A case of hypermucoviscous Klebsiella pneumoniae liver abscess syndrome in an Iraqi male

Summary
A 53-year-old man presented with fevers, productive cough and decreased appetite. He emigrated from Iraq 4 years ago. Chest x-ray revealed a left lung consolidation. Respiratory cultures and two sets of blood cultures grew out pan-susceptible Klebsiella pneumoniae. Liver ultrasound revealed a 6.4-cm complex lesion in the left hepatic lobe. A biopsy of the liver lesion produced bloody purulent aspirate; abscess cultures yielded a highly viscous pan-susceptible K. pneumoniae. Klebsiella pneumoniae liver abscess syndrome is a newly described invasive syndrome due to a hypermucoviscous phenotype associated with serotypes K1 and K2 of Klebsiella. Although it is more commonly endemic to the Asian-Pacific region, it has been increasingly reported as an emerging global disease. We present the first case of this syndrome in a patient of middle-eastern descent. We also present pictorial evidence of the microbe’s unique viscous, muculent texture grown on agar.

Introduction
A new superbug is emerging! A hypermucoviscous variant of Klebsiella pneumoniae (hvKP) is becoming increasingly recognized due to its unique traits of hypervirulence and propensity to cause devastating complications in young and healthy patients.1 We describe the first case of K. pneumoniae liver abscess syndrome in a patient of Iraqi descent.

Case
A 53-year-old man presented with a 5-day history of fevers, chills and productive cough with thick yellow sputum. He emigrated from Iraq 4 years prior to admission. He denied any history of liver disease or diabetes. On presentation, he was ill-appearing. Chest x-ray demonstrated a left lung consolidation. Respiratory cultures and two sets of blood cultures returned positive for pan-susceptible Klebsiella pneumoniae. Laboratory results revealed elevated liver enzymes. A liver ultrasound showed a 6.4-cm complex lesion in the left hepatic lobe.

An ultrasound-guided biopsy of the liver lesion was performed; a drain was placed and produced bloody purulent aspirate. Abscess cultures yielded a highly viscous pan-susceptible K. pneumoniae. A repeat abdominal ultrasound 7 days later showed near-complete decompression of the abscess. The drain was removed, and the patient was treated with 8 weeks of IV ertapenem.

Discussion
Klebsiella pneumoniae liver abscess syndrome (KLAS) is an emerging, monomicrobial infection. Capsular serotypes K1, K2 and the hypermucoviscous phenotype associated with this syndrome make the infection uniquely virulent in otherwise healthy patients.1,2 A unique feature of hvKP is its ability to metastasize and lead to deadly infectious sequelae: endophthalmitis, meningitis, necrotizing fasciitis, pneumonia and pyogenic liver abscesses.3 hvKP demonstrates especial hypermucoviscous characteristics when grown on an agar plate. Although there have been no diagnostic tests developed, the current best test available is using an inoculation loop to demonstrate a positive 'string test'. Generating a viscous string >5 mm in length by stretching the mucoid bacterial colonies on an agar plate is considered positive and reflects the hypermucoviscous phenotype of hvKP.4 Originally reported in Taiwan, KLAS is thought to be a disease distinct of Southeast Asia.5 We present one of the only cases of this syndrome in a Middle Eastern male and the first ever described in a person of Iraqi descent. We also present pictorial evidence of the microbe’s unique viscous, muculent texture grown on agar. Figure 1a, e.g. exquisitely shows the variant’s gross thick and mucoid appearance on MacConkey agar, nearly oozing off the plate as shown. Figure 1c clearly demonstrates the positive string test on chocolate agar.
Conflict of interest: None declared.

References


