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Heart failure as an acquired coronary fistula manifestation in the adulthood: a rare case of a coronary arterial fistula

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Topic(s):
Chronic Heart Failure – Pathophysiology and Mechanisms

Citation:
Coronary artery fistula is a direct precapillary connection between a branch of a coronary artery with the lumen of a cardiac chamber or with one of the vessels located around it (1). Coronary fistulas correspond to 0.002% of the general population and 0.4% of all cardiac malformations. (2). The other variant is due to acquired fistulas that occur as a result of coronary angioplasty, coronary revascularization, after a heart transplant, a rare myocardial biopsy, they can be secondary to trauma with the passage of transcatheter catheters. (1) (3) Located mainly in the right coronary artery (55%), in the left coronary artery (35%) (4) with the most common drainage site, the right ventricle (45%), the right atrium (25%), the pulmonary artery (15%) ) and the left atrium or left ventricle in less than 10% of cases (5). The majority of fistulas are isolated, tend to be asymptomatic and incidentally detected, they can be associated to different manifestations depending on the physiopathological mechanism as the short circuit from left to right, which often causes congestive heart failure due to volume overload (6) or in other cases a coronary “steal” syndrome with myocardial ischemia and possible angina or ventricular arrhythmias. (7) (8)

68-year-old male patient, first time in our heart failure department, chest pain, arterial hypertension, unidentified heart failure, permanent atrial fibrillation, dextrocardia-levocardia, wound by left thoracoabdominal firearm and a traumatic diaphragmatic hernia, three years ago had been presenting heart failure required hospitalizations, disease modifying therapy, its etiology an incidental finding. Transthoracic echocardiography with presence of coronary fistula with continuous flow at the trunk level, the left coronary to the left atrium was dilated and a dilated left ventricle with moderate eccentric parietal hypertrophy and preserved systolic function with ejection fraction of 55%, arteriography showed the right coronary as a single vessel due to the collaterals to the anterior descending and Circumflex, which are not filled by antegrade circulation and the left coronary artery presents a giant fistula that starts from the trunk of the left coronary artery and it is connected to the left atrium, Angio-Tac was asked for; but not done because of atrial fibrillation, tac with three-dimensional reconstruction was done, left coronary trunk is dilated, as the proximal portion of the first diagonal, the circumflex artery which is connected to the inferior aspect of the left auriculilla, anterior descending artery, first and second diagonal and marginal obtuse artery, are small caliber, with filiform opacification. Based on the findings we conclude that the heart failure episodes are due to coronary steal syndrome in a patient with an acquired fistula after a gun shot, so it was proposed to perform coronary revascularization of the DA and circumflex with ligature of the left main coronary artery.
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