Abstract

Hypertrophic cardiomyopathy represents a very broad nosological framework, and can be responsible for different clinical presentations. Among these presentations, there is a painful form, with symptoms that can simulate acute coronary syndrome. We report the case of a patient who illustrates this differential diagnosis problem between the existence of an unrecognized HCM and an acute coronary syndrome.

Introduction

Hypertrophic cardiomyopathy (HCM) is the most common inherited cardiac disorder, affecting approximately 1 in 500 patients in the general population [1,2]. Its etiology lies mostly in mutations involving the sarcomeric proteins. HCM is typically inherited via the autosomal dominant pattern and characterized by variable degrees of ventricular hypertrophy and different clinical phenotypes. By definition, it is characterized by a marked increase in left ventricular wall thickness (15 mm, or >13 mm in family members of patients with HCM or in conjunction with a positive genetic test) of a non-dilated left ventricle, in the absence of abnormal loading conditions (such as aortic stenosis, systemic hypertension, etc.) [3,4].

We present a case who was initially thought to have an acute coronary syndrome but who was later diagnosed to have a hypertrophic cardiomyopathy.

Case Report

This is a 45-year-old patient, with chronic smoking as cardiovascular risk factors, with no particular medical history or sudden death in the family, who reported for 2 years class II angina according to Canadian Cardiovascular Society (CCS) associated with stage II dyspnea according to the classification of New York Heart Association (NYHA). The patient neglected this symptomatology, until the day of his admission when the patient presented with infarctoid chest pain.

Clinical examination at his admission found a patient conscious, still suffering, eupneic at rest, supporting supine position. Arterial Tension was 120/70mmHg, with a heart rate of 78bats/min with an ejection systolic murmur at the aortic focus without signs of right or left heart failure.

The initial ECG showed a atrial fibrillation with an average ventricular cadence at 78bp, concave ST segment elevation in apicolateral leads (V4, V5, V6, DI and AVL), negative T wave in inferior leads, as well as left ventricular hypertrophy (Figure 1).

Figure 1: ECG.
The initial diagnosis of STEMI was established. Coronary angiography performed however showed normal coronary arteries without significant stenosis. A posteriori echocardiography concluded to hypertrophic cardiomyopathy (SIV=25mm, PP=21mm) with dynamic obstruction (maximal Gradient=97mmHg), atrial dilatation and undilated left ventricle with good systolic function (Figure 2).

Cardiac Magnetic Resonance showed an aspect of hypertrophic cardiomyopathy in its medio-ventricular form realizing an hourglass appearance with atrial dilatation (Figure 3).

The cascade of events, beginning with morphologic and functional alterations in coronary microvasculature leading to ischemia, followed by myocyte necrosis, replacement fibrosis and LV remodeling with systolic dysfunction, ventricular arrhythmias and sudden cardiac death is conceptually attractive, explaining the natural history of some HCM patients [6].

**Conclusion**

In conclusion, hypertrophic cardiomyopathy is another non-infarctional cause of ST segment elevation that emergency physicians should be aware of when assessing in patient with ST segment elevation on ECG.

**References**