



Correspondence

Clostridium tetani bacteremia in a patient with cirrhosis following transarterial chemoembolization treatment for hepatocellular carcinoma



KEYWORDS

Bacteremia;
Clostridium tetani

Dear Editor,

In contrast to the growing burden of *Clostridium difficile* infections in Taiwan,^{1,2} *Clostridium tetani* has become a rare disease due to routine immunization. To date, only one case of *C. tetani* bacteremia has been reported in the literature.³ Herein, we report a rare presentation of *C. tetani* bacteremia following transarterial embolization (TAE) in a patient with hepatocellular carcinoma (HCC).

A 73-year-old man initially presented with fever, chills, vomiting and general weakness for one day. He had a history of hepatitis C virus-related liver cirrhosis and HCC. Four days prior, he had been admitted to receive a TAE for the treatment of HCC. After taking blood cultures, empirical antibiotic treatment with 1 g intravenous ceftazidime every eight hours was administered for two days. He also received treatment with oral levofloxacin. However, the clinical condition did not improve, and four days later, two sets of blood cultures showed gram-positive bacilli, which were identified as *C. tetani* by matrix-assisted laser desorption ionization time of flight (MALDI-TOF) mass spectrometry (Bruker Daltonics, Bremen, Germany). Further molecular analyses using 16S rRNA gene sequencing confirmed the pathogen to be *C. tetani*. The sequences obtained were compared with the GenBank database using the BLASTN algorithm (<http://www.ncbi.nlm.nih.gov/blast>) (GenBank accession number DQ978212.1, identity,

100%). An agar dilution test was used to test antibiotic susceptibility, which showed that the isolate was susceptible to metronidazole, clindamycin, and penicillin-G. Based on this test, antibiotic treatment was shifted to metronidazole. Two additional sets of blood cultures were taken, which were negative. Finally, his general condition gradually improved during the follow-up at the outpatient clinic.

The present report demonstrated an unusual presentation of *C. tetani* infection in a patient with cirrhosis following TAE treatment for hepatocellular carcinoma. This patient did not report a history of recent trauma and did not present with wounds during the physical examinations. *C. tetani* bacteremia developed after the TAE procedure. After excluding other possible causes of bacteremia, this bacterial infection was attributed to the TAE treatment for hepatocellular carcinoma. Several studies have reported a strong association between TAE and bacterial infections.^{4,5} In a prospective study of 176 patients receiving TAE, two had asymptomatic bacteremia, and seven had symptomatic bacterial infections, including three cases of sepsis, two cases of liver abscess, and two cases of biloma.⁵ In summary, the present report and previous studies^{2–4} suggest that bacterial infection can develop followed TAE. Therefore, clinicians should be aware of this possible complication – bacterial infection after TAE.

To the best of our knowledge, only one case of *C. tetani* bacteremia, which may have been secondary to a ventral hernia, has been reported in an immunocompetent patient.³ In contrast to this previous report, the present case of *C. tetani* bacteremia in an immunocompromised patient was attributed to TAE. Neither patient had symptoms or signs of tetanus during the follow-up. Their outcomes were favorable, and they responded well to oral metronidazole.

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In conclusion, we describe the first case of TAE-associated *C. tetani* bacteremia in a patient with cirrhosis. He did not have signs or symptoms of tetanus, and his clinical condition responded well to metronidazole.

Conflict of interests

All authors report no conflicts of interest relevant to this article.

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Chih-Cheng Lai

Department of Intensive Care Medicine, Chi Mei Medical Center, Liouying, Tainan, Taiwan

Chi-Chung Chen

Department of Medical Research, Chi Mei Medical Center; Tainan, Taiwan

Hui-Jine Hsu

Department of Clinical Pathology, Chi Mei Medical Center, Tainan City, Taiwan

Yin-Ching Chuang

Department of Medical Research; Chi Mei Medical Center; Tainan, Taiwan

Department of Internal Medicine; Chi Mei Medical Center, Liouying, Tainan, Taiwan

Hung-Jen Tang*

Department of Health and Nutrition, Chia-Nan University of Pharmacy and Science, Tainan, Taiwan

Department of Medicine, Chi Mei Medical Center, Tainan, Taiwan

*Corresponding author. Fax: +886 6 2832057.

E-mail address: 8409d1@gmail.com

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