

Thrombosed coronary artery fistula: a case report and literature review**Fístula de artéria coronária trombosada: relato de caso e revisão da literatura**

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ABSTRACT

Coronary artery fistulas are direct communications between the artery and cardiac cavities. They are rare and may present variable hemodynamic repercussions, as well as clinical presentation. The right coronary originated fistulas are more frequent. This report describes a case of right coronary artery fistula draining into the right ventricle in a 29 years old man, whose outcome was uncommon due to the presence of thrombosis in the coronary artery.

Keywords: Thrombosed coronary artery fistulas; hemodynamic repercussions; conducts; diagnostic tests.

RESUMO

As fístulas da artéria coronária são comunicações diretas entre a artéria e as cavidades cardíacas. São raros e podem apresentar repercussões hemodinâmicas variáveis, bem como apresentação clínica. As fístulas de origem coronária direita são mais frequentes. Este relato descreve um caso de fístula de artéria coronária direita drenando para o ventrículo direito em um homem de 29 anos, cujo desfecho foi incomum devido à presença de trombose na artéria coronária.

Keywords: Fístulas de artéria coronária trombosadas; repercussões hemodinâmicas; condutas; testes de diagnóstico.

1 INTRODUCTION

Coronary artery fistulas are direct communications between the artery and cardiac cavities or pulmonary artery trunk. They can be of congenital origin (primary), or consequent to traumatic processes and localized inflammation (secondary)^(2,3).

Hemodynamic repercussions and clinical presentation are variable, depending on the fistula's blood flow magnitude. In some cases, manifestations of volume overload or myocardial ischemia due to flow theft may be found⁽¹⁾.

The aim of this paper is to present a case of coronary artery fistula that is difficult to diagnose and to review the literature on the subject.

2 CASE REPORT

Young man, 29 years old, complaining of retrosternal pain in tightness with a feeling of being pinched, of high intensity, beginning a few hours ago, without irradiation and without other associated symptoms. Denies recent infection, gastrointestinal and urinary disorders. A healthy patient, without a family history of coronary artery disease, denies smoking, illicit drugs, use of continuous medications or drug allergies.

An electrocardiogram was performed showing sinus rhythm and T-wave inversion in the inferior wall, serial measurement of myocardial necrosis markers, with ascending curve, troponin I of 0.031 => 0.187 => 0.704 (VR: 0.04 ng / ml) and CKMB (mass) 5.08 => 18 (VR: 4.5 ng / ml).

Then, he underwent a cardiac magnetic resonance imaging, which revealed a sessile lesion infiltrating the interatrial septum, posterior and superior wall of the right atrium, of undetermined aspect, with areas of transmural fibrosis in the middle inferior-lateral segment of the left ventricle. Therefore, the procedure followed was to perform catheterization that demonstrated a right coronary artery free of significant atheromatosis and the presence of a probable proximal branch aneurysm with intracoronary thrombus.

However, to confirm the presence of cardiac aneurysm, coronary angiogram was performed, revealing the presence of an abnormal branch emerging from the proximal segment of the right coronary artery, showing on the superior and posterior wall of the right atrium. The artery exhibited marked ectasia, with proximal luminal thrombosis and distal opacification failure due to thrombosis. Given the location and age group, the diagnosis of thrombosed coronary-cavitary fistula was closed.

3 DISCUSSION

The coronary arteries are derived from angiogenic cells of the epicardium and sinus of the aortic valve, and from the myocardial sinusoids. Fistulas form when these embryonic sinusoids persist in the myocardium ⁽²⁾.

The pathophysiology and clinical presentation depend on the magnitude of blood flow through the fistula and its location. Most of the cases described in the literature are those in which blood flow goes to the right chambers, with a variable degree of pulmonary hyperflow leading to clinical manifestation of heart failure or dyspnea on exertion. The phenomenon of leakage of coronary flow may occur and the symptoms, in these cases, would be precordialgia or signs of ischemia on conventional or stress electrocardiogram. The occurrence of ischemia does not depend on the size of the fistula and has been described even with a small flow ^(2,3,4).

The diagnosis can be made from the clinic, the x-ray and the electrocardiogram. The exams may be normal if the deviation through the fistula is small, but they may show an enlarged chamber or ischemia. The real diagnosis of a coronary artery fistula can be made with transthoracic echocardiogram in children and transesophageal echocardiogram in adults. Coronary fistulas are also detected non-invasively using chest computed angiogram ^(2,3,4).

The treatment of the fistula depends on its size. The large ones need to be closed, small to moderate fistulas with complications such as ischemia, arrhythmias or ventricular dysfunction of unexplained etiology, also need an intervention procedure. Symptomless intermediates are different and depend on location. To the proximal ones, closure is recommended, followed by antiplatelet

therapy for at least one year, and to distal fistulas, closure is followed by therapy for one year or observation while receiving antiplatelet drugs indefinitely. Finally, small fistulas in asymptomatic patients should be observed, without closure or with a recommended medical prescription ⁽⁵⁾.

4 CONCLUSION

In view of the clinical case described, the patient would fit into the fistula profile that has already presented complications and, therefore, immediate surgery is indicated. However, the tests showed that there was no blood flow through the fistula, since it was thrombosed.

Therefore, due to having a heart attack and the presence of a thrombus, the best therapeutic indication is anticoagulation. With this approach, it is expected that the patient will possibly evolve to resolve the thrombus and likely reopen the fistula, allowing the passage of blood flow.

Thus, the patient was discharged on continuous use of antihypertensive drugs, ramipril 2.5mg / day and metoprolol 50mg / day, and anticoagulant rivaroxaban 20mg / day, in addition to serial reassessments to observe the evolution of the condition. If the fistula canal is reopened, the patient will be scheduled for surgical closure.

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