

## A Spectacular Inferior Acute Myocardial Disaster Involving Right Ventricular: Case Report

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### Abstract

### Case Report

Inferior myocardial infarction is not uncommon, it is presumed to be safer than anterior ones, however, when complications occur, and there is a significant morbidity and mortality leading sometimes to a disaster. In this case report, we do identify the complications most likely occurring during inferior Acute Myocardial Ischemia: heart block, acute ischemic mitral regurgitation, right ventricular involvement and cardiogenic shock; Our patient had them almost all! Our case showed also that immediate prognosis of Inferior myocardial infarctions involving right ventricular is bad; however the long-term evolution remains reassuring if the patient goes beyond dangerous cap. Since right ventricular is not rancorous.

**Keywords:** acute myocardial infarction; right ventricular involvement; cardiogenic shock.

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### INTRODUCTION

Inferior myocardial infarctions account for 40 % of all acute myocardial infarctions, and are generally viewed as having a more favorable prognosis than anterior wall infarctions. However, It is important to notice that nearly half patients suffering from inferior infarction will have distinguishing features associated with an increased mortality [1].

### CASE REPORT

We report a case of a 60 years old patient, who is diabetic and heavy smoker. He consults for an inaugural prolonged chest pain after an annoying context, radiating to the left upper limb, 25 hours after symptom onset. On admission, he had the following vitals: Blood pressure at 100/70mmHg, jugular venous distension and moderate peripheral edema. His heart sounds were normal. He also had a normal chest auscultation.

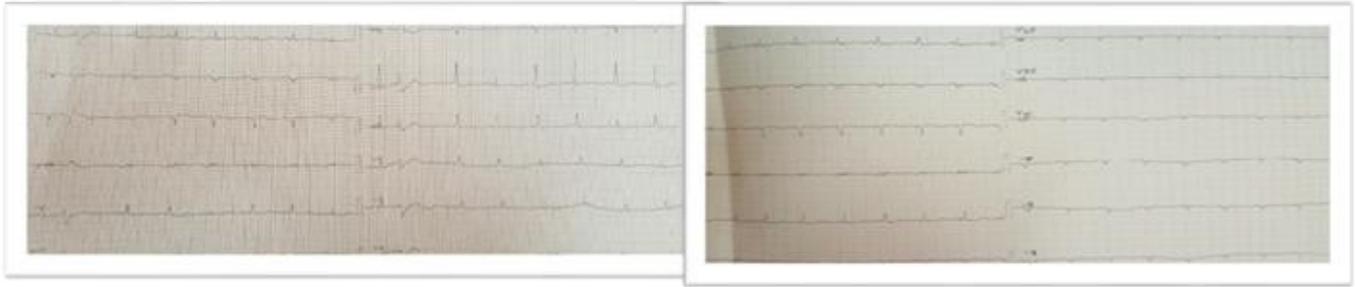
ECG (figure 1) revealed ST segment elevation and QS in the inferior leads associated to ST segment elevation in right area, Evolving three hours later towards paroxysmal high-degree atrio ventricular block. Elevated troponin level was reported.

TTE showed inferior, inferoseptal and inferolateral walls motion abnormalities, with reduced ejection fraction (40 %), and a systolic right ventricular dysfunction.

Few hours later hemodynamic instability occurs; patient was immediately admitted in the cardiac catheterization laboratory, with intravenous fluids and inotropic support.

Intra-aortic balloon pump counterpulsation has also been used to provide mechanical support. The coronarography revealed two tight stenosis of the first marginal and the first diagonal coronary artery. (figure2) The right coronary artery (RCA) was occluded proximally (figure 3).

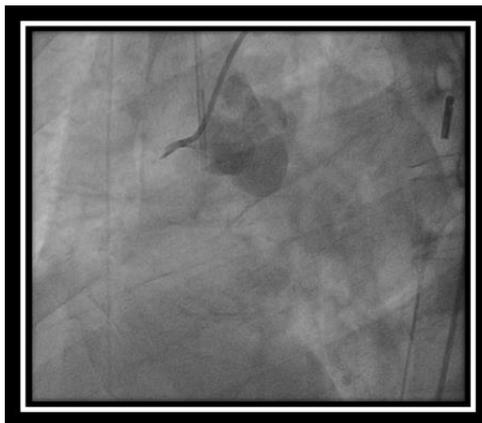
A successful percutaneous coronary intervention (PCI) was performed (figure4). ECG after PCI revealed a significant decrease in the injury current in the right-precordial and inferior leads; Echocardiogram on the following days revealed a moderate ischemic mitral regurgitation, while the RV and LV function were slightly improved; by the 20th hospital day, we attend complete stabilization, thus decision of discharge is made. Twelve month follow up was uneventful under optimal medical management.



**Fig-1: ECG showing QS + ST elevated in inferior with ST elevated in right lead**



**Fig-2: left coronary artery**



**Fig-3: occlusion of RCA**



**Fig-4: showing processes of PCI of RCA with successful result (TIMI 3)**

## DISCUSSION

Inferior myocardial infarction is usually considered to have a better prognosis in both short and long term evolution [1, 2]. However, it is known as a mysterious lead thus nearly 50% of patients suffering inferior infarction will have complications or

distinguishing features associated with an increased mortality that will substantially alter an otherwise favorable prognosis. The complications most likely to occur during acute inferior infarction - as defined electrocardiographically by ST segment elevation in leads II, III, and aVF- are: heart block, concomitant

precordial ST segment depression, and right ventricular infarction [1-3].

This later (RVMI), once diagnosed, requires specific hemodynamic and pharmacologic management, including the judicious use of volume expansion and inotropic support. Several forms of mechanical and surgical intervention are of therapeutic value in treating hemodynamic disturbances and recognized complications [3]. The management of RV infarction should be started with volume replacement and inotropic support if cardiogenic shock occurs. Early revascularization is also applied to RV infarction, in which the complete revascularization of the affected vessels, including the major RV branch, plays an important role in the recovery of RV function.

In our case, we opt for only culprit vessel revascularization since the left coronary artery area, even though, showed two significant stenosis, they were not suitable for neither PCI nor surgery. Furthermore, since thrombolysis in acute RVMI may be associated with a higher failure rate, PCI is considered the modality of choice [4,5]. Patients presenting with RVMI in the context of an inferior ST elevation myocardial infarction have a significantly higher short-term mortality and therefore should be considered high priority for reperfusion [5], however, with appropriate management, the prognosis for patients with right ventricular infarction is generally favorable later [3,4].

Furthermore, mitral ischemic regurgitation of our patient was moderate (stage B), which occurs medical management only [6].

## CONCLUSION

Our case showed the considerable contribution of revascularization as a judicious management and its positive impact on MI extended to RV prognosis. Thus, optimal management of patients with RVAMI includes immediate revascularization and intensive medical strategies. This first one is strongly recommended in AMI complicated by cardiogenic shock. Obviously the earlier reperfusion therapy is provided; the greater the benefit is, since “time is myocardium”

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