

Emphysematous liver abscess with *Edwardsiella tarda* infection

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ABSTRACT

This report presents the case of a 51-year-old woman on an immunosuppressant drug and steroids, who presented with general fatigue and was admitted to the intensive care unit. Her serum procalcitonin, lactate, aspartate aminotransferase, and alanine aminotransferase levels and white blood cell counts were elevated. Computed tomography revealed gas formation in her liver, and her culture results revealed *Edwardsiella tarda* and *Escherichia coli* infections. She underwent percutaneous transhepatic abscess drainage in addition to antimicrobial administration. She was discharged after 40 days. Cases of emphysematous liver abscess with *Edwardsiella tarda* infections are rarely reported in the literature and may present in patients with poorly controlled type 2 diabetes. The fatality rate associated with the condition is markedly high.

A 51-year-old woman with systemic lupus erythematosus, anti-phospholipid syndrome, diabetes mellitus, and cholelithiasis, who was taking oral prednisolone, hydroxychloroquine, and tacrolimus, presented to our emergency department with a 2-day history of general fatigue. Her vitals were as follows: blood pressure, 127/116 mmHg; heart rate, 168 beats/min; respiratory rate, 40/min; and 91 % percutaneous oxygen saturation in ambient air. Physical examination did not reveal any tenderness. She had elevated levels of serum procalcitonin (22.38 ng/mL), lactate (13.9 mmol/L), aspartate aminotransferase (107 U/L), and alanine aminotransferase (96 U/L). Computed tomography revealed gas formation in a large area of the left hepatic lobe, consistent with emphysematous liver abscess (Fig. 1). Her blood pressure dropped, and meropenem, vasopressors, and hydrocortisone were administered. She was admitted to the intensive care unit and underwent percutaneous transhepatic abscess drainage. Blood and abscess cultures revealed *Edwardsiella tarda* and *Escherichia coli* infections. Upon assessing for antimicrobial susceptibility, meropenem was de-escalated to ampicillin/sulbactam on day 4. Her condition improved, and she was transferred from the intensive care unit to the general ward after 6 days. She was discharged 40 days after admission.

Facultative anaerobic bacteria, including *Edwardsiella tarda* and *Escherichia coli*, can produce gas under hyperglycemic conditions such as diabetes. *Edwardsiella tarda* was isolated in a mixed culture with other

enterobacteria like *Escherichia coli* [1]. In some cases, *Edwardsiella tarda* shows good antimicrobial susceptibility [2]; however, it is highly lethal in non-intestinal infections [3], especially in immunocompromised hosts, such as patients with malignancies and diabetes and in patients taking immunosuppressive drugs for autoimmune diseases. *Edwardsiella tarda*-related septicemia mortality is high, and the mortality rate of emphysematous liver abscess is higher than that of non-emphysematous abscess [4]. Nonetheless, clinicians should be aware regarding emphysematous liver abscesses with *Edwardsiella tarda* infections as they are relatively rare, but present serious urgencies.

Ethical approval

Not applicable.

Consent

Written informed consent for publication was obtained from the patient.

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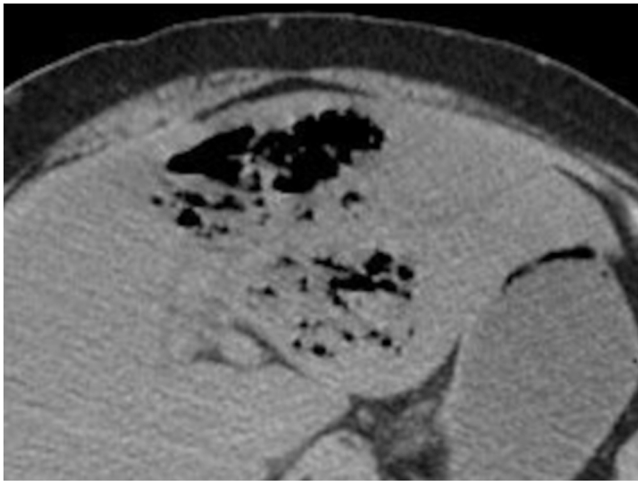


Fig. 1. Abdominal computed tomography showing a gas forming lesion in the left hepatic lobe, a finding consistent with emphysematous liver abscess.

agencies in the public, commercial, or not-for-profit sectors.

CRedit authorship contribution statement

Ryutaro Tominaga: Conceptualization, Writing – original draft.

Masahiro Kashiura: Writing – review & editing, Supervision. **Hirosato Hatano:** Writing – review & editing, Supervision. **Takashi Moriya:** Writing – review & editing, Supervision, Project administration.

Declaration of Competing Interest

The authors declare that they have no conflict of interest.

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