



Case report

Edwardsiella tarda bacteremia with metastatic gastric cancer

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ABSTRACT

Edwardsiella tarda (*E. tarda*) is a rare human pathogen; however, the overall mortality of bacteremia is reported to be up to 50%. Here, we describe a case of cholangitis with *E. tarda* bacteremia who had a pancreatoduodenectomy for a locally advanced gastric cancer. He was successfully treated using a cefmetazole, a second generation cephalosporin for 14 days. To the best of our knowledge, this is the first case report about *E. tarda* bacteremia after biliary reconstruction.

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Introduction

Edwardsiella tarda (*E. tarda*) is an unusual human pathogen that can cause gastroenteritis, soft tissue infection, myonecrosis, bacteremia, cholecystitis, liver abscess, osteomyelitis, and tuboovarian abscess [1–4]. The most frequent manifestation is gastroenteritis and the least frequent is extra-intestinal infection. Immunocompromised patients are more vulnerable to infection and their mortality rate is reported to be about 50% when associated with bacteremia [1,5]. This article describes a case of a metastatic gastric cancer patient infected with *E. tarda* bacteremia who was successfully treated with antimicrobials.

Case presentation

A 78 year old man came to our hospital complaining of a high grade fever and a shaking chill. He has undergone a pancreatoduodenectomy for a locally advanced gastric cancer two years before, and a liver metastasis was found three months after surgery. His body temperature was 39.1 °C and his abdomen was not painful. The patient was diagnosed with retrograde cholangitis on the basis of his recurrent episodes of cholangitis after surgery and having liver function enzymes elevated beyond normal range. We began antimicrobial therapy with cefmetazole. *E. tarda* was

identified from the blood culture as a causative agent and it was discovered that he had eaten raw seafood two days before his admission day (Chart 1). After 14 days of antimicrobial therapy he was discharged without any complications.

Discussion

E. tarda is a nonfermenting gram-negative bacilli which is identified apart from *Salmonella* species for producing hydrogen sulfide and indole; and also fermenting only glucose and maltose. It is a member of *Enterobacteriaceae*, but rarely colonizes in the human gastrointestinal tract, reported to be found only in 26 of 353,600 Japanese individuals [6]. They are commonly isolated from fresh water environments and habituating animals such as fish and reptiles. Contact with these animals and consumption of contaminated food, e.g., sushi, raw fish, and raw meat, are considered as risk factors of *E. tarda* infection [4,5,7,8]. Hirai et al. showed that 45.5% of cases of bacteremia have been reported in Japan, where many brackish water areas and rivers are found and much raw seafood is eaten. They also studied the seasonal distribution of all patients infected with *E. tarda*; 77.2% of bacteremia occurred between July and November [5]. Other well established risk factors of the host are hepatobiliary diseases, malignancy, and diabetes mellitus [9].

Our patient had a clinical history of developing a liver metastasis of the gastric cancer, and an episode of having eaten sushi in July. In addition, he had undergone a pancreatoduodenectomy and biliary reconstruction which may have allowed the bacteria to more easily enter bloodstream from the intestines.

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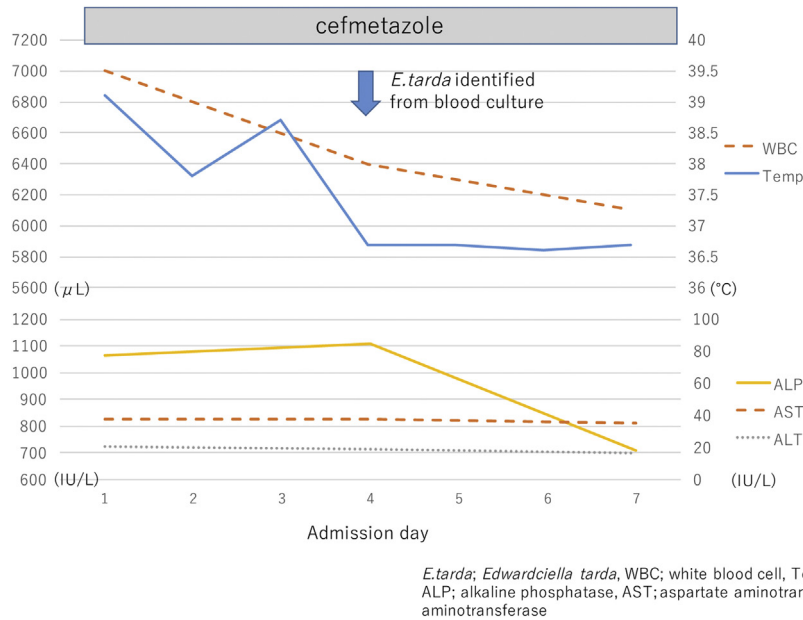


Chart 1. Note that this is two separate graphs, with the hospital day shown on the horizontal axis. The upper part shows temperature in the straight line and white blood cell count in the interrupted line. The lower half of this figure shows alkaline phosphatase in the straight line, aspartate aminotransferase in the interrupted line and alanine aminotransferase in the dashed line. Along the top, the antibiotic therapy that was given through the hospital course. As shown here, his body temperature and white blood cell count was normalized on admission day 4 when a Gram negative rod was identified from blood culture. Antimicrobial therapy with cefmetazole was thought successful and continued for 14 days.

Once bacteremia has occurred, the mortality ranges from 40 to 50%, [1,5,9] regardless of its sensitivity to antimicrobials. In the literature, penicillins, cephalosporins and carbapenems are often utilized. Our patient had a recurrent episode of retrograde cholangitis caused by *Escherichia coli* with extended spectrum beta lactamase. Based on the evidence that cephamycin is effective against extended spectrum beta lactamase producing *Enterobacteriaceae* [10], we began the antimicrobial treatment with cefmetazole and were successful.

Conclusion

A liver metastatic gastric cancer patient with *E. tarda* bacteremia was treated successfully with cefmetazole, a second generation cephalosporin. To the best of our knowledge, this is the first case report about *E. tarda* bacteremia after pancreatoduodenectomy.

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