EJMO

DOI: 10.14744/ejmo.2017.66375
EJMO 2019;3(4):293-295

Case Report

Management of Early Postoperative ST Elevation Myocardial Infarction After Coronary Artery Bypass Surgery

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Abstract

Optimal management of early coronary bypass graft failure in patients with ST-elevation myocardial infarction (STEMI) is unclear. The data regarding the treatment of left anterior descending artery (LAD) stenosis located distally to its anastomosis with the left internal mammary artery (LIMA) or at the site of anastomosis are insufficient. Presented here is a description of the management of a case of severe stenosis at the site of LAD-LIMA anastomosis with STEMI.

Keywords: Coronary artery by-bas (CABG), Left internal mammary artery (LIMA), ST elevation myocardial infarction (STEMI).

Cite This Article: *Kucuk U. Management of Early Postoperative ST Elevation Myocardial Infarction After Coronary Artery Bypass Surgery. EJMO 2019;3(4):293-295.*

Information on management of early graft failure is unclear in patients with coronary artery bypass grafting with ST elevation myocardial infarction (STEMI). We have insufficient data regarding the treatment of left anterior descending artery (LAD) stenosis located distally to its anastomosis with the left internal mammary artery (LIMA) or at the site of anastomosis. Because, LIMA graft disease is extremely rare. The best treatment in this regard is not yet clear. Is it percutaneously or surgically. Which stent is the drug-coated stent (DES) or the bare metal stent (BMS) is not clear.[1, 2] We presented the management of a case of severe stenosis at the site of LAD-LIMA anastomosis with STEMI.

Case Report

43 years old male patient with a history of coronary artery disease. Coronary artery by-bas (CABG) two months ago. The patient has had a exertional dyspnea for the last one month and the medical follow-up decision has been taken to the patient. The patient is referred to the emergency department with chest pain and the ECG taken is diagnosed as STEMI.

Patient's family story is positive and no other risk factors. Physical examination revealed extensive crackles in the lungs. Patient was hypotensive and tachypnea. There were St segment depression on leads V1-6 and avr with St segment elevation (Fig. 1). Apex hypokinetic in transthoracic echocardiography. (EF: 45-50%). Troponin-I leves was 1.05 ug/L (normal range: <0.30 ug/L). The patient was taken to the emergency primary, as in pulmonary edema.

He was transferred to cardiac catheterization laboratory which revealed 99% stenosis at the LAD-LIMA anastomosis site (Fig. 2). We first predilated to the anastomotic region and despite the intravenous nitrate persistence of the lesion and we decided to use DES. The DES was successfully implanted (Fig. 3). Post-procedure St segment depression and St segment elevation were not observed (Fig. 4). After stent implantation chest pain disappeared and blood pressure started to rise.

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Submitted Date: September 09, 2017 **Accepted Date:** September 19, 2017 **Available Online Date:** November 13, 2019

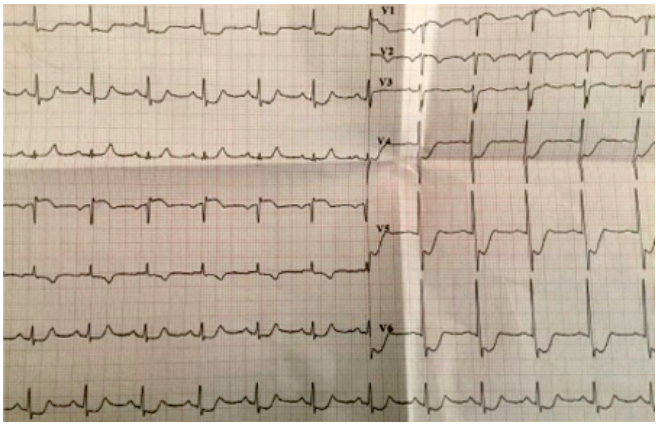

Figure 1. Pre-procedure ECG.

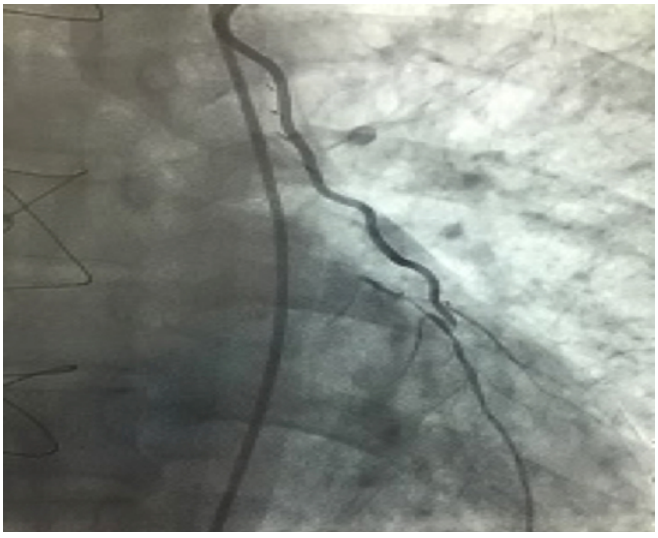

Figure 2. 99% stenosis of the left anterior descending (LAD) artery just below the site of its anastomosis with the internal mammary artery.

Discussion

Responsible for early postoperative myocardial ischemia after CABG surgery usually involves stenosis of the distal anastomotic site. It can be fibrointimal hyperplasia, or suboptimal anastomotic technique.

Stenosis is expected in the first 1 month, especially around 8-14% in safen grafts, but not in IMA artery. IMA holds 85-90% patent for long term.[3] In patients who stenosis uncommon within the first 3 months. According to current information, the data on the treatment of lesions at the LAD and LIMA anastomosis region are inadequate. Lesions may be treated percutaneously or surgically, but there is no clear advantage in both. Which stent is DES or the BMS is not clear. We decided to use DES.

It does not show clinical superiority. But it is associated with late thrombosis.[4, 5]

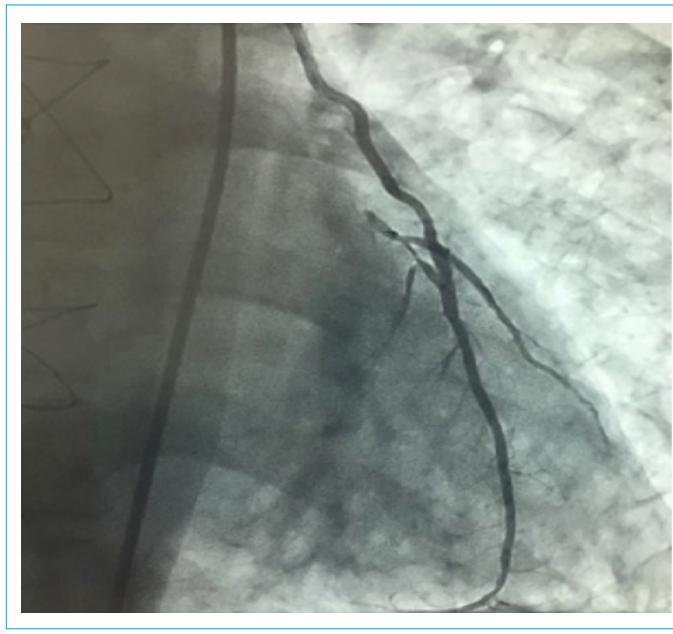

Figure 3. Left anterior descending artery after angioplasty with DES implantation.

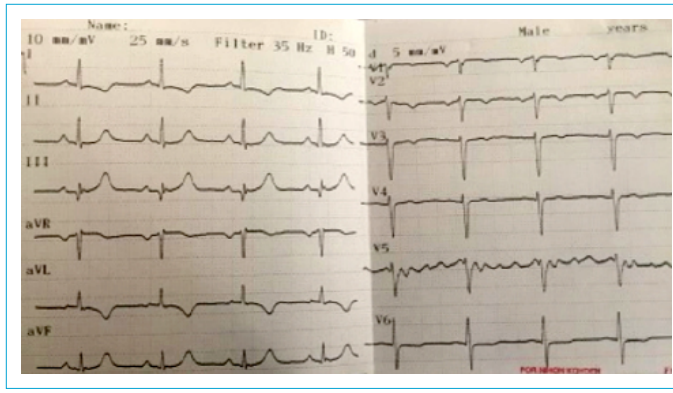

Figure 4. Post-procedure ECG.

When we look at the literature, there are patients in the STEMI during the acute period due to technical problems in very old cases and some patients have been managed with redo-cabg. Our case is a rare case of LIMA-LAD anastomosis in the early period, and it is one of the rare cases of Percutaneous coronary intervention (PCI) management.

Disclosures

Informed consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

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