**Vibrio vulnificus** peritonitis after eating raw sea fish in a patient undergoing continuous ambulatory peritoneal dialysis (CAPD)

Sir,

*Vibrio vulnificus* is an opportunistic pathogen that can cause serious, life-threatening infection in susceptible persons. Patients with chronic liver disease, alcoholism, immunodeficiencies, haemochromatosis or other iron overload states have increased susceptibility to infection by *Vibrio species* [1]. End-stage renal disease (ESRD) has been identified as a possible risk factor [2]. Only one case of *V. vulnificus* peritonitis developed after handling (but not ingestion) of sea fish, in a patient receiving continuous ambulatory peritoneal dialysis (CAPD) has been previously reported [3]. Here, we describe an episode of peritonitis in a CAPD patient caused by *V. vulnificus* after eating raw sea fish.

A 63-year-old man receiving CAPD for 5 years was admitted to our hospital with abdominal pain and cloudy peritoneal fluid. The underlying cause of his ESRD was diabetes mellitus and he had no history of peritonitis. He was a non-drinker and had no known history of liver disease. He was treated with erythropoietin, but had no iron therapy. Three days prior to presentation, he ate raw butterfish harvested from the Pacific coast; abdominal pain and vomiting started the next day. There was no history of trauma or exposure to seawater. On admission, the body temperature was 36.4°C, heart rate was 80 bpm, respiration rate was 20/min and blood pressure was 130/80 mmHg. There was tenderness in the lower abdomen, and the exit site of the peritoneal catheter was clean. The peripheral WBC count was 8130/mm³ and polymorphonuclear leukocytes (PMN) was 92.8%. The haemoglobin level was 6.2 g/dl, serum iron measurement showed the following values: iron 19 µg/dl, transferrin saturation 6.9%, ferritin 235.54 µg/l. The liver function test results were normal and viral markers for hepatitis B and C were negative. The peritoneal effluent liver function test results were normal and viral markers for 19 serum iron measurement showed the following values: iron (PMN) was 92.8%. The haemoglobin level was 6.2 g/dl, transferrin saturation 6.9%, ferritin 235.54 µg/l. The liver function test results were normal and viral markers for hepatitis B and C were negative. The peritoneal effluent contained >1000 WBCs/mm³, of which 91% were PMNs and 9% were lymphocytes. The patient was treated empirically with intraperitoneal cefazolin 1000 mg and tobramycin 40 mg. Soon after the start of empirical antibiotic therapy, the abdominal pain improved and the peritoneal effluent gradually cleared. Peritoneal effluent culture showed *V. vulnificus* sensitive to ampicillin, ceftriaxone, ciprofloxacin, piperacillin and imipenem, intermediate sensitivity to gentamicin, tobramycin and resistant to amikacin. Blood and stool culture showed no bacterial growth. After receiving the culture result, intraperitoneal cefazolin was discontinued, and oral doxycycline was added to intraperitoneal tobramycin regimen. Antibiotic therapy was continued for 2 weeks; the patient recovered completely without complication.

*V. vulnificus* infection has been linked to three distinct syndromes: (i) primary septicaemia, (ii) wound infection and (iii) gastrointestinal illness [1]. Peritonitis in a patient receiving CAPD was previously reported and suggested that CAPD peritonitis may be another important clinical manifestation of *Vibrio* infection in patients undergoing CAPD [3–5].

In conclusion, patients with ESRD undergoing dialysis have an increased risk of infection with *V. vulnificus*. Furthermore patients receiving CAPD may present with CAPD peritonitis in addition to the previous clinical manifestations. These patients should be counselled to avoid raw seafood.

Conflict of interest statement. None declared.

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Caspofungin in kidney transplant recipients with refractory invasive candidiasis

Sir,

Fungal infections have been reported frequently in renal transplant recipients [1,2], and they were associated with greatly decreased patient survival [1,3,4].

The treatment of mucosal candidiasis and candidaemia has evolved in previous years; because of its infusion-related toxicity and nephrotoxicity, amphotericin B has been gradually replaced by fluconazole, which has less toxicity and a broader spectrum of activity [5]. However, invasive candidiasis such as oropharyngeal, oesophageal and urogenital candidiasis, are relatively less susceptible to fluconazole [5].

Caspofungin is the first of three new echinocandin antifungal agents to become available for the treatment of invasive mycoses and systemic candidiasis in patients refractory to or intolerant to other antifungal therapy [5,6], and it is more effective than amphotericin B in the treatment of refractory oropharyngeal and oesophageal candidiasis [7].

This study investigates the incidence of invasive candidiasis in a population of 245 kidney transplant recipients, performed in a 3-year period, and evaluates the use of caspofungin for the treatment of azole-refractory oesophageal and urinary candidiasis.

Twenty-two patients (8.9%) presented with an oesophageal candidiasis, while seven (2.8%) presented with a