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LETTER TO THE EDITOR

Urinary tract infection due to NonO1 *Vibrio cholerae*

To the Editor,

In Southern Taiwan, the average incidence of *Vibrio* bacteremia is 38 cases per 1,000,000 inhabitants.[1] Among *Vibrio* species, *Vibrio cholerae* is a common pathogen. However, urinary tract infection caused by *V. cholerae* has only rarely been described.[2] Here we present an unusual type of *V. cholerae* infection — genitourinary tract infection in an immunocompromised child.

A 3-year-old girl presented with fever, lower abdominal pain, and frequency for 1 day. She had a history of neuroblastoma Stage 4 and just received her fourth course of chemotherapy with cyclophosphamide, doxorubicin, and vincristine 10 days earlier. She denied a history of participating in water activities such as boating, fishing, and swimming, or any exposure to a marine environment or animals during the 3 months prior to the onset of symptoms. On admission, her body temperature was 38.6°C, heart rate was 152 beats/min, respiratory rate was 26 breaths/min, and her blood pressure was 164/110 mmHg. Physical examinations were unremarkable except mild suprapubic tenderness without rebounding tenderness. Laboratory examinations revealed the following: white blood cell (WBC) count, 100/mm^3 (23% neutrophils); creatinine, 0.4 mg/dL; and C-reactive protein, 26.3 mg/L (normal reference range $<$ 6 mg/L). Urine analysis showed WBC of 8 per high power field (HPF), positive leukocyte esterase, and bacteruria. Abdominal sonography did not show evidence of hydronephrosis. The preliminary diagnosis was febrile neutropenia with urinary tract infection, and therefore, empirical use of cefotaxime was prescribed. Three days later, bacterial culture of the urine specimen yielded *V. cholerae*. The isolate was identified as *V. cholerae* by two commercial systems, including the API 20E system (Identity, 99%; bioMerieux, Vitek, Inc., Hazelwood, MO, USA) and the Phoenix system (confidence value, 99%; NMIC/ID-72, Becton Dickinson, Sparks, MD, USA). Moreover, the isolate was identified as *V. cholerae* nonserogroup O1 based on a negative reaction by slide agglutination with polyvalent O1 (Difco, Becton Dickinson, Sparks, MD, USA). Antibiotic susceptible test of the isolate showed it was susceptible to ampicillin, chloramphenicol, and sulfamethoxazle/trimethoprim. The antibiotic was shifted to ampicillin thereafter. Her fever gradually subsided, and she was discharged uneventfully 10 days later.

Most of the infections with *Vibrio* spp. developed in patients with immunocompromised status, such as hepatic diseases, diabetes mellitus, and adrenal insufficiency.[3—5] In the present work, it is the first time to show an immunocompromised child who presented with febrile neutropenia and urinary tract infection caused by *V. cholerae*. Although *V. cholerae* may be abundant in the coastal areas of southern Taiwan,[1,5] the portal of entry of the organism in our patient could not be identified because of the lack of any recent contact with marine animals or environmental conditions suitable for propagation of the organism. The possible explanation could be that the organism might gain access to the genitourinary tract by hematogenous spread after the ingestion of undercooked seafood or via a contaminated trivial cutaneous lesion.

In conclusion, our case expands the spectrum of infection caused by *V. cholerae* and raises the possibility of *V. cholerae* as one of the causes of urinary tract infection.

Conflicts of interest

All authors have no conflicts of interest to declare.

References

1. Wu CJ, Cheng PL, Tang HJ, Tseng FC, Shih HI, Hung YP, et al. Incidence of *Aeromonas* bacteremia in Southern Taiwan: *Vibrio* and *Salmonella* bacteremia as comparators. *J Microbiol Immunol Infect* 2014;**47**:145—8.
2. Sangaré L, Sanou I, Somé D, Yaméogo S, Maïga-Tinto H, Traoré Y, et al. Urinary infection due to non01, non0139 *Vibrio cholerae*. *Med Trop (Mars)* 2006;**66**:513—4.
3. Syue LS, Chen PL, Wu CJ, Lee NY, Lee CC, Li CW, et al. Monomicrobial *Aeromonas* and *Vibrio* bacteremia in cirrhotic

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adults in southern Taiwan: similarities and differences. *J Microbiol Immunol Infect* 2014 Jul 25. http://dx.doi.org/10.1016/j.jmii.2014.05.006.
4. Lai CC, Liu WL, Chiu YH, Chao CM, Gau SJ, Hsueh PR. Liver abscess due to nonO1 *Vibrio cholerae* in a cirrhotic patient with hepatocellular carcinoma. *J Infect* 2011;**62**:235—7.
5. Ku WC, Chuang YC, Huang GC, Hsu SY. Infections due to nonO1 *Vibrio cholerae* in southern Taiwan: predominance in cirrhotic patients. *Clin Infect Dis* 1998;**27**:774—80.

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