

## Invasive liver abscess syndrome in North America

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### To the Editor,

Most community-acquired *Klebsiella pneumoniae* infections cause pneumonia or urinary tract infections. Invasive liver abscess syndrome is very rare in Western countries. Clinicians should be aware about invasive *Klebsiella pneumoniae* liver abscess especially in patients with Asian background presented with liver abscess failed the treatment with antibiotics. Over the past decade, few patients were diagnosed as having a liver abscess caused by *Klebsiella pneumoniae* in two case series in the United States of America (1). This is a 25 years old male from Philippines with no past medical history presented with fever, rigors, fatigue and night sweats for three days. Patient travelled to Philippines five months ago where he stayed for one month. Upon presentation, patient was febrile with Temp 104F, heart rate 139 beats/minute, and Blood pressure 113/76 mm Hg. He appeared to be diaphoretic and tachypneic on physical exam. Abdomen was soft and non-tender. Laboratory findings included leukocytosis of 14,000 with Bandemia, serum lactate level of 3.6, Liver function tests revealed aspartate aminotransferase level-(AST) of 62 U/mL, alanine aminotransferase level-(ALT) of 61 U/mL, gamma glutamyl transferase level-(GGT) of 48 U/mL, alkaline phosphatase level-(ALK) of 52 U/mL, leukocyte dehydrogenase level-(LDH) of 347 U/mL and total bilirubin 2.5 mg/dL and direct Bilirubin 1.6 mg/dL. Hepatitis serology revealed immunity against Hepatitis-B viral infection. Coagulation panels and renal function were normal. Abdominal imaging revealed diffuse hepatic changes suggestive of cirrhosis and complex avascular slightly lobulated hypoechoic mass with mild posterior enhancement measuring 7.2 × 6.8 cm in size noted in the anteromedial portion of posterior segment of the right lobe (Fig. A & B). Further laboratory tests include HIV testing, urine analysis, blood and urine cultures, Echinococcosis and Amoebic serology were none revealing. Empirical broad spectrum antibiotics of 3rd generation cephalosporin and metronidazole were initiated for possible amoebic versus pyogenic liver abscess. After 3-4 days from admission date, he developed persistent rigors, tachycardia, and appeared to have respiratory distress which required an urgent intubation for acute respiratory failure and transferred to intensive care unit where he required an urgent drainage for pyogenic liver abscess. Abscess fluid culture was positive for *Klebsiella pneumoniae*. Patient underwent

surgical drainage for liver abscess with continuous Jackson-Pratt liver drain suction and a total of four weeks of intravenous ceftriaxone 2 gm daily which was curative with remarkable decrease in the size of liver abscess on repeat imaging (Figure C). Invasive liver abscess syndrome is very rare in Western countries. For the past one to two decades, a distinct clinical syndrome has been emerging in Southeast Asia that is characterized by bacteremia, liver abscesses, and metastatic infections (2). Imaging with abdominal ultrasound or abdominal CT scan is essential. Invasive *Klebsiella pneumoniae* liver abscess can be found anywhere in the liver but most reported cases on the right lobe of the liver like Amoebic liver abscess (3). Pyogenic liver abscess is life threatening especially when *Klebsiella pneumoniae* isolated on culture causing primary pyogenic liver abscess especially with large abscess with size more than 5-6 cm with or without signs of septic shock or hemodynamic instability (4). That is why imaging-guided percutaneous hepatic abscess drainage should be done for patients with large abscess with positive blood culture for *Klebsiella pneumoniae* or in patients who have persistent fever despite antibiotic therapy after ruling out parasitic infection who might need careful surgical intervention or antibiotics therapy alone.

Treatment of invasive *Klebsiella pneumoniae* liver abscess requires dual approach medical and surgical as we approached our patient which he subsequently improved after CT-guided liver abscess drainage and four weeks of antibiotics therapy.

**Key words :** Liver, abscess.

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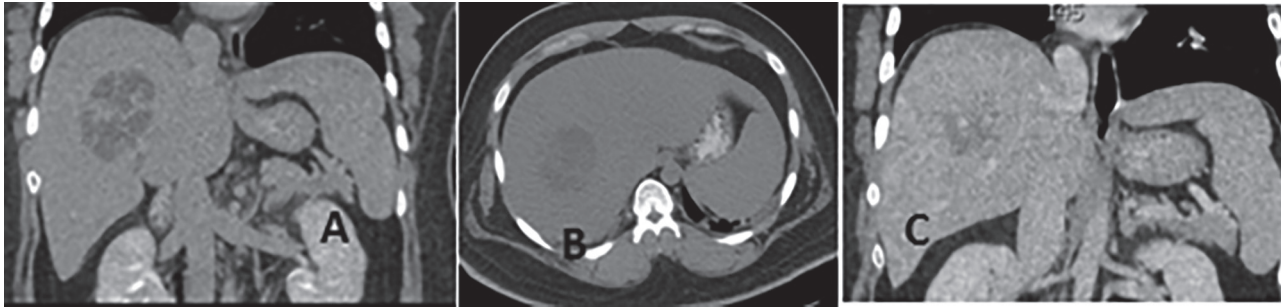


Fig. 1. — (A and B) diffuse hepatic changes suggestive of cirrhosis and complex avascular slightly lobulated hypoechoic mass with mild posterior enhancement measuring  $7.2 \times 6.8$  cm noted in the anteromedial portion of posterior segment of the right lobe C) 3-4 weeks after treatment.