

Letters to the Editor

Peritonitis by *Shewanella putrefaciens*: Apropos of a case[☆]

Peritonitis por *Shewanella putrefaciens*: a propósito de un caso

Dear Editor,

Peritonitis is an inflammation of the peritoneal membrane caused by infection, generally bacterial. It remains the most significant complication deriving from the dialysis technique itself.

Shewanella putrefaciens is an oxidase-positive, facultative anaerobic, non-fermenting, Gram-negative bacillus found mainly in marine environments.

It is an uncommon pathogen in human beings, mainly causing skin and soft-tissue infection.¹⁻⁴

We report a case of *S. putrefaciens* peritonitis in a 40-year-old woman with Takayasu arteritis and stage 5 chronic kidney disease in automated peritoneal dialysis (PD) since February 2009. In June 2014, she visited the emergency department owing to fever and abdominal pain for the last 12 h. Mesenteric ischaemia was ruled out by means of a CT scan. Subsequently, the peritoneal fluid was drained and peritoneal fluid with a cloudy, yellowish appearance was observed. A physical examination revealed diffuse abdominal pain, and an inspection of the catheter outlet revealed no signs of local infection.

A peritoneal fluid count showed 20,160 cells with 81% polymorphonuclear cells, and samples were collected for culture.

Blood clinical chemistry showed neutrophilia, normochromic normocytic anaemia and high levels of acute-phase reactants and procalcitonin. She was admitted given her compromised general condition and persistent fever.

Antibiotic therapy was started with intraperitoneal vancomycin and ceftazidime, according to our hospital's protocol.

Multisensitive *S. putrefaciens* and *Klebsiella oxytoca* were isolated in a peritoneal fluid culture. Blood cultures were negative.

After identification of the responsible pathogen, treatment with vancomycin was suspended, treatment with intraperitoneal ceftazidime was maintained and oral ciprofloxacin and fluconazole were added.

The patient progressed satisfactorily; she became afebrile and asymptomatic and her laboratory parameters returned to normal. She was discharged and remained in PD.

The *Shewanella* genus is found throughout numerous geographic areas with moderate climates, mainly in humid environments (saltwater, freshwater and wastewater). However, it is also present in natural energy reserves (petroleum and gas), dairy products, meat and human samples.

It tends to isolate itself by becoming a part of a mixed bacterial flora; therefore, its clinical significance may be obscured by the other microorganisms. It causes various types of syndromes, and is found in patients with infectious endocarditis, bacteraemia, lower limb abscesses, soft-tissue or intra-abdominal infections in patients in PD, pneumonia associated with the use of mechanical ventilation, eye infections and brain abscesses.⁵

The *S. putrefaciens* pathogen tends to be sensitive to aminoglycosides, carbapenems, erythromycin and quinolones.

The pathogenesis and the site of entry of the infection remain poorly established. Proximity to seawater or tap water renders these media potential sources of infection.

There are 6 published cases of *S. putrefaciens* peritonitis in patients in PD – Taiwan, Australia, Israel and the United States⁵ – with a variety of clinical manifestations, concomitant bacteraemia and, sometimes, a fatal outcome, as in the case of peritonitis with necrotising fasciitis in Korea, the case of peritonitis with spleen abscess from the Australian group, and even other cases with fulminant periorbital – facial cellulitis, biliary tract infection, empyema or perianal abscess. The majority of these patients had factors such as malignant neoplasm, hepatobiliary disease, neutropenia, etc. Renal failure may also represent a risk factor.

The case presented seems to be the first documented case in Spain. After an exhaustive medical history we were unable to identify a clear source of exposure. Our only clue was that the patient had a high level of exposure to seawater.

Whatever the mechanism, it seems wise to warn patients in PD of the importance of properly covering the catheter outlet and any potential site of infection such as ulcers. In addition, although this type of peritonitis is uncommon, a potentially serious cause of peritonitis should be considered

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and a skin lesion or portal of entry should be heeded as a potential warning, especially in patients with a history of exposure to seawater.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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Paracoccus yeei peritonitis in peritoneal dialysis[☆]

Peritonitis causada por *Paracoccus yeei* en diálisis peritoneal

Dear Editor,

Peritonitis is defined as peritoneal inflammation caused by microorganisms, with the presence of cloudy peritoneal fluid, a leukocyte count of more than 100 per microlitre and leukocytes accounting for more than 50% of polymorphonuclear cells. It remains the most significant complication deriving from the dialysis technique itself. It is generally caused by Gram-positive skin bacteria such as *Staphylococcus epidermidis* and *Staphylococcus aureus*, or by enterobacteria and fungi. An intact peritoneum and the defence mechanisms of the mesothelium are probably the most significant barriers that help prevent the development of peritonitis. Prevention is the fundamental weapon, and the routes by which microorganisms enter the peritoneal cavity should be acted on: peritoneal access, connection systems, dialysis solutions and examinations that help enable infection.

Paracoccus yeei is a non-fermenting bacterium in the environment that is present in soil. It is the bacterium that caused the episode of peritonitis in the case that we are reporting.

Our case is a 46-year-old woman diagnosed with adult polycystic kidney disease, on a regimen of automated peritoneal dialysis for the last 3 years, with no prior episodes of peritonitis. The patient lived with a small dog she routinely take out for walks.

She visited the dialysis unit because she noticed cloudy fluid in the peritoneal effluent drainage. There was no fever or nausea, and her bowel movements were normal. She had slight abdominal discomfort, and an examination showed signs of peritoneal irritation. A peritoneal fluid cell count was performed and found 790 leukocytes/mcl, with 75% polymorphonuclear cells. Samples were sent for the performance of a Gram stain, and cultures in blood culture and conventional media. A diagnosis of peritonitis was confirmed and treatment was started according to our site's protocol, with intraperitoneal vancomycin and ceftazidime. Empirical treatment of peritonitis was to be done with a combination of broad spectrum antibiotics targeting Gram-positive and Gram-negative microorganisms. The patient continued on an outpatient regimen, since her general condition was good, with daily self-administration of intraperitoneal ceftazidime and visits to the hospital to undergo follow-up cell counts. At 48 h she received a positive culture in a blood culture medium for *Paracoccus yeei*. No bacteria were seen on a Gram stain, and a conventional culture was negative. Peritonitis results in morbidity and mortality, and is a cause of hospitalization in the most impaired patients. However, it can generally be treated on an outpatient basis, as in our case.

Paracoccus yeei was formerly classified as a eugonic oxidizer group 2 (EO-2) strain. In 2003, new molecular techniques iden-

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