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Cardiac tamponade: A rare presentation of pyogenic liver abscess as life threatening emergency

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Abstract

Pyogenic liver abscess is uncommon but a fatal condition. Cardiac tamponade is one of the potentially life-threatening complications of pyogenic liver abscess and is a medical emergency requiring immediate diagnosis and intervention. A 58-year-old male patient presented with fever, generalised weakness, cough with expectoration and gradually worsening dyspnoea and orthopnoea. Electrocardiogram revealed pericarditis; transthoracic echocardiogram revealed circumcardiac pericardial effusion with diastolic collapse of right ventricle indicating cardiac tamponade. Emergency pericardiocentesis was performed and pus-like pericardial fluid was drained. Liver abscess was diagnosed and managed surgically by laparoscopic drainage with placement of right intercostal and abdominal drain. Gradual decline in drain output was observed, drain was removed and patient was discharged in stable condition. This case emphasizes the timely intervention of procedures such as pericardiocentesis for cardiac tamponade and laparoscopic drainage for liver abscess which are lifesaving.

Keywords: Cardiac tamponade, pyogenic liver abscess, pericardiocentesis, laparoscopic drainage

Introduction

Liver abscess is an inflammatory lesion of the liver caused by infectious agents, such as bacteria in case of PLA [1]. Pyogenic liver abscess (PLA) is one of the predominant causes of liver abscess which is a pus-filled suppurative liver infection [2]. Liver abscess, when left untreated, can rupture and cause life threatening complications [3]. One such complications arise when the rupture occurs into the pericardial sac leading to purulent pericarditis and this can quickly progress into cardiac tamponade a condition where an abnormal buildup of fluid in the pericardial sac impairs the heart function and can lead to shock [4, 5].

We report the case of cardiac tamponade, a rare presentation of pyogenic liver abscess as a life-threatening emergency who had received pericardiocentesis and later laparoscopic drainage of liver abscess.

Case Report

A 58-year patient presented with fever, generalised weakness, cough with expectoration and gradually worsening dyspnoea and orthopnoea. In emergency, he was hypoxic requiring oxygen support and hypotensive with muffled heart sounds. ECG (Electrocardiogram) was suggestive of diffuse ST segment elevation with PR depression and ST depression depicting pericarditis [Fig 1]. TTE (Transthoracic echocardiogram) was suggestive of circumcardiac pericardial effusion of 2.3 cm with diastolic collapse of RV (Right ventricle).

Emergency pericardiocentesis was done and drained around 400 ml of pus like pericardial fluid and sent for analysis. He was started on empirical antibiotics and ATT. Pericardial fluid analysis suggestive of 14000 cells with neutrophils of 70% and lymphocytes of 30% - pyogenic. smear for AFB is negative, gene xpert for MTB was negative, ATT was stopped. HRCT chest was done suggestive of bilateral upper lobe fibrosis, right lower lobe consolidation and a liver abscess [Fig 2]. CECT abdomen was suggestive of large liver abscess with hypodense collection in sub diaphragmatic region indicating possible rupture into right pericardial space and pericardial cavity [Fig 3].

Laparoscopic drainage of liver abscess with placement of right intercostal drain and abdominal drain was done. Repeat 2D echo was suggestive of no pericardial effusion and the pigtail was removed. There was gradual decline in the drain output and drain was removed on post-operative day 7 and was discharged on day 12 in haemodynamically stable condition.

Discussion

Although rare, cardiac tamponade is a potential complication of pyogenic liver abscess, it poses significant challenges due to its latent clinical presentation and increased morbidity due to possible delay in diagnosis [6]. The demographic details of current case reflect the conclusion of a study conducted by Tian *et al.* that the incidence of Pyogenic liver abscess is high in elderly, middle-aged males [7].

Clinical presentations that frequently arise in pyogenic liver abscess include pain in the upper abdominal quadrants, nausea, vomiting and elevated fever which aligns with our case in symptoms like fever, generalised weakness, cough with expectoration, gradually worsening dyspnoea [8].

The patient was examined with ECG which suggested pericarditis and Echocardiography revealed pericardial effusion with diastolic collapse of RV (Right ventricle). Clinical suspicions of cardiac tamponade can be confirmed by ECG findings. Although pericardial effusion may be suggested by a chest X-ray or CT scan, echocardiography is the most effective way to confirm effusion, evaluate its severity and identify cardiac compromise. In our case

emergency pericardiocentesis was performed and pus like pericardial fluid was drained. Pericardiocentesis is a clinically significant, potentially lifesaving procedure in case of cardiac tamponade [9].

To identify the underlying cause of the effusion, fluid analysis may be performed [10]. Analysis of drained fluid in our case revealed pyogenic nature as indicated by the presence of 14000 cells with 70% neutrophils and 30% lymphocytes. Bilateral upper lobe fibrosis, right lower lobe consolidation and a liver abscess were revealed by HRCT and CECT abdomen was suggestive of large liver abscess. Liver abscess was surgically managed by laparoscopic drainage with placement of right intercostal drain and abdominal drain was done.

A similar case of a liver abscess with transdiaphragmatic extension that required surgical drainage due to purulent pericarditis and tamponade was reported by Cho *et al.* Pericardiocentesis and laparoscopic abscess drainage were used to treat our patient's pericardial effusion. Both cases demonstrate the necessity of quick intervention and the uncommon but serious consequence of pericardial involvement in liver abscesses [11].

Another case reported by Steffan *et al.* where a 33-year-old male developed purulent pericarditis after pericardial tamponade brought on by a transdiaphragmatic rupture of a subphrenic and retro splenic abscess that extended into the pericardial cavity was similar to our case where patient presented with cardiac tamponade due to pyogenic pericardial effusion, later found to be associated with a large liver abscess and sub diaphragmatic collection [12].

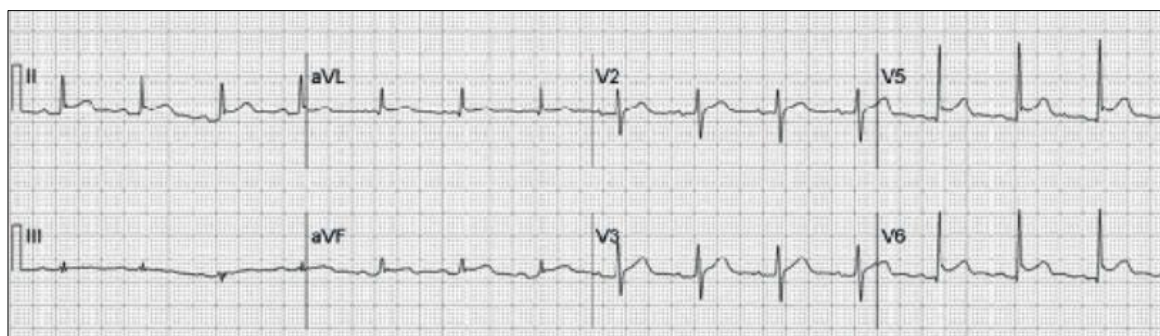


Fig 1: ECG showing diffuse ST segment elevation with PR depression

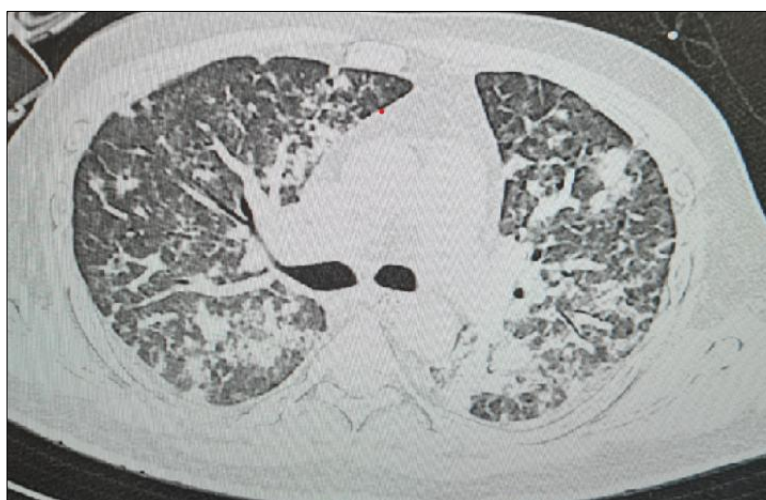


Fig 2: HRCT of bilateral upper lobe fibrosis, right lower lobe consolidation

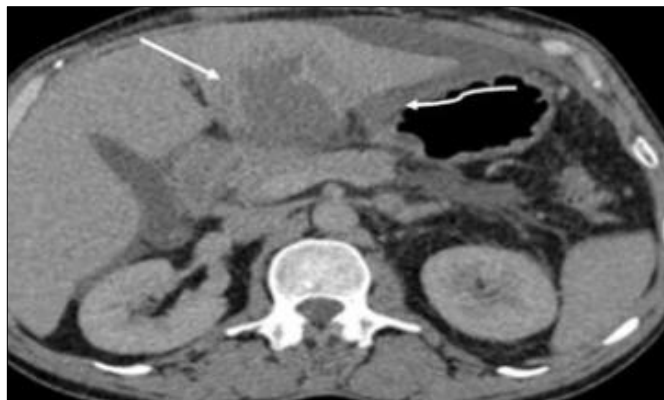


Fig 3: CECT abdomen showing large liver abscess with hypodense collection in sub diaphragmatic region

Conclusion

Cardiac tamponade is a rare presentation of pyogenic liver abscess and is a life-threatening. We emphasize, from this case, that prompt diagnosis despite atypical symptoms followed by timely intervention can be lifesaving.

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Declarations

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References

- Sharma S, Ahuja V. Liver abscess: complications and treatment. *Clin Liver Dis (Hoboken)*. 2021;18(3):122-126.
- Arya R, Kumar R, Priyadarshi RN, Narayan R, Anand U. Vascular complications of liver abscess: a literature review. *World J Meta-Anal*. 2024;12(3):94519.
- Akhondi H, Sabih DE. Liver abscess. *Treasure Island (FL): StatPearls Publishing*; 2025: <https://www.ncbi.nlm.nih.gov/books/NBK538230/>
- Hunt DJ, McLendon K, Wiggins M. A case report of cardiac tamponade. *J Educ Teach Emerg Med*. 2020;6(2):V8-12.
- Stashko E, Meer JM. Cardiac tamponade. *Treasure Island (FL): StatPearls Publishing*; 2025: <https://www.ncbi.nlm.nih.gov/books/NBK431090/>
- Boaz E, Ben-Chetrit E, Bokhobza Y, Yellinek S, Ben-Haim M, Reissman P, Dagan A. Pyogenic liver abscess: contemporary trends in a tertiary institute. *Int J Clin Pract*. 2022;2022:4752880.
- Tian Y, Hao D, Du J, Wang H, Wen X. Summary of clinical features of 1800 cases of pyogenic liver abscess. *Eur J Gastroenterol Hepatol*. 2025;37(4):483-487.
- Sotto Mayor J, Robalo MM, Pacheco AP, Esperança S. Pyogenic liver abscess: uncommon presentation. *BMJ Case Rep*. 2016;2016:bcr2016214841.
- Willner DA, Shams P, Grossman SA. Pericardiocentesis. *Treasure Island (FL): StatPearls Publishing*; 2025: <https://www.ncbi.nlm.nih.gov/books/NBK470347/>
- Sullivan A, Dennis ASC, Rathod K, Jones D, Rosmini S, Manisty C, *et al*. Pericardial fluid analysis in diagnosis and prognosis of patients who underwent pericardiocentesis. *Am J Cardiol*. 2023;198:79-87.
- Cho E, Park SW, Jun CH, Shin SS, Park EK, Lee KS, *et al*. A rare case of pericarditis and pleural empyema secondary to transdiaphragmatic extension of pyogenic liver abscess. *BMC Infect Dis*. 2018;18(1):40.
- Steffen C, Sägmüller J, Schöneburg D, Göncz E, Möckel M, Ott S, *et al*. Pyopericardium with cardiac tamponade caused by pyogenic liver abscess: a case report. *J Med Case Rep*. 2025;19(1):7.

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