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Navigating Complexities: A Case Study on Peritoneal Dialysis Related Peritonitis in a Patient with End-Stage Kidney Disease and Clostridium Difficile Infection

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Case Study : We report a case of a 57-year-old woman, with a history of end-stage kidney disease secondary to lupus nephritis on peritoneal dialysis, Standford B thoracic and abdominal aorta dissection, presented with crampy abdominal pain, watery diarrhea and cloudy peritoneal fluid. She denied fever, bloody stool, unhygienic food consumption, contact with sick individuals or recent travel. She has history of multiple admissions due to lupus flare and infections requiring intravenous antibiotics Initial vital signs were stable, but laboratory results revealed a white blood cell count (WBC) of 14,800/µL, neutrophils at 91%, and a C Reactive Protein of 90.5 mg/L. Peritoneal fluid analysis displayed an elevated WBC count of 750/µL with 80% polymorphonuclear predominance. The Gram stain, however showed no presence of organisms. Empirical intraperitoneal cefazolin and ceftazidime were administered but failed to achieve improvement. Antibiotics were switched to intraperitoneal Vancomycin and Meropenem due to the persistent cloudy effluent and increasing WBC count. Stool cultures reported Clostridium difficile toxin and antigen. The patient was diagnosed with PD-related peritonitis with Clostridium difficile-associated diarrhea. Intraperitoneal Meropenem and Vancomycin were discontinued, and oral Vancomycin was added, resulting in a noticeable improvement within 24 hours. Effluent WBC count decreased to 210/µL the day after starting the new regimen. The patient's symptoms fully resolved and she was discharged after 10 days of oral Vancomycin. This case underscores the crucial importance of maintaining a heightened suspicion for Clostridium difficile infection, especially when faced with negative-cultured peritonitis in end-stage kidney disease patients who are immunocompromised.