

Introduction

Pyogenic liver abscess is a potentially life-threatening disease that is mostly polymicrobial with *Escherichia coli* as the common pathogen¹. Over the past 2 decades, primary liver abscesses caused by a single organism has emerged in Asian countries. *Klebsiella pneumoniae* is known to be endemic to Taiwan, accounting for 69% (171 patients) of pyogenic hepatic abscesses in 240 reported cases². The infection is noted to occur mostly in healthy individuals. However other predisposing risk factors include diabetes mellitus, fatty liver, renal disease, pneumonia, and malignancy^{3,4}. While the etiology of *K. pneumoniae* infection is unknown, prompt diagnosis and appropriate treatment can prevent progression to serious conditions including meningitis, endophthalmitis, and metastatic infection³. Here we report a case of *Klebsiella pneumoniae* liver abscess with bacteremia in the United States.

Clinical Case

A 50-year-old South Asian female with a past medical history of psoriasis on methotrexate and chronic hepatitis B infection presented with right upper quadrant abdominal pain, anorexia, and 2 episodes of fever spikes recorded at 101°F. The patient immigrated to the US in 2014 but recently traveled to Bangladesh one month prior.

Abdominal examination was positive for hepatomegaly with liver edge measuring 5 cm below the costal margin. Laboratory studies revealed elevated white count of 15.7 K/uL, lactic acidosis, elevated liver function enzymes with aspartate aminotransferase of 82 U/L, alanine aminotransferase of 62 U/L, and alkaline phosphatase of 717 U/L. Blood culture was positive for *Klebsiella pneumoniae*. Ultrasound of the abdomen showed a complex left cystic hepatic lobe mass. Computed tomography scan of the abdomen with IV contrast showed a 20.4 x 11.6 x 18.1 cm complex heterogeneous cystic mass pocket and foci of gas suspicious for an abscess (Image B). She was placed on antibiotics and the liver abscess was drained by ultrasound guided percutaneous aspiration with catheter.

The patient progressed well through her hospital course. Repeated CT showed improvement. Antibiotics were de-escalated and eventually went to subacute rehabilitation.



Image A: Coronal view of computed tomography scan of abdomen showing hepatomegaly and a hepatic abscess with inferior calcifications



Image B: Axial view of computed tomography scan with contrast of the abdomen showing a hepatic abscess measuring 20.4 x 11.6 x 18.1cm with foci of gas.

Discussion

Klebsiella pneumoniae is an emergent cause of primary liver abscess and intra-abdominal infection with a mortality rate between 4-11%⁵. Patients typically present with fever, nausea, vomiting, and right upper quadrant abdominal pain. Potential risk factors are Asian ethnicity, diabetes mellitus, immunocompromised state, history of malignancy, and immunosuppressant use - like in our patient who used methotrexate for the last 10 years. Management of pyogenic liver abscess requires appropriate potent broad-spectrum antibiotic regimen tailored to the culture results, in conjunction with abscess drainage and/or surgical intervention. The prognosis is better for patients with *K. pneumoniae* hepatic abscesses than for those with other bacterial liver abscesses⁴, however those with metastatic infections have poorer outcomes.

References:

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