and weight loss over this period. Weight loss is unintentional not documented, evidenced by loosening of his cloths, not associated with heat intolerance, palpitation, tremor, increased frequency of micturition and thirst, dizziness on standing, pigmentation. His bowel and bladder habit are normal. He took several medications from quack but couldn't mention the names of those drugs before admission to this hospital. After admission to this hospital, he has undergone some blood tests and abdominal ultrasound and is being treated with some injectable and oral medications. On general examination, patient is ill looking, non-anemic, mildly icteric, pulse 96/min, BP 100/60 mm of Hg, no postural drop, temperature 101^0F, respiratory rate 18/min, IV cannula in situ, lymph nodes not palpable, no thyromegaly, no clubbing, no bony tenderness, no dehydration, no oedema. Abdominal examination reveals tender hepatomegaly, Respiratory system examination reveals intercostal fullness and tenderness at right lower chest. Other system examinations reveal no abnormality.

Provisional diagnosis: Liver abscess (Probably pyogenic)

Differential diagnoses:

1. Viral hepatitis **(**If jaundice present)
2. Leptospirosis
3. Acute cholecystitis

Investigations:

1. CBC
2. **LFT:**
   a. ALP
   b. Bilirubin
   c. Aminotransferases
   d. Serum albumin
3. USG hepatobiliary system
4. CXR PA view
5. Blood for C/S
6. USG-guided aspiration of pus for C/S
7. CT scan of HBS

Treatment:

1. Amoxicillin
2. Gentamicin
3. Metronidazole
4. Paracetamol
5. General management: IV fluid if unable to intake

CROSS QUESTIONS

What is your provisional diagnosis? Liver abscess

Why?

Points in favor:

A. History:

1. Fever
2. Right upper abdominal pain
3. (H/O bloody diarrhoea may be present)

B. On examination:

1. Temperature is raised
2. Tender hepatomegaly present
3. Jaundice (Mild)
4. Intercostal fullness and tenderness on percussion over right lower chest

What are your DDs?

1. Acute viral hepatitis
2. Leptospirosis
3. Acute cholecystitis

Why? Why not?

Acute viral hepatitis:

Points in favor:

1. Jaundice (If present)
2. Fever
3. Abdominal pain
4. Tender hepatomegaly

Points against:

1. No prodrome of anorexia, nausea, vomiting
2. High fever

Why not HCC?

Point in favor: Tender hepatomegaly

Points against:

1. Liver is soft (Hard in HCC)
2. No stigmata of CLD
3. No jaundice

Which is the common site of liver abscess?

Right lobe as right portal vein is more prominent.

Mention one single investigation for the diagnosis. USG of hepatobiliary system.

What are the causes of tender hepatomegaly?

1. Acute viral hepatitis
2. Liver abscess
3. CCF
4. HCC
5. Budd-Chiari syndrome
6. Leptospirosis

What are causes of fever with chills and rigor?

1. Pyelonephritis (Upper UTI)
2. Malaria
3. Cholangitis
4. Lobar pneumonia
5. Any abscess

LIVER ABSCESS

Types:

1. Pyogenic
2. Amoebic
3. Hydatid (Professors don't like to listen hydatid in viva.)

[Davidson-24th-891]

Pathophysiology:

- ✓ Immunocompromised and diabetic patients are likely to develop liver abscess.
- ✓ Pyogenic liver abscess is more common in older people and usually results from ascending infection sue to biliary obstruction (Cholangitis) or contagious spread from empyema gall bladder.
- ✓ Multiple abscesses more usually due to biliary obstruction and may be polymicrobial.

[Davidson-24th-891]

Causes of pyogenic liver abscesses:

1. Biliary obstruction (cholangitis)
2. **Hematogenous:**
   a. Portal vein (intra-abdominal infections)
   b. Hepatic artery (bacteremia)
3. Direct extension
4. Trauma: Penetrating or non-penetrating
5. Infection of liver tumor or cyst

[Davidson-24th-891]

Causative organisms:

Pyogenic:

1. **Most common:** *E. coli, Klebsiella pneumoniae, Strep. milleri*
2. Anaerobes such as Bacteroides (From large gut pathology)

[Davidson-24th-891]

Amebic: Entamoeba histolytica
Hydatid: Echinococcus granulosus

Mechanism of amoebic liver abscess:

After ingestion of cyst →Enter into colon and form flask shape ulcer in caecum → Enter into portal circulation and goes to liver sinusoids → Block portal circulation → Ischemic necrosis of hepatocyte and formation of abscess.

Management of liver abscess:

Clinical features:

Pyogenic liver abscess:

Symptoms:

1. **Fever:** With chills and rigor
2. Weight loss
3. **Right upper abdominal pain:** Pleuritic in nature, may radiate to right shoulder
4. Pleuritic right lower **chest pain** (may be small pleural effusion, pleural rub)
5. Atypical presentation: Anorexia, diarrhoea, dyspnea, unknown origin **(PUO)**

Signs:

1. **Jaundice:** Usually mild, may be severe if large abscess causes biliary obstruction
2. **Abdominal examination:** Tender hepatomegaly

[Davidson-24th-891-92]

Amebic liver abscess (Common in right lobe, usually single):

1. History of diarrhea or intestinal disease (absent in 50% cases)
2. Local discomfort, malaise

3. Fever (low grade): With sweating
4. Tender hepatomegaly
5. Cough and right shoulder pain

[Davidson-24th-831-32]

Investigations:

1. **CBC:** Leukocytosis (Neutrophilia) in pyogenic liver abscess, raised ESR
2. **USG hepatobiliary system (Or CT scan or MRI):** Multiple small lesions in pyogenic and single large lesion in amoebic abscess.
3. **LFT:**
    a. ALP: Usually, high
    b. Serum albumin: Low
    c. Bilirubin: May be high
    d. Aminotransferases: Usually normal, may be slightly high
4. **CXR PA view:**
    a. Raised right dome of diaphragm
    b. Small right-sided pleural effusion or collapse of right lung.
5. **Blood for C/S**: Positive in pyogenic (In 50-80% cases)
6. **USG-guided aspiration** of pus for C/S

[Davidson-24th-892]

Treatment:

Pyogenic liver abscess:

1. **A**mpicillin plus **G**entamicin plus **M**etronidazole **(AGM)**
2. **If large (>5 cm) liver abscess or not responding to antibiotic:** USG guided percutaneous aspiration
3. **Surgical drainage**

[Davidson-24th-892]

Amebic liver abscess:

1. **Metronidazole** (800 mg 8 hourly for 10 days) or Tinidazole or ornidazole or Nitazoxanide
2. **To eliminate luminal cyst:** Diloxanide furoate or paromomycin
3. **USG guided aspiration:** If large (>5 cm), no response to medical therapy or threaten to burst.

[Davidson-24th-832]

Differences between amoebic and pyogenic liver abscess:

Traits	Pyogenic	Amoebic
1. **Incidence**	Uncommon	Common
2. **Causative organism**	*E.coli* and others	*E. histolytica*
3. **History**	H/O cholangitis, septicemia, portal pyemia etc.	H/O amoebiasis
4. **Immunocompromising**	More common in Immunocompromised patients	Not so
5. **Fever**	High grade fever with chills and rigor	Mild to moderate fever, no chills and rigor

6. **Appearance of patient**	Toxic	Not toxic
7. **Neutrophilic Leucocytosis**	Common	Not common
8. **USG**	Multiple lesions	Single lesion
9. **Aspiration**	Frank pus	Anchovy sauce (Chocolate colour)
10. **Blood for C/S**	Positive in 50-80% cases	Negative
11. **Treatment**	Ampicillin + Gentamicin +Metronidazole	Metronidazole + Diloxanide furoate
12. **Duration of Rx**	Long (More than 2-3 weeks)	Short (5-10 days)
13. **Prognosis**	More fatal	Less fatal

What do you mean by anchovy sauce? Chocolate color like sauce as pus mixed with blood

What will you do if CS shows that abscess was caused by gut derived organism?

Colonoscopy to exclude colorectal carcinoma.

[Davidson-24th-892]

In which position patient will lie? Why?

- ✓ Left lateral position patient lie
- ✓ Because in this position intercostal spaces widen, and patient feel comfort

Complications of liver abscess:

1. Rupture into lung: Producing lung abscess
2. Rupture into pleural cavity: Producing empyema thoracis
3. Rupture into peritoneal cavity
4. Rupture below diaphragm
5. Rupture into stomach: Causing hematemesis and vomiting out of pus
6. Rupture externally: Causing sinus, fistula
7. Septicemia and septic shock

Why abscess in left lobe is more dangerous?

1. Proximity to pericardium and heart
2. Subcutaneous and more prone to rupture

How will you understand that it is impending rupture?

When it can be felt by examiner's hand

Factors associated with complications of liver abscess:

1. Large abscess (>10cm) in superior part of right lobe
2. Multiple abscesses
3. Lesions of the left lobe

AT A GLANCE: LIVER ABSCESS

Presenting complaints	1. Fever for short duration. 2. Abdominal pain for same duration.
History of present illness	1. Elaborate fever 2. Elaborate abdominal pain 3. Elicit the cause of liver abscess 4. Exclude DD **5.** Look for other features of liver abscess 6. Bladder habit is normal. No HTN, no DM.
General examination	Appearance: Ill looking Decubitus: Left lateral position Jaundice: Mild (Or may be absent) Temperature: 101^0 F IV cannula in situ:
Alimentary system examination	1. Swelling in right hypochondrium and fullness of right lower intercostal space **2.** Movement is restricted in upper right side of abdomen 3. Tenderness present in right hypochondrium 4. Tender hepatomegaly
Provisional Dx	Liver abscess (Probably pyogenic)
DD	Acute viral hepatitis **(**If jaundice present)
Investigations	1. CBC 2. USG hepatobiliary system 3. LFT: ALP, Bilirubin, Aminotransferases, Serum albumin 4. CXR PA view 5. Blood for C/S 6. USG-guided aspiration of pus for C/S
Treatment	1. Amoxicillin 2. Gentamicin 3. Metronidazole 4. Paracetamol