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Title: Clostridioides difficile Pericardial Infection in a Patient on Colchicine: Coincidence or Contributor?

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Case:
Clostridioides difficile (CD) is commonly known to cause enteric infections as a result of antibiotic use. Extraintestinal infections caused by CD are not as well-documented. Colchicine is an anti-inflammatory medication used as a treatment for pericarditis and has been implicated in altering gut microbiota and thereby increasing the risk of CD extra-intestinal infections. We present a case of a 67-year-old man with a history of recurrent pericardial effusions taking colchicine 0.6 mg twice daily for pericarditis. His past medical history revealed a recent pericardial effusion and subsequent pericardiocentesis with fluid analysis reported as non-purulent, non-infectious, with a low-grade inflammatory process, and no malignant cells. Pericardial fluid culture results had no growth after 5 days. The patient presented to the hospital again with a large pericardial effusion and premature ventricular contractions. He appeared well with no physical limitations, no shortness of breath, or chest discomfort. On physical examination, his blood pressure was 140/92 mmHg, pulse 65 beats per minute, temperature 97.7°F, respiratory rate 17 breaths per minute, weight 94 kg, BMI 28.1 kg/m2, lungs were clear to auscultation with oxygen saturation of 98%. Current laboratory values were within normal limits, except serum creatinine of 1.26 mg/dL and white blood cell count of 11,100 cells/µl. Echocardiogram revealed a large pericardial effusion, and pericardiocentesis was performed with fluid analysis. Fluid analysis from pericardiocentesis revealed cloudy fluid, elevated polymorphonuclear leukocytes, normal lymphocytes, monocytes, and total nucleated cells, and was negative for malignancy. Pericardial fluid culture results revealed gram-positive rods. The patient was evaluated by cardiothoracic surgery and deemed an appropriate candidate for a subxiphoid pericardial window. He was discharged on ceftriaxone 2 g IV per day and oral metronidazole 500 mg 3 times a day for 14 days and scheduled for return in 2 weeks for surgery. After discharge, pericardial fluid culture results revealed CD. Upon readmission for surgery, he was started on metronidazole 500 mg IV every 8 hours and vancomycin 1000 mg IV twice daily. At this point, colchicine was discontinued and suspected of being a potential contributor to this atypical presentation involving CD infection of the pericardial fluid. Pericardial window surgery was completed without complications, lab values were within normal limits, and another pericardiocentesis revealed clear fluid with no growth in culture. The patient was discharged after 7 days of inpatient antibiotics and a pericardial drain, scheduled to follow up as an outpatient with cardiothoracic surgery. This case illustrates a rare presentation of

CD infection in the pericardial space, an area rather resistant to enteric organisms. While the mechanism remains unclear, potential contributors to this infection may include mucosal translocation or hematogenous spread of CD with colchicine facilitating the process. Colchicine has been implicated in altering gut microbiota which can impair the suppression of CD overgrowth, as well as increasing risk for extra-intestinal CD infections. This report adds to the literature on extraintestinal CD infections and underscores the importance of considering atypical pathogens in patients with pericardial infections.