

Accidental Discovery of Coronary Fistula and Left Megadolicho Coronary Artery: About One Case in Dakar

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ABSTRACT

We report a very rare case of a 66-year-old female patient with coronary fistula and left mega-coronary heart disease. This lady was admitted for exploration of a chronic constrictive pericarditis. The clinical presentation was a NYHA stage III dyspnea and atypical precordial pain, indicative of coronary angiography following right catheterization. The coronary angiography revealed a left megadolicho coronary artery; the contrast enhancement of the right ventricle suggested a fistula between the left coronary artery and the ventricle. The transthoracic echocardiography confirmed the presence of a communication between the left coronary and the right ventricle (coronaro-cameral fistula) with an acceleration of the flow on color Doppler. So far, she did not have her surgical cure but no complications have been revealed.

Keywords: Coronary fistula; Mega dolicho coronary; Doppler echocardiography

INTRODUCTION

Coronary aneurysms are defined by a dilation of the artery exceeding 1.5 times the diameter of adjacent normal segments. They can be single, multiple, saccular or spindle-shaped [1]. Coronary cardiac fistula is an abnormal communication between a coronary artery and a heart cavity or a large vessel [2,3]. These two pathological entities are rare, and can exceptionally be associated. We report a very rare case of a fistula between the left coronary artery and the right ventricle associated with a left megadolicho coronary artery.

CASE PRESENTATION

Patient and observation revealed auscultatory tachyarrhythmia, tricuspid and mitral

This was a 66-year-old hypertensive patient admitted for right catheterization with an ultrasound suspicion of constrictive pericarditis. The lady presented a stage III dyspnea of the NYHA classification and atypical precordial pain. Clinical examination

systolic murmur and right heart failure syndrome. The lung examination was normal. The ECG showed complete atrial fibrillation tachyarrhythmia with a ventricular response at 117 cycles per minute, right atrial hypertrophy and right ventricular hypertrophy.

The right catheterization confirmed constrictive pericarditis with the presence of a diastole and a dip-plateau appearance. The coronary angiography revealed a left mega-dolicho-coronary artery (Figures 1A and 1B). Contrast uptake by the right ventricle suggested a fistula between it and the left coronary artery. The right coronary artery was angiographically healthy. Doppler echocardiography showed dilation of the left main coronary artery (Figure 2A). The color Doppler showed a communication between the left coronary artery and the right ventricle with an acceleration of the flow producing a coronaro-cameral fistula (Figure 2B). Echocardiography also showed moderate circumferential pericardial effusion and moderate pulmonary arterial hypertension. The bi-ventricular systolic function was normal. The patient did not receive fistula treatment nor pericardial decortication. There were no complications at 12-month follow-up.

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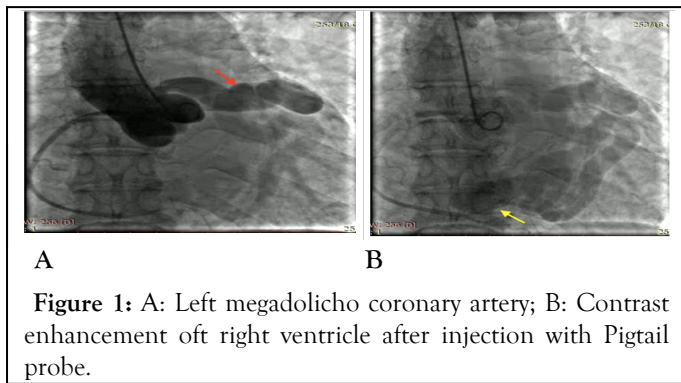


Figure 1: A: Left megadolicho coronary artery; B: Contrast enhancement of right ventricle after injection with Pigtail probe.

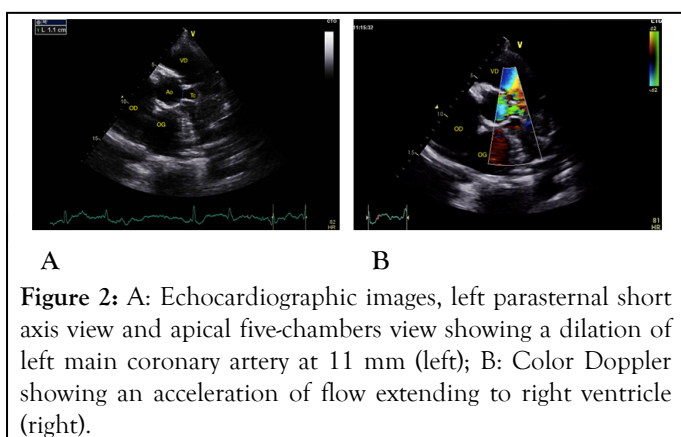


Figure 2: A: Echocardiographic images, left parasternal short axis view and apical five-chambers view showing a dilation of left main coronary artery at 11 mm (left); B: Color Doppler showing an acceleration of flow extending to right ventricle (right).

RESULTS AND DISCUSSION

A coronary artery aneurysm is rarely congenital. Atherosclerosis is the most common etiology, but these aneurysms can be associated with an inflammatory or dysplastic process [1]. Pseudotumoral aneurysms of the coronary arteries are rare, and their incidence is difficult to determine. They are thought to be predominantly male and to have a predilection for the right coronary artery, where they complicate progressive atherosclerosis in half the cases [1]. Coronary fistula is a rare abnormality causing a coronary artery to communicate with a cardiac cavity (coronaro-cameral) or a large base vessel, thereby bypassing the myocardial capillary bed [2,3].

In one study, the authors show that from an anatomical point of view, coronary fistulas most often arise from the right coronary artery in about 50% of patients, from the left coronary artery in about 42% of patients, and the two coronaries arteries in 8% of patients. More than 70% drain in the right heart, in order of frequency: the right ventricle, the right atrium, the pulmonary artery, followed by the coronary sinus, left atrium, left ventricle and superior vena cava [4]. Their frequency, initially underestimated, increases with coronary angiography and their incidence varies from 0.3% to 4.5% [5]. The majority of these fistulas are congenital as in our patient, but can be acquired following cardiac surgery (including valve replacements and coronary artery bypass grafts) or repeated myocardial biopsies, as part of the heart transplant. The clinical presentation depends mainly on the size of the left to right shunt [6]. The majority of

patients are asymptomatic, and the discovery is often accidental when exploring for another pathology as in this case.

Complementary examinations play an important role, not only for diagnosis, but also for rational therapeutic management. The gold standard is coronary angiography. This examination confirms the diagnosis and allows the exact anatomy of the coronary fistula to be studied, highlighting the involved artery, which is often dilated, the fistulous pathway and the drainage site. The presence of other coronary fistulas can also be detected by this examination [7]. Doppler echocardiography is a useful tool in the diagnosis of large left-to-right shunt fistulas. However, the fistula path and the drainage site are difficult to see, especially when it is tortuous. The CT scan is of great help [8,9]. The gold standard, however, is coronary angiography. It can confirm the diagnosis and study the exact anatomy of the coronary fistula by highlighting the affected artery, which is often dilated, the fistula path and the drainage site [10].

The management strategy for coronary fistulas is controversial. It is based on anecdotal cases or on small retrospective studies [3,11]. Treatment consists of closing the fistula. Surgery was the only treatment option for years, and is still valid for multiple, large, severely aneurysmal and tortuous fistulas. In one study, the authors report, in addition to the data in the literature and based on their experience, the effectiveness of the percutaneous approach with different closure systems available, which can be adapted both anatomically and functionally [12]. In one reported case, a 63 year old woman, asymptomatic for angina, had several fistulas between the proximal and distal circumflex coronary and the proximal anterior interventricular, all draining into the inferior lobar pulmonary artery. The fistulas were occluded with tungsten coils [4].

CONCLUSION

The combination of coronary fistula and aneurysm is a rare disease entity. The advent of coronary angiography has revealed these new classes of coronary abnormalities. However, their management remains difficult and, above all, controversial.

CONFLICTS OF INTEREST

We declare no competing interest.

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No.

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