

**Peritonitis Caused by *Veillonella* Species  
and *Eggerthella lenta* in  
Peritoneal Dialysis**

*Editor:*

We report the case of a 74-year-old white woman on continuous cycling peritoneal dialysis (PD) who had an episode of peritonitis caused by unusual organisms.

This patient had longstanding type 2 diabetes, coronary artery disease, congestive heart failure, atherosclerotic peripheral artery disease, and chronic ischemic colitis. She had diabetic nephropathy for which renal replacement therapy was initiated in November 2005. She initially received PD but was transferred to hemodialysis after 1 month because of non-resolving *Enterococcus faecalis* peritonitis. After 7 years, a transfer

back to PD was necessary because of multiple vascular access failures and infections. Continuous cycling PD was successfully initiated without complications. Six months later, the patient presented to the emergency department with sudden-onset left-sided abdominal pain, confusion, and hypotension. She had no other symptoms.

Physical examination revealed a tense, nontender abdomen, with no evidence of exit-site or subcutaneous tunnel infection. The patient was transferred to the intensive care unit for vasopressor administration and was immediately started on intravenous (IV) piperacillin-tazobactam, intraperitoneal (IP) cefazolin, IP tobramycin, and oral nystatin for antifungal prophylaxis.

Initially, the dialysis effluent was cloudy, with a white blood cell (WBC) count of 38 000/mm<sup>3</sup>, with 94% neutrophils. Computed tomography imaging with contrast showed no features suggesting bowel ischemia, perforation, or herniation. Three days later, piperacillin-tazobactam was discontinued, and cefazolin was changed to IP ampicillin because of identification of ampicillin-sensitive *E. faecalis* in the effluent.

The patient slowly improved, and vasopressor support was stopped, but the WBC count in effluent remained persistently elevated. Ampicillin was changed to IP vancomycin to address potential bacterial resistance, and peritoneal catheter removal was considered, but not performed because of lack of vascular access for hemodialysis.

Six days after the patient presented, two other anaerobic organisms were identified in the initial effluent sample: *Veillonella* species and *Eggerthella lenta*, which prompted the addition of intravenous metronidazole. Because of the identification of anaerobic organisms and a rising WBC count, the patient was placed on "bowel rest," by holding PD for 2 days with intravenous antibiotic administration. That action helped to significantly lower the effluent WBC count for the first time. A few days later, PD was held for another 2 days because of a subsequent increase in the peritoneal WBC count. The WBC count fell thereafter and remained persistently undetectable.

During the admission, the patient also experienced 2 episodes of pulmonary edema because of fluid retention, both of which responded to increased PD tonicity. The patient completed a 28-day course of IP vancomycin, IP tobramycin, and oral metronidazole without a recurrence of symptoms or an increase in the effluent WBC count.

## DISCUSSION

Our case report describes a complicated episode of PD-related peritonitis attributable to *E. faecalis*,

*Veillonella* species, and *Eg. lenta*. This polymicrobial infection suggested intra-abdominal pathology, but no potential source was identified on computed tomography imaging with contrast. The patient had a slow response to antibiotics, and the peritoneal catheter would have been removed if not for the lack of patent vascular access for hemodialysis. The patient improved with temporary holding of PD, which can sometimes be highly effective for resistant peritonitis (1).

The facultative, anaerobic gram-positive coccus *E. faecalis* is frequently associated with severe PD peritonitis. Infections with *E. faecalis* are most commonly the result of intra-abdominal pathology and are frequently polymicrobial in nature (2,3). The recommended treatment is usually IP ampicillin, but cases involving ampicillin- and vancomycin-resistant strains are increasingly common (4,5).

To our knowledge, this description is the first of *Veillonella* species and *Eg. lenta* causing PD-related peritonitis. *Veillonella* is an anaerobic gram-negative coccus normally present in the human oral and gastrointestinal tracts and in the female gynecologic tract. The most frequent isolate is *V. lenta*, but infections with that micro-organism are infrequent. Thus far, cases of endocarditis (6), spondylodiscitis (7), and fatal bacteremia (8) have been described. *Veillonella* is usually sensitive to beta-lactams, clindamycin, and metronidazole (9).

*Eggerthella* (formerly *Eubacterium*) *lenta* is an anaerobic gram-positive bacillus in the Coriobacteriaceae family and is normally present in the human intestinal tract. It has been described in a variety of infections, including bacteremia (10,11), but never in peritonitis. These organisms are usually susceptible to metronidazole, clindamycin, imipenem, and meropenem, but resistance to penicillins is variable (12). In our patient, these three enteric micro-organisms are likely to have appeared in the peritoneal fluid after a bacterial translocation through the bowel wall, because no evidence of bowel perforation or external contamination could be found.

## SUMMARY

This case is the first reported of a PD-related peritonitis attributable to *Veillonella* species and *Eg. lenta*. It illustrates the importance of adequate identification and treatment of unusual organisms, and the high disease burden that peritoneal infection can produce in PD patients. It also emphasizes that bowel rest can be important in the management of enteric peritonitis that is slow to resolve.

## DISCLOSURES

The authors declare no conflicts of interest.

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