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Acute Streptococcal Myocarditis Mimicking Acute St Elevation Myocardial Infarction

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ABSTRACT

Myocarditis is an inflammatory disease of the cardiac muscle associated with both infectious and noninfectious diseases. Among the infectious etiologies, viruses are the most frequent pathogens, streptococcus is rarely reported as a causative pathogen of acute myocarditis without clinical features suggestive of rheumatic fever. No epidemiological data estimating the incidence of group A streptococcus (GAS) induced myocarditis exist at this time [1]. The clinical manifestations are variable: it classically presents as an acute heart failure and can also be manifested with arrhythmia (tachycardia or bradycardia) or chest pain mimicking myocardial infarction, especially in young patients, accompanied with focal ST elevations on the electrocardiogram and elevated cardiac biomarkers. Here we present a case of a 44- year-old man who presented with myocarditis mimicking ST elevation myocardial infarction (STEMI) a few days after he an episode of angina.

Introduction

Myocarditis is an inflammatory disease of the cardiac muscle associated with both infectious and noninfectious diseases. Among the infectious etiologies, viruses are the most frequent pathogens, streptococcus is rarely reported as a causative pathogen of acute myocarditis without clinical features suggestive of rheumatic fever. No epidemiological data estimating the incidence of group A streptococcus (GAS) induced myocarditis exist at this time [1].The clinical manifestations are variable: it classically presents as an acute heart failure and can also be manifested with arrhythmia (tachycardia or bradycardia) or chest pain mimicking myocardial infarction, especially in young patients, accompanied with focal ST elevations on the electrocardiogram and elevated cardiac biomarkers. Scintigraphy and MRI have emerged as important tools in the diagnosis of myocarditis.The present gold standard for diagnosis of myocarditis has traditionally been endomyocardial biopsy.

Observation

A 44 -year-old man, without cardiovascular risk factors. Having as antecedents a notion of repeated angina. Who presents to the emergency department for chest pain, one week after an episode of angina.

The electrocardiogram showed a regular sinus rhythm at 75 / minute, with ST elevation from V2 to V4,in lateral and inferior leads (figure 1). The assumed diagnosis was STEMI. Urgent
coronary angiography was performed, which demonstrated normal coronary arteries with no calcifications or stenosis. transthoracic echocardiogram demonstrated preserved left ventricular systolic function with an ejection fraction of 51% and global hypokinésie (figure 2).

Laboratory tests revealed: white blood cell count 12000/mm3(Neutrophils 90%), high cardiac troponin rate 9 µg / L, c-reactive protein rate 59 mg / L and ASLO at 1500 IU / ml. Viral serology was negative.

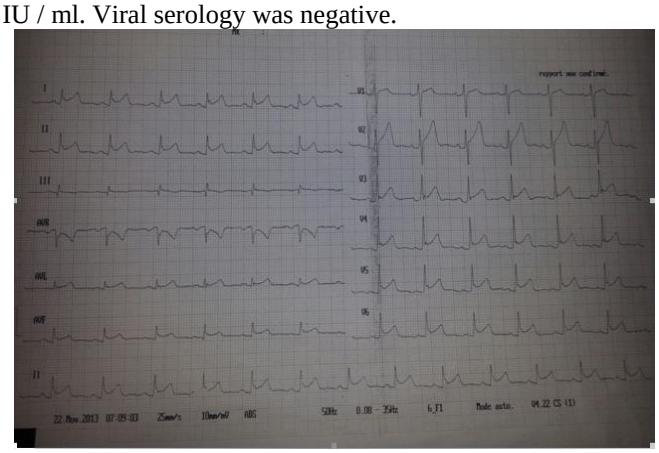

Figure 1. Electrocardiogram : ST elevation from V2 to V4,in lateral and inferior leads.

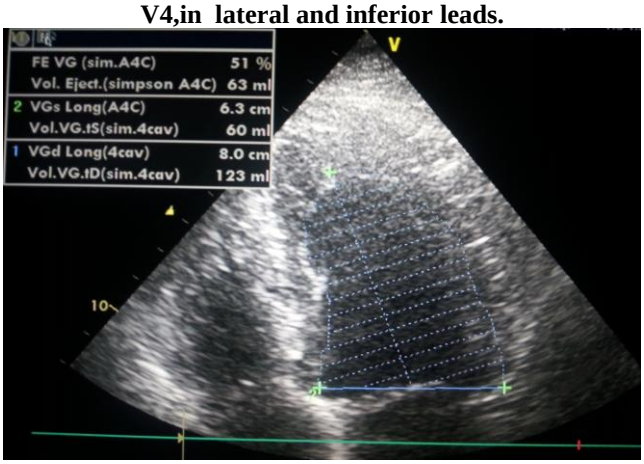

Figure 2. Transthoracic echocardiography: an apical four-chamber view showing preserved left ventricular systolic function (51%).

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In view of chest pain, the antecedent of angina and the results of complementary examinations, The diagnosis of a Streptococcal Myocarditis was retained . The patient was treated with penicillin and corticosteroids until normalization of erythrocyte sedimentation.

Discussion

Current published reports contain extensive evidence linking acute carditis (pericarditis, myocarditis, and valvulitis) with acute rheumatic fever. Acute myocarditis associated with GAS without rheumatic fever symptoms is rare, and its incidence has been increasingly reported since Gore and Saphir first described it in 1947 (2).

A diagnosis of GAS-induced myocarditis is to be suspected in young men with a chief complaint of acute chest pain without significant risk factors for premature cardiovascular disease, particularly with evidence of streptococcal pharyngitis or tonsillitis. Electrocardiogram tracings will most likely show ST-segment elevations in conjunction with elevated cardiac enzymes. Coronary arteries are typically angiographically normal. The most common transthoracic echocardiogram findings are left ventricular wall motion abnormalities, mitral regurgitation, and pericardial effusion (3)

The present gold standard for diagnosis of myocarditis has traditionally been endomyocardial biopsy.(4,5) During the acute phase, interstitial edema, lymphocyte infiltration of the myocardium and myocyte necrosis is shown, but isolation of infectious etiology is rare. (6) Endomyocardial biopsy has low sensitivity due to the focal and heterogeneous involvement of the myocardial disease and can be associated with major complications, particularly in the pediatric age group. Sensitivity has been estimated at between 50 to 63% (7) although this may be increased by biventricular samples and analysis of 6 or more samples per patient.

Scintigraphy and MRI have emerged as important tools in the diagnosis of myocarditis. Recent studies have demonstrated the usefulness of scintigraphy, not only in the diagnosis but also the prognosis of myocarditis, with a sensitivity of 91-100% and negative predictive value ranging from 93-100% (8).

Optimal treatment of Streptococcal Myocarditis remains unclear, largely because of a lack of randomized controlled trials. Due to the presumed inflammatory nature of the condition, anti-inflammatory agents including corticosteroids are frequently used, although a recent Cochrane review showed no benefit in reducing cardiac complications at 1 year in patients treated with corticosteroids or immunoglobulins compared with placebo(9). To prevent recurrences of ARF and carditis, long-term antibiotic prophylaxis is recommended, with a view to reduce the risk of recurrence.

Conclusion

Acute streptococcal myocarditis is an uncommon condition in the developed world and a high clinical suspicion is necessary for its appropriate diagnosis. Atypical presentations should be considered in view of the varied presentations. Contrast-enhanced MRI imaging appears to be a suitable non invasive diagnostic modality. Given the long-term adverse sequelae of this disease process, accurate and appropriate diagnosis is essential to continue active long term prophylactic antibiotic therapy.

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