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Images in Clinical Medicine

Invasive *Klebsiella pneumoniae* liver abscess syndrome

Chung Hsien Liu, Ming-Jen Tsai\*

Department of Emergency Medicine, Ditmanson Medical Foundation Chiayi Christian Hospital, Chiayi, Taiwan

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A 39-year-old Taiwanese man with no underlying systemic disease presented with malaise, chills, and decreased vision in the right eye for 3 days. On examination, he was afebrile but tachycardic. Laboratory tests revealed leukocytosis, hyperglycemia (glucose 806 mg/dL), and abnormal levels of liver enzymes (aspartate aminotransferase 275 U/L; alanine aminotransferase

216 U/L). A standing chest radiograph showed an air–fluid level in the right hepatic area (Fig. 1). Subsequent abdominal computed tomography (CT) revealed a gas-forming liver abscess (Fig. 2). Fundus examination showed vitreous haze in the right eye (Fig. 3). *Klebsiella pneumoniae* was cultured from blood, sputum, and vitreous samples. Invasive *K. pneumoniae* liver abscess syndrome was diagnosed based on these findings. The patient was advised strict diabetic control, and received systemic antibiotics treatment, repeated intravitreal antibiotics injections, and ultimately hepatic segmentectomy due to failure of CT-guided abscess drainage. He was discharged after 1 month of hospitalization.

“Invasive *K. pneumoniae* liver abscess syndrome” is defined clinically by *K. pneumoniae* liver abscess with extrahepatic complications. The central nervous system, lungs, and eye are the most commonly involved extrahepatic organs [1]. Hypermucoviscous strains of *K. pneumoniae*, including K1 or K2 serotypes, are the pathogens [1]. It commonly affects patients of Asian ethnicity or



Fig. 1. Standing chest radiograph reveals left lower lung infiltration and abnormal gas retention in the right hepatic area with an air–fluid level.

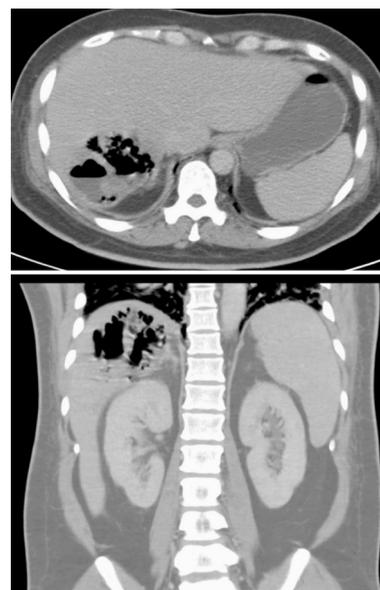


Fig. 2. Abdominal computed tomography shows a gas-forming liver abscess in the right hepatic lobe.

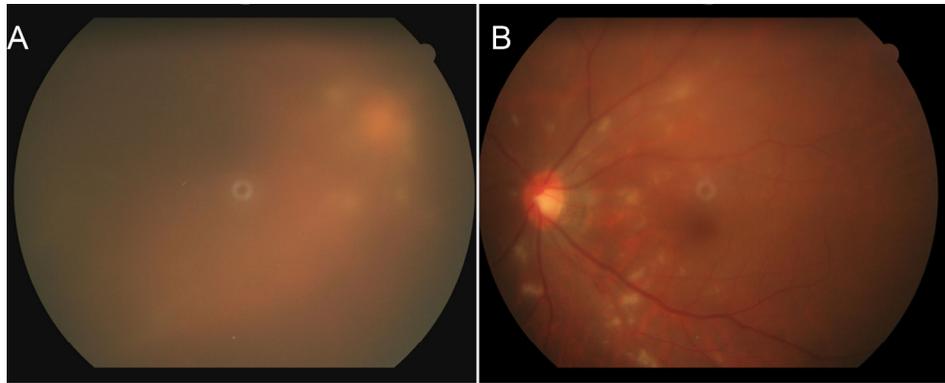
Conflicts of interest: None.

\* Corresponding author. Department of Emergency Medicine, Ditmanson Medical Foundation Chia-Yi Christian Hospital, 539, Zhongxiao Road, East District, Chiayi, Taiwan. Tel: 886 5 2765041x1984; fax: 886 5 2774511.

E-mail address: [tshi33@gmail.com](mailto:tshi33@gmail.com) (M.-J. Tsai).

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**Fig. 3.** Fundus examination shows notable vitreous haze in (A) the right eye compared with (B) the left eye.

Asian descent with diabetes and is the main cause of liver abscess in Hong Kong, Singapore, South Korea, and Taiwan. High fecal carriage of virulent *K. pneumoniae* strains in Asians may explain the high prevalence of this syndrome in this population [1]. However, this hypervirulent strain of *K. pneumoniae* has been spreading globally [1–5]. Diabetes mellitus is a risk factor for this syndrome and is associated with poor visual outcome in patients with endophthalmitis. Strict glycemic control might prevent the development of metastatic complications [1,2]. However, this invasive syndrome may also be the first presentation in patients with newly diagnosed diabetes. Appropriate interpretation of subtle findings on plain radiography may help in the early diagnosis of this disease.

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