INTRODUCTION

Anomalous origin of the left coronary artery from the main pulmonary artery (Alcapa syndrome) is a rare congenital anomaly associated with early infant mortality and adult sudden cardiac death. As it is mainly diagnosed in the first year of life, adulthood presentation is rare and associated to left ventricular dysfunction, significant mitral valve insufficiency and myocardial ischemia.

Surgical correction is recommended as soon as diagnosis is made. In both infants and adults, the establishment of a dual coronary system is the ideal surgical treatment leading to progressive ventricular recovery.

In this report we describe a case of Alcapa syndrome in an asymptomatic 14-year-old athletic patient diagnosed at our institution by coronary computed tomography. The patient underwent successful surgical repair of the coronary anomaly by a direct coronary reimplantation to the aorta soon after the diagnosis. At the time of this report, the patient is well and he is performing his athletic activity.

CASE REPORT

An athletic 14-year-old male underwent standard medical examination by sport physician. He had no cardiovascular risk factors and denied any cardiovascular symptoms. His physical examination was unremarkable.

Nevertheless, an exercise stress electrocardiogram revealed inferolateral ST depression in lead V6. Therefore, he performed a Holter electrocardiogram that detected rare ectopic ventricular heart-beats. The 2-dimensional echocardiography showed left ventricular moderate hypertrophy associated to a preserved function and a trivial mitral valve regurgitation. Cardiac magnetic resonance imaging (MRI) detected a spongy left ventricle (LV) with hypokinesis of the apical septal wall.

Finally, the patient was referred to our institution for overall diagnosis.

We performed a coronary computed tomography (CT) that detected an anomalous origin of the left coronary artery (LCA) from the posterior aspect of the main pulmonary artery (PA) (Figure 1). LCA was dilated (maximum transverse diameter of 5 mm) and it coursed toward interventricular groove branching into the left anterior descending (LAD) and circumflex artery (CX), both enlarged. A markedly dilated (maximum transverse diameter of 7 mm) and tortuous right coronary artery (RCA) with correct origin was also detected such as multiple and ectasic intercoronary collateral arteries.