CASE REPORT

Recurrent myopericarditis with extensive ulcerative colitis

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A 26-year-old man with ulcerative colitis was independently evaluated in different emergency rooms on two occasions, separated by six years, for episodes of severe chest pain consistent with myopericarditis. Cardiac enzyme and electrocardiographic changes were accompanied by extensive colonic inflammatory changes. Treatment with corticosteroids led to resolution. While his cardiac findings were initially believed to be caused by a previously reported drug hypersensitivity to mesalamine (5-aminosalicylate), sulphasalazine was tolerated. Recurrent myopericarditis with ulcerative colitis appears to be rare, but responsive to steroids. It may occur more often than is currently appreciated and may lead to fatal arrhythmias or cardiac failure.

Key Words: *5-Aminosalicylates; Inflammatory bowel disease; Myocarditis; Pericarditis; Ulcerative colitis*

Un myopéricardite récurrente en présence d'une colite ulcéreuse étendue

Un homme de 26 ans atteint de colite ulcéreuse a subi des évaluations indépendantes dans des salles d'urgence différentes à deux occasions, à six ans d'intervalle, pour des épisodes de graves douleurs thoraciques évocatrices d'une myopéricardite. Les modifications aux enzymes cardiaques et à l'électrocardiographie s'accompagnaient de modifications inflammatoires étendues du côlon. Un traitement aux corticoïdes a favorisé la résolution des douleurs. Au départ, on croyait ces observations cardiaques causées par une hypersensibilité déjà déclarée à la mésalamine (5-aminosalicylate), mais la sulfasalazine était tolérée. La myopéricardite récurrente accompagnant la colite ulcéreuse semble rare, mais elle réagit aux stéroïdes. Elle peut se produire plus souvent qu'on ne l'évalue et pourrait entraîner des arythmies fatales ou une insuffisance cardiaque.

Inflammatory bowel diseases, including ulcerative colitis and Crohn's disease, may be associated with extraintestinal disorders, often during an exacerbation of the disease. Cardiac complications occur, particularly with ulcerative colitis (1). Although considered uncommon, clinically significant cardiac changes may occur more often than currently appreciated. For example, up to one-third of patients may develop myocarditis or pleuropericarditis during the course of their disease (2).

An array of symptoms may result in myopericarditis, ranging from shortness of breath to chest pain. These may resolve without specific therapy, or rapidly evolve and progress to cardiogenic shock and death (3). In ulcerative colitis, viral agents are often thought to be responsible, but other causes may occur including drug reactions (eg, 5-aminosalicylates [5-ASAs]) (4).

CASE PRESENTATION

In April 2009, a 26-year-old man developed left-sided and central chest pain that was present for three days. The pain was pleuritic in nature, radiating to the left shoulder and neck. Fever and malaise were also present. In the emergency room, he was evaluated by a cardiologist. Clinical evaluation revealed a pale and lethargic man with a heart rate of 120 beats/min. The examination was otherwise normal. Laboratory studies showed anemia (hemoglobin level of 124 g/L). The patient's liver and renal function studies were normal, but his serum troponin level was 1.46 µg/L (normal is lower than 0.1 µg/L). The initial electrocardiogram revealed atrial flutter with 2:1 block, then sinus tachycardia with nonspecific ST-T wave changes, but no ischemia or ectopy consistent with myopericarditis.

The patient's history examination revealed extensive ulcerative colitis, which was diagnosed in March 2003 following three months of abdominal pain, bloody diarrhea and weight loss. At that time, the physical examination was normal. Blood studies revealed anemia (hemoglobin level of 119 g/L; normal is 135 g/L to 175 g/L) and iron deficiency (ferritin level of 9 pmol/L; normal is 45 pmol/L to 674 pmol/L). His white cell and eosinophil counts were normal. Antineutrophil cytoplasmic antibody serological studies were positive with an atypical perinuclear pattern. Antinuclear and DNA antibodies were negative. Fecal pathogens were not detected. Endoscopic evaluation of the colon with biopsies confirmed extensive ulcerative colitis. Mesalamine (5-ASA; Asacol, Warner Chilcott Canada Co), 800 mg twice a day alone, was prescribed, but he reappeared at the same hospital three weeks later with persistent diarrhea, fever and new-onset anterior chest pain. A cardiologist examination revealed no new findings. His serum troponin level was 4.82 µg/L and his creatine kinase level was 664 U/L (normal is 35 U/L to 250 U/L). An electrocardiogram showed nonspecific ST-T wave changes consistent with myocarditis. Over the next week, he was treated with hydrocortisone 100 mg every 12 h and then oral prednisone. The patient's diarrhea resolved, chest pain disappeared and heart rate normalized. His serum troponin level fell within three days to 0.44 µg/L and creatine kinase fell to 580 U/L. Because of a possible hypersensitivity reaction to mesalamine, use was terminated and prednisone was simply tapered over the next two months and discontinued. His symptoms resolved and weight returned to normal. Over the next six months, blood and biochemical studies, electrocardiographic changes and colonoscopic appearance (including biopsies) became normal.

Over the next six years, he was seen periodically in different hospitals with bloody diarrhea. On each occasion, endoscopic evaluation by different gastroenterologists confirmed the presence of colitis and courses of steroids were administered. Although azathioprine was also prescribed on at least two occasions, he was not compliant with its use and failed to appear for monitoring bloodwork, so the medication was discontinued. He was also treated by his family physician with sulphasalazine, but his compliance was poor and the patient used the medication erratically. At no time, however, during any of these intervening hospital visits was chest pain noted, even after sulphasalazine use. During these hospitalizations, repeated fecal cultures and fecal toxin assays were negative. Viral studies (serological studies including HIV and tissue cultures) were negative, and mucosal biopsies for

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cytomegalovirus culture were negative. Other medications, including cocaine, had not been used. During two of his admissions, use of intravenous cyclosporine was suggested and surgical consultation was offered, but both were refused.

On this last hospitalization in April 2009, endoscopic evaluation with biopsies reconfirmed the presence of extensive colitis and computed tomography scanning showed diffuse colonic thickening. A course of tapering prednisone therapy was associated with complete resolution of chest pain and previous endoscopic changes resolved. He now remains on sulphasalazine and azathioprine.

DISCUSSION

The present study reports a single patient with recurrent extensive ulcerative colitis. On at least two independent occasions, separated by a period of six years, he presented with severe chest pain, elevated troponin measurements and electrocardiographic changes typical of myopericarditis. Treatment with corticosteroids on both occasions caused rapid resolution.

The first episode appeared after onset of severe and extensive colitis that was initially treated with mesalamine. Because myopericarditis has been attributed to mesalamine (5-ASA) (4), its use was terminated. Later, the patient was prescribed sulphasalazine by his family physician suggesting that the 5-ASA was not responsible. The second episode of myopericaritis also occurred when endoscopic changes were extensive. Complete resolution of cardiac and colonic findings with corticosteroids suggested that immune-mediated factors played a role in both recurrent disorders. Alternatively, myocardial damage could also occur during intestinal disease, independent of immune-mediated reactions. For example, during enteroviral infections, products of the enteroviral genome, including viral protease 2A, can cleave host proteins (including dystrophin) causing cardiac dysfunction (5). Further studies to elucidate molecular mechanisms associated with these clinical phenomena are needed.

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