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Myopericarditis as a complication of nonspecific colitis

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABCDEF 1 **Haider Alkhateeb**
ABCDEF 1 **Sarmad Said**
ABCDE 1 **Chad J. Cooper**
ACD 1 **Sherif Elhanafi**
BF 1 **Mohamed Teleb**
BF 2 **Fatima Saifuddin**
ABCD 1,3 **Debabrata Mukherjee**
ABCDE 1,3 **Aamer Abbas**
ABCD 1 **Harry E. Davis II**

1 Department of Internal Medicine, Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center, El Paso, TX, U.S.A.
2 Jinnah Hospital, Karachi, Pakistan
3 Division of Cardiovascular Medicine, Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center, El Paso, TX, U.S.A.

Corresponding Author: Sarmad Said, e-mail: sarmad.said@ttuhsc.edu

Patient: Male, 31
Final Diagnosis: Myopericarditis
Symptoms: Abdominal pain • diarrhea
Medication: —
Clinical Procedure: —
Specialty: Cardiology

Objective: Unusual setting of medical care

Background: Myopericarditis is a condition involving inflammation of the pericardium and myocardium. It has been reported in conjunction with inflammatory bowel disease as well as infectious colitis caused by a cardiotropic organism. The etiology of myopericarditis includes a long list of infectious causes (especially viral), toxic causes, autoimmune disorders, and vasculitides.

Case Report: A 31-year-old previously healthy Hispanic man complained of sudden onset of watery, non-bloody diarrhea associated with mucus and crampy abdominal pain. ECG showed ST-segment elevation in the infero-lateral leads, with elevated troponin I level. Urgent cardiac catheterization revealed normal coronary arteries and the patient was diagnosed with myopericarditis. The echocardiogram results were within normal limits, with 65% ejection fraction and no evidence of wall motion abnormalities. Colonoscopy showed macroscopically congested mucosa in the descending colon, sigmoid colon, and rectum, with scattered petechiae indicative of nonspecific colitis. Microscopic examination of obtained biopsies revealed evidence of acute mucosal inflammation without ulceration, granulomas or ischemia. The patient was started on Naproxen 250 mg twice daily and chest pain started to improve gradually. The patient was discharged on Naproxen and was followed up in clinic 2 weeks after discharge, where he was found to be completely asymptomatic, with troponin level <0.015 ng/ml.

Conclusions: Myopericarditis is a challenging diagnosis that has been reported in association with colitis, either as an extraintestinal manifestation of IBD or due to infectious colitis with a cardiotropic organism.

MeSH Keywords: Myopericarditis • Colitis • Pericarditis • Chest Pain

Full-text PDF: <http://www.amjcaserep.com/download/index/idArt/890006>

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Background

Myopericarditis is a challenging clinical diagnosis that involves inflammation of the pericardium, primarily with some involvement of the myocardium [1]. Inflammation of the pericardium and myocardium usually occur simultaneously, but rarely to the same extent [2]. The etiology of myopericarditis includes a long list of infectious causes (especially viral), toxic causes, autoimmune disorders, and vasculitides [3]. This clinical entity has been well described in the literature to occur in association with colitis, either due to inflammatory bowel disease (IBD) [1,4] or due to infectious diarrhea caused by *Shigella*, *Salmonella*, *Campylobacter*, *Cytomegalovirus*, or *Enteroviruses*. We present a unique case of myopericarditis as a complication of nonspecific colitis, an interesting association that to our best knowledge has not been described in the literature until now.

Case Report

A 31-year-old Hispanic male without significant past medical history or medications prior to admission complained of sudden onset of watery, non-bloody diarrhea associated with mucus and crampy abdominal pain. Three days later the diarrhea became more frequent and the patient started to experience severe, sharp, constant, substernal chest pain associated with nausea and shortness of breath. He was brought to our institution, where an ECG showed ST-segment elevation in the inferolateral leads, with troponin I level of 8.25 ng/ml and CK-MB level of 44.6 ng/ml. Urgent cardiac catheterization revealed normal coronary arteries and the patient was diagnosed with myopericarditis. The echocardiogram results were within normal limits, with 65% ejection fraction and no evidence of wall motion abnormalities. Initial workup showed an elevated erythrocyte sedimentation rate and C-reactive protein, with normal complete blood count. Stool analysis was positive for occult blood but negative for *Clostridium difficile* toxin, ova, and parasites on 3 separate stool samples. Further polymerase chain reaction (PCR) workup revealed negative blood and stool cultures and negative serological tests for human immunodeficiency virus, viral hepatitis, *Cytomegalovirus*, *Coxsackie A & B viruses*, *Echovirus*, *rubella*, *mumps*, *Adenovirus*, and *Enterovirus*. Colonoscopy showed macroscopically congested mucosa in the descending colon, sigmoid colon, and rectum, with scattered petechiae indicative of nonspecific colitis (Figure 1), with normal ascending and transverse colon. Microscopic examination of obtained biopsies revealed evidence of acute mucosal inflammation without ulceration, granulomas, or ischemia, suggestive of nonspecific colitis; acid-fast stains for tuberculosis and immune-stains for cytomegalovirus were negative. The patient was started on Naproxen 250 mg twice daily and chest pain started to improve gradually. Troponin I levels trended up during the first 3 days of hospitalization to a peak of



Figure 1. Picture of the descending colon during colonoscopy showing mucosal congestion with scattered petechiae indicative of nonspecific colitis.

32.6 ng/ml and then started to trend down. The patient continued to have diarrhea for the first 3 days of hospitalization, followed by spontaneous resolution on day 4 with supportive care. The patient was discharged on Naproxen and was followed up in clinic 2 weeks after discharge, where he was found to be completely asymptomatic, with troponin I level <0.015 ng/ml.

Discussion

The etiology of myopericarditis can be divided into infectious, immune-mediated, toxic, and radiation. Cardiotropic viruses are considered the most common cause of myopericarditis. However, the association between IBD and myopericarditis is well established [3]. Extraintestinal manifestations of IBD rarely involve the heart, yet cases of pericarditis, myocarditis, and myopericarditis have been reported in the literature [4].

Establishing the diagnosis of myopericarditis requires evidence of pericarditis in addition to increased cardiac markers (e.g., troponin) or myocardial inflammation proved by an imaging modality in the absence of wall motion abnormalities [5,6].

Although no specific guideline is available for the treatment of myopericarditis, most cases with preserved myocardial function are treated as acute pericarditis with non-steroidal anti-inflammatory drugs as the mainstay of therapy, restriction of physical activity for 3 months, and scheduled follow up assessments [1].

In general, viral and idiopathic cases of myopericarditis have good prognosis, especially when the clinical picture is predominantly that of pericarditis. On the other hand, when the clinical manifestations are suggestive of substantial myocardial involvement, the prognosis is dependent on the extent of myocardial disease [7,8].

In our patient, the diagnosis of myopericarditis was established on the bases of clinical features, electrocardiographic changes, and elevated levels of cardiac markers in the absence of coronary artery abnormalities by cardiac catheterization. Although endomyocardial biopsy is considered the gold standard for the diagnosis of myocarditis, routine use of this procedure to establish the diagnosis is still highly controversial [3]. Due to the severe diarrhea 3 days prior to presentation, colonoscopy was performed to evaluate for possible IBD. No macroscopic or microscopic evidence of IBD was found and the diagnosis of nonspecific colitis was made.

Stool studies failed to show evidence of infectious cause for the patient's colitis, and serological studies ruled out the common cardiotropic viruses as a cause of this patient's diarrhea or myopericarditis.

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Our patient responded well to Naproxen treatment and was found to be symptom-free on follow up appointment.

Despite the fact that no evidence was found in our case to confirm the diagnosis of IBD or the presence of an infectious cause for the patient's colitis or myopericarditis, a viral or autoimmune etiology cannot be ruled out.

Conclusions

Myopericarditis is a challenging diagnosis that has been reported in association with colitis, either as an extraintestinal manifestation of IBD or due to infectious colitis with a cardiotropic organism. As was shown in our case, a specific cause of colitis might not be found, despite extensive workup.