

Case Report

A Case Report of Coronary Fistula with ST Segment Elevation Myocardial Infarction

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Case Presentation

A 61-year-old male presented with burning chest pain of medium intensity, diaphoresis, dyspnea and evacuation desire, the electrocardiogram revealed sinus rhythm with first degree atrioventricular block and ST Segment Elevation, positive cardiac biomarkers, confirming the diagnosis of ST Segment Elevation Myocardial Infarction (STEMI).

Patient underwent urgent coronary angiography that revealed Right Coronary Artery (RCA) with total thrombotic occlusion in the proximal-middle segment; it was observed an abnormal vessel with independent origin just above the ostium of the RCA, directed towards the aorta (Figure 1).

Left main with 50% distal obstruction, circumflex artery presents a tandem lesions on a marginal branch of 80%, Left Anterior Descending (LAD) with proximal ectasia and severe diffuse lesions in the proximal and middle segments (90%) and was observed the emergence of great caliber vessel through proximal ectasia and that is directed towards the aorta (coronary fistula) (Figure 2).

It was decided to perform the primary coronary intervention (p-ICP) of the culprit vessel, RCA lesion was managed by thromboaspiration and a subsequent stenting, being necessary to splice from distal to proximal 3 Bare Metal Stents (BMS), with 0% of residual lesion confirmed by stent boost technique, with presence of epicardial TIMI III flow and no complications (Figure 3).

Two weeks later a coronary CT was performed to evaluate the fistula anatomy reconstruction finding a vessel of 1.7mm of diameter and the origin at 8 mm from de ostium directed through aorta (Figure 4).

Patient was programmed after a one month of the acute event for subsequent Coronary Artery Bypass Graft surgery (CABG) for coronary revascularization with left internal mammary artery to LAD, inverted saphenous venous hemoducts to the marginal branch and closure of the left fistula, five days before the intervention ticagrelor

Abstract

A patient presented with a ST Segment Elevation Myocardial Infarction (STEMI). The Coronarography revealed multivessel disease and the emergence of a coronary fistula that is directed towards the aorta. The culprit vessel was treated with primary percutaneous coronary intervention with subsequent treatment with coronary artery bypass graft surgery.

Keywords: Coronary fistula; Myocardial infarction

was stopped and continued taking aspirin, and following CABG he started taking clopidogrel.

Discussion

Coronary fistula is an abnormality characterized by abnormal communication between a coronary artery and a cardiac chamber, the systemic or pulmonary circulation. 55% of fistulas originate from the right coronary artery, 35% of the left coronary artery and less than 10% of both [1,2].

In general, they are asymptomatic (40%), large fistulas (3 times the size of the coronary artery) can become symptomatic and can cause coronary artery steal phenomenon, which leads to ischemia of the segment of myocardium perfused by the coronary artery. The pathophysiological mechanism of coronary artery fistula is myocardial stealing phenomenon or reduction in myocardial blood flow distal to the site of the coronary artery fistula connection [3].

There is no consensus as to the indications for surgical or endovascular correction of coronary fistulas, the recommendation is to individualize in each case. The therapeutic decision should focus on the evaluation of the hemodynamic repercussion and



Figure 1: Right Coronary Artery (RCA) with total thrombotic occlusion in the proximal-middle segment with an abnormal vessel directed towards the aorta.



Figure 2: Left coronary artery with proximal ectasia, multivessel disease and emergence of great caliber vessel directed towards the aorta.



Figure 3: Angiographic result after p-PCI of RCA lesion.

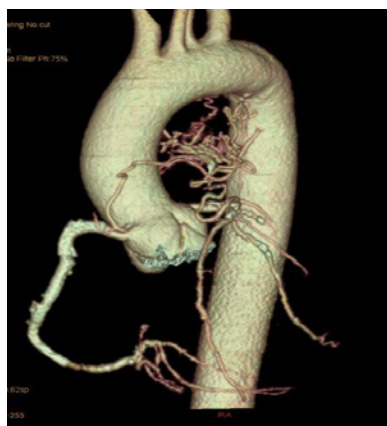


Figure 4: CT Reconstruction, it revealed a vessel of 1.7mm of diameter and the origin at 8 mm from de ostium directed through aorta.

focus on preserving the coronary flow. Treatment includes ligation, embolization, placement of Coils and coated stents [4-8].

In the site of a STEMI p-PCI has become the treatment of choice, multi-vessel coronary artery disease is found to be present from 41 to 67% of patients, [9-12] and it has been found to be associated with worse prognosis in patients with STEMI [13] there are different strategies to treat this patients including revascularization of single vessel disease, p-PCI of infract related artery only, primary multivessel PCI and subsequent staged PCI or CABG. The precise

timing of bypass surgery for the stable patient with indications for surgery remains controversial [14] current guidelines recommend delaying surgery 4 to 6 weeks after BMS placement to allow proper thienopyridine use to reduce the risk of coronary stent thrombosis [15-17]. It had been reported an incidence of 30-day ischemic events of 2.6% in patients with Bare Metal Stent (BMS) when the interval between stent insertion and major elective cardiac surgery was 45 to 180 days and 6.7% when the interval was <45 days and 20% in patients with Drug Eluting Stent (DES) implantation when the interval between stent insertion and surgery was <45 days, whereas the event rate was only 1.2% once the interval exceeded 180 days [18].

Conclusion

Coronary fistula is a rare congenital malformation, the diagnosis of which arises as a clinical finding. In the present case, the patient's coronary artery disease together with obstruction and coronary steal phenomenon represent a pathophysiological problem. It is essential to individualize each case to determine the appropriate therapy to follow.

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