

# Liver Abscess - A Case Study

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**Abstract-** Liver abscess is a pus-filled cyst in the liver. The liver is an organ in the digestive system that assists the digestive process and carries out many other essential functions. These functions include producing bile to help break down food into energy; creating essential substances, such as hormones; cleaning toxins from the blood, including those from medication, alcohol and drugs; and controlling fat storage and cholesterol production and release. Early diagnosis and early treatment process may reduce the complication of the disease condition.

**Index Terms-** Liver, Abscess, Rupture, Abdominal pain, Ascities

## I. INTRODUCTION

### CASE STUDY OF MR X

Mr X 67 Years old male presented with history of abdominal pain for 5 days. Mr X had a past history of diabetes mellitus, Hypertension and he underwent surgery in scrotum. There was no family history of hereditary disease. In present history patient developed fever, abdominal pain and constipation for 5 days. Patient was brought on septic shock and initially we went to peritoneal drainage was done. On examination abdominal distension noted and liver sizes increases 8.85cm hyper echoic section noted, ascities present in USG Abdomen, chest x-ray showed increased broncho vascular markings and USG Chest Right pleural effusion noted. Mr X was diagnosed as Rupture Liver Abscess.

**Liver Abscess** is pus – filled mass inside the Liver. Common causes are abdominal infections such as appendicitis or diverticulitis due to haematogenous spread through the portal vein.



### INCIDENCE:

The incidence rate of liver abscess was 0.3%, 1.1% and 1.5% at 1 year, 5 years and 7 years. Overall hospital mortality was 10.1% 224/100,000 persons affected with liver abscess.

### TYPES:

There are three major forms of liver abscess, classified by **etiology**:

- **Pyogenic liver abscess**, which is most often polymicrobial, accounts for 80% of hepatic abscess cases in the United States.
- **Amoebic liver abscess** due to **Entamoeba histolytica** accounts for 10% of cases.

Fungal abscess, most often due to **Candida** species, accounts for less than 10% of cases

### ETIOLOGY:

- Abdominal infection such as **appendicitis**, **diverticulitis**, or a **perforated bowel**
- Infection in the blood
- Infection of the bile draining tubes
- Recent **endoscopy** of the bile draining tubes
- Trauma that damages the liver

The most common bacteria that cause liver abscesses are:

- Bacteroides
- Enterococcus
- Escherichia coli
- Klebsiella
- Staphylococcus
- Streptococcus

In most cases, more than one type of bacteria is found

### PATOPHYSIOLOGY:

Infections in organs in the portal bed can result in a localized septic thrombophlebitis, which can lead to liver abscess. Septic emboli are released into the portal circulation, trapped by the hepatic sinusoids, and become the nidus for microabscess formation. These micro abscesses initially are multiple but usually coalesce into a solitary lesion. Microabscess formation can also be due to hematogenous dissemination of organisms in association with systemic bacteremia, such as endocarditis and pyelonephritis.

**CLINICAL MANIFESTATION:**

BOOK PICTURE	PATIENT PICTURE
<ul style="list-style-type: none"> <li>• Clay-colored stool</li> <li>• Dark urine</li> <li>• <a href="#">Fever</a>, chills</li> <li>• <a href="#">Loss of appetite</a></li> <li>• <a href="#">Unintentional weight loss</a></li> <li>• <a href="#">Weakness</a></li> <li>• Yellow skin (jaundice)</li> <li>• Abdominal pain                             <ul style="list-style-type: none"> <li>• Particularly in the right, upper part of the abdomen</li> <li>• Intense, continuous, or stabbing pain</li> </ul> </li> <li>• Diarrhea (in only one-third of patients)</li> <li>• General discomfort, uneasiness, or ill feeling (<a href="#">malaise</a>)</li> </ul>	<ul style="list-style-type: none"> <li>• .....</li> <li>• present</li> <li>• present</li> <li>• present</li> <li>• present</li> <li>• present</li> <li>• .....</li> <li>• Present</li> </ul>
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**INVESTIGATION:**

*Investigations – Patient Value:*

Investigations	Patient value	Reference value
Haemoglobin	9.4%	12-14gm%
Total count	9,800 cells/mm	4,000-11,000
Differential Count		cells/mm
Polymorphs	74%	50% - 70%
Lymphocytes	20%	30% - 60%
Eosinophils	6%	1% - 4%
Erythrocyte	48 mts	1 hr -10 mm
Sedimentation rate		
PCV	30%	40-54%
Platelets	1.85lakhs/cumm	3.0-5lakhs/cumm
B. Urea	80mg	20-40mg
Sr. Creatinine	1.5mg	6-1.4mg
Blood Sugar	60mg/dl	80-120mg/dl

## ULTRASONOGRAM ABDOMEN

Liver sizes increases 8\*8.5cm hyper echoic section noted in right lobe of liver segment

Spleen normal

Gall Bladder Normal

Pancreas normal

Both Kidney normal

Ascites +

## USG CHEST

Right pleural effusion

EKG — Normal

CHEST X-Ray – increased broncho vascular markings.

## MANAGEMENT:

### MEDICAL MANAGEMENT:

Antibiotics such as metronidazole (Flagyl) or tinidazole (Tindamax) are the usual treatment for liver abscess. A medication such as paromomycin or diloxanide must also be taken to get rid of all the amoebas in the intestine, to prevent the disease from coming back. This treatment can usually be delayed until after the abscess has been treated.

In rare cases, the abscess may need to be drained to relieve some of the abdominal pain.

### SURGICAL MANAGEMENT:

#### DIAGNOSTIC PERITONEAL LAVAGE (DPL) :

Diagnostic peritoneal lavage is a procedure where, after application of [local anesthesia](#), a vertical skin incision is made one third of the distance from the [umbilicus](#) to the [pubic symphysis](#). The [linea Alba](#) is divided and the peritoneum entered after it has been picked up to prevent bowel perforation. A catheter is inserted towards the pelvis and aspiration of material attempted using a syringe. If no blood is aspirated, 1 liter of warm 0.9% saline is infused and after a few (usually 5) minutes this is drained and sent for analysis

### MANAGEMENT FOR MR.X:

INJ. MEROPENOM	1gm	IV	Tds
INJ.DERIPHYLLINE		IV	Bd
INJ.ALBUMIN		IV	Od
INJ. RANTAC		IV	Tds
INJ. TRAMADOL		IV	Sos

### COMPLICATIONS:

The abscess may rupture into the abdominal cavity, the lining of the lungs, the lungs, or the sac around the heart. The infection can also spread to the brain.

### NURSING DIAGNOSIS:

1. Altered breathing pattern related to pressure on diaphragm secondary to ascites as evidenced by tachypnea
  - Assess the breathing pattern of the patient. Provide comfortable bed and position, Administer oxygen and tapping ascetic fluid send to cytology, Encourage the patient to take deep breath Q2H
2. Fluid volume excess related to impaired metabolism of aldosterone.

- Assess edema with edema scale. Maintain daily weight and abdominal girth, advice the patient to restrict fluid and salt. Administer diuretics, maintain intake and

Output chart.

## II. SUMMARY:

Mr. X 67 years was co-operative with health personnel. Although his symptoms were well responding to treatment, it was recurring, but he did not develop further complications during hospital stay.

## III. CONCLUSION:

Prevention of diseases is of fundamental importance, when travelling in tropical countries with poor sanitation, drink purified water and do not eat uncooked vegetables or unpeeled fruit. Without treatment, the abscess may break open (rupture) and spread into other organs, leading to death. People who are treated have a very high chance of a complete cure or only minor complications.

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