

## Elevated pancreatic enzymes within the content of liver abscess in a patient with a history of chronic pancreatitis

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### Introduction

Liver abscess accounts for 48% of visceral abscesses<sup>1</sup> and presents with significant morbidity and mortality. The overall incidence of pyogenic liver abscess is 3.6 per 100,000 populations,<sup>2</sup> however; elevated pancreatic enzymes within the content of a liver abscess have never been reported in the literature.

### Case report

A 36-year-old African American male with a history of chronic pancreatitis presented to the emergency department for abdominal pain in the epigastric area along with nausea, vomiting, diarrhoea, fever. His symptoms began 3-4 days before presentation. The abdominal pain was dull in nature and 6/10 in intensity, non-radiating. His past medical history was significant for HTN, diabetes mellitus and chronic diarrhoea secondary to chronic pancreatitis.

On admission the patient was alert and oriented, blood pressure was 97/44 mm Hg, heart rate 16 beats per minute, respiration 16 per minute, oxygen saturation 94% on room air and temperature 102°F. Abdominal examination revealed hyperactive bowel sounds and tenderness in the epigastrium & RUQ. Liver span was 14 cm. The rest of the examination was unremarkable.

Laboratory work revealed: Haemoglobin 9.8 g/dl, WBC 22.1 Thou/mm<sup>3</sup> with segmented neutrophils of 81% and 9% bands, BUN 54 mg/dl, Cr 4.7 mg/dl, total protein 10.4 g/dl, albumin 1.8 g/dl, total bilirubin 1.1 mg/dl, direct bilirubin 0.3 mg/dl, AST 98 IU/L, ALT 38 IU/L, alkaline phosphatase 250 IU/L, amylase 81 units/L, lipase 10 units/L, lactate 2.3 mmol/L and INR 1.39.

The patient was started on fluids and meropenem for broad spectrum coverage. However his condition worsened and he developed acute respiratory distress syndrome secondary to sepsis necessitating intubation. Due to his abdominal pain he underwent a computer tomography (CT) scan of the abdomen, which revealed pancreatic calcifications and multiple liver

abscesses; the largest measuring 7.5cm in the right lobe of the liver (Figure 1).



Figure 1

As the patient's condition did not improve, he underwent liver abscess drainage. Fluid analysis showed pH 4.0, LDH 39 units/L, glucose 81 mg/dl, protein 1.6 g/dl, lipase of 16 units/L and amylase 68 units/L. The presence of amylase and lipase in the liver abscess without any evidence of a fistula between liver and pancreas on CT scan was unexpected, therefore it was decided to leave the catheter in situ for continuous drainage.<sup>3</sup> Even though his blood and fluid cultures remained negative during the hospital stay he was continued on antibiotics, which may have meant that the initial antibiotic therapy rendered the blood cultures negative. The success of management was assessed with a hepatic CT 10 days post drainage and was demonstrated by the observation of improvement in the patient's general condition, as indicated by normal temperature, decreased draining catheter output and the resolution of deranged laboratory values. The catheter was then removed and the patient was discharged.

## Discussion

Liver abscesses develop via seeding through portal circulation, directly via spread from biliary infections or from surgical or penetrating wounds and also from systemic organs via haematogenous spread. In our case the most reasonable explanation was through the involvement of portal circulation due to recurrent pancreatitis.

The morbidity and mortality rate for liver abscesses ranges from 2 – 12 % depending on the severity of underlying comorbidities. The clinical manifestations, as in our case, are characterized by abdominal pain (50-75%), fever (90%), nausea and vomiting. Other symptoms may include weight loss, malaise and diarrhoea. On physical exam RUQ tenderness, guarding, rebound tenderness, hepatomegaly and occasional jaundice can be appreciated. The diagnosis of a liver abscess can be made by radiographic imaging followed by aspiration and culture of the abscess material. Liver abscesses can be either polymicrobial or monomicrobial, unlike in the case with our patient, whose abscess was sterile. Depending on the microbial results additional sources of infection should be evaluated. Drainage of abscesses can be percutaneous or open surgical. Percutaneous drainage with coverage of antibiotics was successful in our patient.

## Conclusion

In summary, we present a case of pancreato-liver abscess in a patient with a history of chronic calcified pancreatitis. It was treated with antibiotics and percutaneous drainage, with satisfactory resolution. To our knowledge this has never been reported in the literature and more work needs to be done to

understand the pathophysiology of elevated pancreatic enzymes in the context of a liver abscess in a patient with a history of chronic pancreatitis.

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### Competing Interests

None declared

### Author Details

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