

A CASE OF GIANT LIVER ABSCESS

Dr. Nikhila Phadnis^{1*}, Dr. Govind Shiddapur², Dr. Nidhi Rana³, Dr. Prateek Harsh⁴

1. Junior Resident, Department of General Medicine, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Dr. D.Y. Patil Vidyapeeth Pimpri, Pune, 411018.
2. Professor, Department of General Medicine, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Dr. D.Y. Patil Vidyapeeth Pimpri, Pune, 411018.
3. Junior Resident, Department of General Medicine, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Dr. D.Y. Patil Vidyapeeth Pimpri, Pune, 411018.
4. Junior Resident, Department of General Medicine, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Dr. D.Y. Patil Vidyapeeth Pimpri, Pune, 411018

***Corresponding Author:**

Dr. Nikhila Phadnis, 3rd Year Post Graduate, Department of General Medicine, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Dr. D.Y. Patil Vidyapeeth Pimpri, Pune, Maharashtra, India

ABSTRACT

Liver abscesses can be tricky to diagnose, with varying etiologies. As seen in this case of a 40-year-old male, who presented with pain abdomen and vomiting. A contrast scan revealed a giant hepatic abscess, with an impending perforation. A percutaneous drain was immediately inserted. Over the course of four months, the abscess was drained completely.

Keywords: Hepatic, abscess, infectious, liver

INTRODUCTION

Liver abscesses can be tricky to diagnose. They are divided into three categories, based on their etiology: iatrogenic, malignant, and infectious.

Infectious causes include parasites, fungal organisms and bacteria.

Bacteremia, intra-abdominal infections that reach the portal system, and those which are due to extension from local infection are all examples of infectious abscesses.

Case report

A 40-year-old male, farmer by occupation, came with complaints of pain abdomen in the right upper quadrant, increasing with food consumption, and yellowish discolouration of sclera in the last 2 months.

He had multiple episodes of vomiting in the past 2 days, non-bloody, non-bilious, associated with high grade fever spikes, which were continuous, without any diurnal variation. He had no known comorbidities.

History of consumption of alcohol (country liquor, 1-2 pints per month) in the past 3 years. No history of tobacco chewing or other substance abuse.

On admission :

Patient was conscious, oriented to time, place, person.

BP - 100/70 mmHg

PR - 80/min

Pallor and icterus were both present

On examination, patient is lean, with a weight of 50kgs and height 160cm

Laboratory Parameters:

Hb- 12 **TLC-23,000** Platelets- 3.85 lakhs

Liver function tests: Total Bilirubin- 15/Direct Bilirubin-11

SGOT- 468/SGPT- 228/ALP- 976

Urea- 134/**Creatinine - 2.62**

INR was 1.73

USG (Abdomen+Pelvis) on Day 1 of admission

Liver- 20cm, hepatomegaly and moderately fatty liver with few areas of fat sparing, obscuring most of the posterior half. Right lobe of liver, in subcapsular sub diaphragmatic region, shows a **huge irregularly margined abscess with moderate soft tissue oedema**, together measuring 14x15x16 cm, with volume of 1500 cc. Shows **strong risk of impending perforation of liver abscess into subdiaphragmatic space.**

Contrast enhanced CT scan of abdomen and pelvis: Right lobe of liver, in subcapsular sub diaphragmatic region, shows a huge irregularly margined abscess with moderate soft tissue oedema, together measuring 14x15x16 cm, with volume of 1500 cc.

On admission, patient was started on the following medications:

Inj. Metronidazole 100 ml TDS iv

Inj. Piperacillin-Tazobactam 2.25 g iv TDS (renal dose)

Inj. Vit K, given as 30 mg stat followed by 10 mg OD for 3 days

Tab Tinidazole 1g BD

Patient was advised USG guided pigtail catheter insertion.

4 FFPs were given in view of deranged INR.

Under USG guidance, 10 French pigtail catheter was inserted and 500 cc approximately was drained at first. Throughout the inpatient stay, pus was continuously drained into urobag. The pigtail catheter was continuously flushed with metronidazole solution thrice a day. Pus culture and sensitivity of frank pus was sent.

On fourth day of admission, pus culture sensitivity report came positive for **Escherichia coli growth**

Patient followed up four times for repeat PCD insertion, till the abscess was completely drained and only soft tissue oedema was present.

Serial USG findings

1) Day 5 (10th June) - Right lobe shows huge abscess with moderate soft tissue oedema, measuring 12x13x12c, with a volume of **1060 cc**. Still shows strong risk of impending perforation of abscess into right subdiaphragmatic space. Pigtail catheter seen in situ.

2) Day 10 (15th June) - Right lobe of liver shows abscess with surrounding soft tissue oedema, volume of **960 cc, with 50 cc subcapsular fluid collection**. Mild risk of impending perforation of liver abscess into right subdiaphragmatic space. Pigtail noted, in situ.

Patient was discharged, asked to follow up for serial monitoring of the size of the abscess.

On discharge, the total leucocyte count had come to 11,900/mm³

Serum Creatinine - 0.91

Liver function tests: TB- 2.63/DB- 2.40/SGOT- 44/SGPT- 37/ALP - 274

3) Day 34 (9th July) - Liver measures 18 cm, right lobe shows abscess with surrounding soft tissue oedema. Volume is **700 cc**, pigtail catheter in situ.

4) Day 69 (14th August) - Right lobe of liver, in subcapsular sub diaphragmatic space, shows residual soft tissue oedema with air-bubbles within, measuring **71 cc**. Pigtail catheter in situ.

5) Day 82 post first admission (27th August) - Right lobe of liver shows residual soft tissue oedema with air bubbles seen within, measuring **24cc**. Pigtail catheter in situ.

6) Day 90 post first admission (8th Sept) - Right lobe of liver shows reduced residual soft tissue oedema with no fluid collection, measuring 10cc.

7) 133 days (18th Oct) - Right lobe of liver shows reduced residual soft tissue oedema with scarring, measuring 5x3x2 cm. No fluid collection noted.

4 months after first date of admission, the hepatic abscess was resolved. Only soft tissue oedema was noted on ultrasound.



Figure 1: Xray erect abdomen on admission revealing elevation of the right hemidiaphragm. There is high risk of impending perforation of liver abscess into sub diaphragmatic space.

Figure 2a & 2b: Contrast enhanced Computed Tomography of the abdomen and pelvis revealing huge irregularly marginated abscess with moderate soft tissue oedema (volume 1500 cc)

Figure 1

Figure 2a

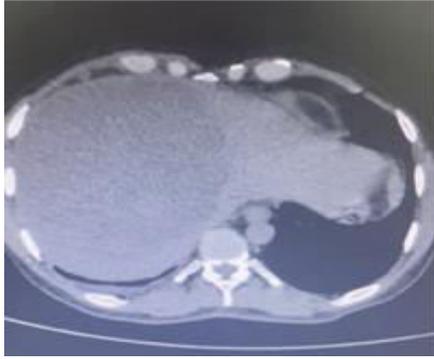


Figure 2b



Discussion

A hepatic abscess is defined as a collection of suppurative material within the parenchyma of the liver, which is encapsulated^{2,7}.

Symptoms include, but are not limited to, pain in the right upper quadrant of the abdomen, high-grade fever, vomiting, and jaundice. As these symptoms are vague, diagnosis relies heavily on imaging studies³.

Those patients with comorbidities face an increased risk of developing hepatic abscesses³, for example, diabetes mellitus, immunocompromised states (solid malignancies, patients on chemotherapy)³.

Pyogenic abscesses can occur due to prior biliary disease, trauma, or extension from any abdominal infection. Almost 20% are cryptogenic i.e. of uncertain origin^{5,9}. Approximately 70% show positive cultures reports⁵.

In diagnostic techniques, ultrasonography is preferred first. CT can identify abscesses as tiny as 0.5 cm in size. Once aspirate is removed, Gram staining will reveal bacteria and polymorphonuclear leukocytes in pyogenic abscesses⁵. The best way to confirm a diagnosis of an amoebic liver abscess is via serology.^{5,10}

Hence, in the category of infectious abscesses, it is important to differentiate between amoebic and pyogenic liver abscesses.

Amoebic liver abscesses are most commonly caused by *Entamoeba histolytica*. They are frequent in younger populations and can present with normal liver function tests⁴.

In this case, the abscess was pyogenic in nature, satisfying the following criteria i.e., patient was of male gender and middle-aged, deranged liver function tests, and CT findings included a single large abscess, occupying one lobe, with irregular margins⁴.

The patient is usually managed conservatively, whereas the mainstay of treatment for pyogenic abscesses is percutaneous drainage and adequate antibiotic coverage.^{4,8} The medicines chosen should be effective against the most prevalent bacteria seen in liver abscesses.^{5,6}

References

1. Barshak M, Kasper D. Intraabdominal Infections and Abscesses, Chapter 132 pages 1054-1060 Harrison's Principles of Internal Medicine, 21st Edition, Volume 1.
2. Lardièrre-Deguelte S, Ragot E, Amroun K, Piardi T, Dokmak S, Bruno O, Appere F, Sibert A, Hoeffel C, Sommacale D, Kianmanesh R. Hepatic abscess: Diagnosis and management. *J Visc Surg.* 2015 Sep;152(4):231-43.

3. Pang TC, Fung T, Samra J, Hugh TJ, Smith RC. Pyogenic liver abscess: an audit of 10 years' experience. *World J Gastroenterol*. 2011 Mar 28;17(12):1622-30.
4. Gaetan Khim, Sokhom Em, Satdin Mo. Liver abscess: Diagnostic and management issues found in the low resource setting. *British Medical Bulletin* December 2019 132. (1)
5. Sayek I, Onat D. Pyogenic and amebic liver abscess. In: Holzheimer RG, Mannick JA, editors. *Surgical Treatment: Evidence-Based and Problem-Oriented*. Munich: Zuckschwerdt; 2001.
6. Akhondi H, Sabih DE. Liver Abscess. [Updated 2022 Jul 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK538230/>
7. Mavilia MG, Molina M, Wu GY. The Evolving Nature of Hepatic Abscess: A Review. *J Clin Transl Hepatol*. 2016 Jun 28;4(2):158-68.
8. Priyadarshini R, Prakash V, Anand U, Kumar P. Ultrasound-guided percutaneous catheter drainage of various types of ruptured amebic liver abscess: a report of 117 cases from a highly endemic zone of India. *Abdominal Radiology* 44 (3) (2019) 44 :877–885.
9. Santos-Rosa OM, Lunardelli HS, Ribeiro-Junior MA. PYOGENIC LIVER ABSCESS: DIAGNOSTIC AND THERAPEUTIC MANAGEMENT. *Arq Bras Cir Dig*. 2016 Jul-Sep;29(3):194-197.
10. Haque R, Mollah NU, Ali IK, Alam K, Eubanks A, Lyerly D, Petri WA Jr. Diagnosis of amebic liver abscess and intestinal infection with the TechLab *Entamoeba histolytica* II antigen detection and antibody tests. *J Clin Microbiol*. 2000 Sep;38(9):3235-9.