



Liver, lung, muscle, and bone: *Klebsiella pneumoniae* invasive liver abscess syndrome in a Vietnamese immigrant

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Case report

A 57-year-old homeless Vietnamese male with a history of alcohol use disorder and chronic methamphetamine use presented with generalized weakness and bilateral hip pain over the past month. The patient had immigrated to the United States over 35 years prior to presentation. Chest computed tomography revealed multiple small nodular pulmonary densities and cavitary lesions, along with numerous ill-defined hepatic masses, initially suspicious for metastatic cancer (Figs. 1 and 2). Computed tomography of the abdomen however revealed bilateral psoas abscesses, an additional sub-hepatic abscess (Fig. 3), along with a L2-L3 ventral epidural abscess with underlying osteomyelitis, confirmed via lumbar MRI (Fig. 4). Finalized blood and urine cultures resulted in *Klebsiella pneumoniae*. Intravenous piperacillin-tazobactam was initiated, along with debridement and resection of the osteomyelitic bone. Multiple attempts to drain the psoas, hepatic and subhepatic abscesses were made via interventional radiology; cultures obtained from all sites grew *K. pneumoniae*. This patient's widespread seeding of *K. pneumoniae* bacteremia across multiple organs, including the formation of liver abscesses was characteristic of *K. pneumoniae* invasive liver abscess syndrome. In addition to specific virulence factors that result in hypermucoviscous strains of *K. pneumoniae*, host-derived genetic factors may predispose Asian patients to acquire this syndrome, even after emigrating outside of Asia [1]. The time to disease presentation in Asian immigrants living in the United States ranges from less than a year, to over 15 years from expatriation [2]. CNS manifestations can also include endophthalmitis, brain abscess and purulent meningitis [3]. Vigilance for this devastating complication should be maintained particularly amongst Asian-born patients.

Funding

We have no source of funding for our case report.

Ethical approval

Ethics committee approved.

Consent

Written informed consent was obtained from the patient prior to submitting this report for publication.

Disclosures

The authors have nothing to disclose.

CRediT authorship contribution statement

Clark Morihara provided background research information and writing of the report. Weiming Du provided writing of the report. Kevin Benavente provided background research information, writing of the report, oversaw design of the report, and editing of the final product. Royce Shimamoto provided senior leadership and consultation, along with review of the finalized product.

Declaration of Competing Interest

All authors involved in the writing of this report have no conflicts of interest to report.

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<https://doi.org/10.1016/j.idcr.2023.e01893>

Received 30 August 2023; Received in revised form 6 September 2023; Accepted 6 September 2023

Available online 7 September 2023

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Fig. 1. CT chest axial view demonstrating multiple cavitary lesions.



Fig. 2. CT abdomen axial view demonstrating numerous hepatic abscesses up to 6.2 mm × 4.9 mm in the posterior lobe.

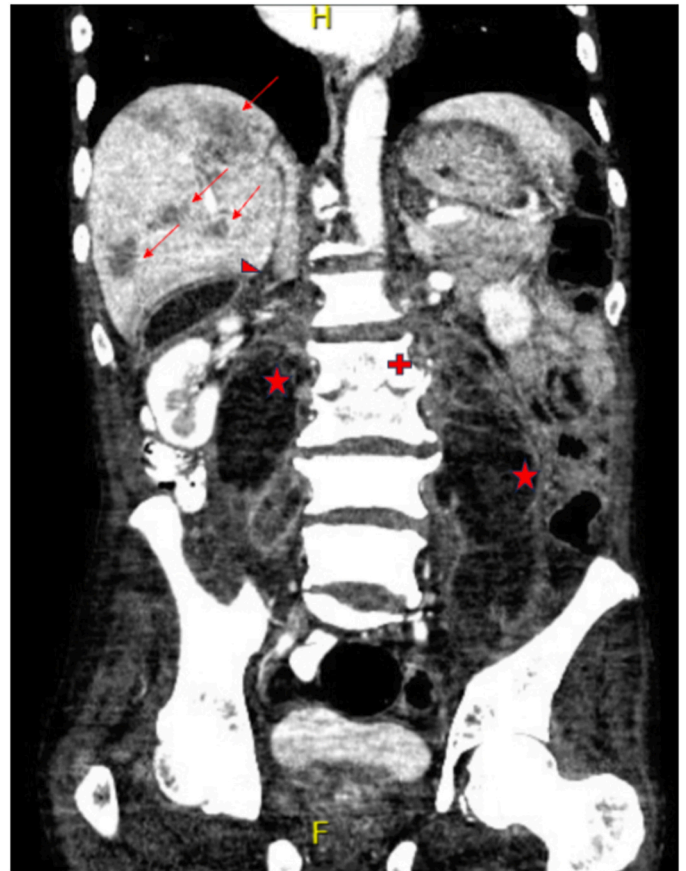


Fig. 3. CT abdomen coronal view demonstrating numerous hepatic abscesses (arrows) in addition to a 43 mm × 78 mm subhepatic fluid collection (arrowhead), bilateral psoas abscesses measuring up to 57 mm × 50 mm x 157 mm on the left (star), and L2-L3 disc space erosion and destruction consistent with discitis and osteomyelitis (cross).



Fig. 4. T2-enhanced MRI of the lumbar spine sagittal view demonstrating 6 mm × 14 mm x 14 mm ventral epidural abscess (arrowhead) with enhancement of the L2 and L3 vertebral bodies diffusely, consistent with osteomyelitis (arrow).

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