

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

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## Introduction

- 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 to treat pericarditis and has been implicated in altering gut microbiota and thereby increasing the risk of CD extra-intestinal infections.

## Patient Background and History

### History of Present Illness

- 67-year-old man presented with recurrent large pericardial effusion and premature ventricular contractions.
- No acute symptoms
- X Chest pain
- X Dyspnea
- X Orthopnea
- X Fevers/ chills
- X Fatigue
- X Exertional symptoms

### Past Medical History

- Recurrent idiopathic pericardial effusions
  - ↳ Pericardiocentesis with fluid analysis (1 month before admission)
    - Non-purulent
    - Low-grade inflammatory process
    - No malignant cells
    - Culture: No growth after 5 days
  - ↳ Prescribed Colchicine
- Essential hypertension
- Hyperlipidemia
- No known drug allergies

### Medications

- Colchicine 0.6 mg BID
- Losartan 100 mg daily
- Aspirin 80 mg daily
- Rosuvastatin 5 mg daily
- Pantoprazole 40 mg daily
- Docusate 100 mg BID

## Hospital Course

### Initial Admission

- 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/m<sup>2</sup>, 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 - pericardiocentesis was performed with pericardial fluid (PF) analysis. (**Table 1**)
- The patient was evaluated by cardiothoracic surgery and deemed an appropriate candidate for a subxiphoid pericardial window.

Table 1. Pericardial Fluid Analysis

Appearance	Cloudy
Cytology	(-) Malignancy
Polymorphonuclear leukocytes	32%
Lymphocytes	22%
Monocytes	46%
Total Nucleated Cells	147 cells/uL
Protein	4.6 g/dL
Glucose	87 mg/dL
Lactate Dehydrogenase	174 U/L
Culture	Gram-positive rods

### Plan:

- Discharged on ceftriaxone 2 g IV per day and oral metronidazole 500 mg 3 times a day for 14 days.
- Scheduled for return in 2 weeks for surgery.

### Readmission for Surgery

- After discharge, PF culture results revealed Clostridioides difficile.
- Upon readmission for surgery, he was started on metronidazole 500 mg IV every 8 hours and vancomycin 1000 mg IV twice daily.
- Colchicine was discontinued and suspected of being a potential contributor to this atypical presentation.
- 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.

## Discussion & Conclusion

- 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, and colchicine.
- Colchicine has been implicated in altering gut microbiota, which can impair the suppression of CD overgrowth, increasing infection risk, including CD extra-intestinal infections. Colchicine suppresses neutrophil activity and the local inflammatory response, which could produce a distinct pericardial fluid profile compared to typical pathogens. This case adds to the literature on extraintestinal CD infections and underscores the importance of considering atypical pathogens in patients with pericardial infections.

## References

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