***Mycobacterium mucogenicum* Peritonitis in a Continuous Ambulatory Peritoneal Dialysis Patient**

Editor:

Mycobacterium mucogenicum (formerly *Mycobacterium chelonae*-like organism) is a recently characterized, rapidly growing, atypical nontuberculous mycobacterium (NTM) that occasionally causes human infection (1). We present a patient on continuous ambulatory peritoneal dialysis (CAPD) who experienced peritonitis because of an atypical mycobacterium identified as *M. mucogenicum*.

A 52-year-old diabetic man on CAPD (2.5-L exchanges 3 – 4 times daily) for 3.5 years presented with nausea, vomiting, abdominal pain, and altered sensorium for 2 days, together with cloudy effluent. He had a history of left ventricular failure, with intermittent atrial fibrillation, and of 6 previous episodes of peritonitis (recurrent gram-negative *Escherichia coli* peritonitis, and 1 episode of *Staphylococcus aureus* peritonitis), which were successfully treated. He weighed 98 kg.

The patient's blood urea was 128 mg/dL; plasma creatinine, 10.1 mg/dL; vitamin D, 4.61 ng/mL; high-sensitivity C-reactive protein, 42.30 mg/L; total protein, 6.7 g/dL; serum albumin, 3.1 g/dL; total white blood cell count, 10 300/mm³, with 79.6% neutrophils, 3.8% monocytes, 16% lymphocytes, 0.5% eosinophils, and 0% basophils. Effluent cell count was 6300/mm³, with 98% neutrophils and 2% lymphocytes. Fluid culture and gram stain were unremarkable.

The patient was initiated on intraperitoneal antibiotics per the protocol recommended by the International Society for Peritoneal Dialysis. Fluid culture showed no fungal elements after 1 month of incubation. Culture on Lowenstein–Jensen medium produced colonies within 3 weeks. Effluent sent for nuclear amplification technique showed the presence of a mycobacterium that was later identified as *M. mucogenicum*.

The previous antimicrobials were discontinued, and the patient was initiated on rifampin 600 mg, pyrazinamide 1 g, isoniazid 300 mg, ciprofloxacin 500 mg twice daily with vitamin B₆. Vitamin D levels in this patient were very low, which we suspect may have in the past predisposed him to repeated episodes of peritonitis because of defective immunity. Thus, we also instituted vitamin D therapy. A few days after the start of the new therapy, the effluent cell count was 4200/mm³, with 97% polymorphonuclear cells and 3% lymphocytes. After 7 days, the effluent became clear. The patient continued his medication for 2.5 months, and he continues on peritoneal dialysis 6 months later with no ultrafiltration failure.

Many laboratory characteristics of *M. mucogenicum* are similar to those of *M. chelonae* (formerly *M. chelonae chelonae*), including failure to grow on medium containing 5% sodium chloride, inability to reduce nitrate, borderline or negative reaction in the iron uptake test, and utilization of citrate as a sole carbon source. The organism was therefore tentatively designated *M. chelonae*-like organism by Silcox *et al.*, after which it was finally named *M. mucogenicum* (1).

M. mucogenicum is a weakly gram-positive, acid-fast, beady bacillus that can be detected by acid-fast staining using Ziehl–Neelsen stain or, more recently, auramine rhodamine stain with fluorescent microscopy. In culture, it is characterized by growth occurring as early as 7 days after incubation in Lowenstein–Jensen medium. It produces mucoid colonies that are non-pigment-producing and urease-reducing. Hence, they are classified into the group of rapid growers.

M. mucogenicum is frequently isolated from tap water and respiratory specimens, with little clinical significance apart from posttraumatic skin infections and catheter-related sepsis. The organism has been associated mainly with nosocomial infections, including, in 1976, peritonitis from contamination of automated peritoneal dialysis machines (1), bacterial infection traced to tap water used in hemodialysis, bacteremia from the Hickman line in an immunocompromised patient (2), and bacteremia from contamination of a central venous catheter (3). Analysis of a collection of 87 clinical isolates showed that 62% had been recovered from respiratory tracts (without clinical significance); other isolates had been responsible for catheter sepsis, pneumonia, subcutaneous abscess, cellulitis, osteomyelitis, lymphadenitis, surgical wound infection, and peritonitis (4).

In conclusion, we report a culture-negative peritonitis caused by *M. mucogenicum*, which responded to combination therapy within 10 days. The infection was diagnosed with the help of polymerase chain reaction and culture techniques, permitting prompt and appropriate therapy to be instituted, preventing excessive morbidity and preserving peritoneal membrane function.

DISCLOSURES

The authors have no financial conflicts of interest to declare.

Y.N.V. Reddy¹
Y.N.V. Reddy¹
L. Balasubramaniam¹
M. Mathew¹
G. Abraham^{1,2*}

Madras Medical Mission Hospital¹
Chennai, India
Pondicherry Institute of Medical Sciences²
Pondicherry, India

*email: abraham_georgi@yahoo.com

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