

Acute ST Elevation Inferior Wall MI Caused by LAD Thrombus: A Rare Association

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Abstract

We present a case report of inferior wall myocardial infarction. ECG was suggestive of RCA involvement, but coronary angiography revealed large thrombus burden in mid left anterior descending artery [LAD] and distal LAD cut off. He underwent primary cutaneous intervention [PCI] with thrombosuction of LAD and intracoronary reopro bolus was given. Patients chest pain settled and there was complete resolution of ST elevation in inferior leads. This is a very rare association of ST elevation in inferior leads with thrombus in LAD. This case is unique because there was no wrapped around LAD or LAD giving collaterals to RCA.

Keywords: Primary Cutaneous Intervention [PCI]; Left Anterior Descending Artery [LAD]; ST Elevation

Introduction

Acute ST elevation in inferior leads suggests occlusion of right coronary artery or sometimes left circumflex artery. Herein we present a case of acute inferior wall myocardial infarction with normal right and left circumflex artery associated with large thrombus burden in mid LAD. Inferior ST segment elevation may occur in distal occlusion of wrapped around LAD [1].

Case Report

A 24 yrs old male presented to our emergency with severe retrosternal chest pain of 2 hrs duration with sweating. His blood pressure was 130/80, pulse 110/min, spo₂ was 98%. His ECG revealed ST segment elevation in inferior leads [elevation in L111 > L11] and reciprocal ST depression in AVL suggestive of right coronary involvement (Figure 1).

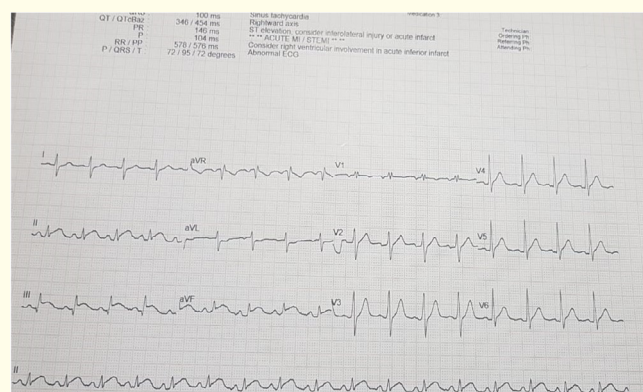


Figure 1: ECG showing ST elevation in inferior leads.

Patient was obese weighing 120 kg, smoker, known case of hypothyroidism. His echo revealed no regional wall motion abnormality and EF 60%. He was loaded with ticagleror 180 mg and ecosprin 150 mg. He was taken for emergent coronary angiography which revealed normal right and left circumflex coronary artery and LAD showed large thrombus burden in mid LAD and distal LAD was cut off (Figure 2-4).



Figure 2: Large thrombus in mid lad [ap caudal view].



Figure 3: Thrombus in mid lad [rao cranial view].

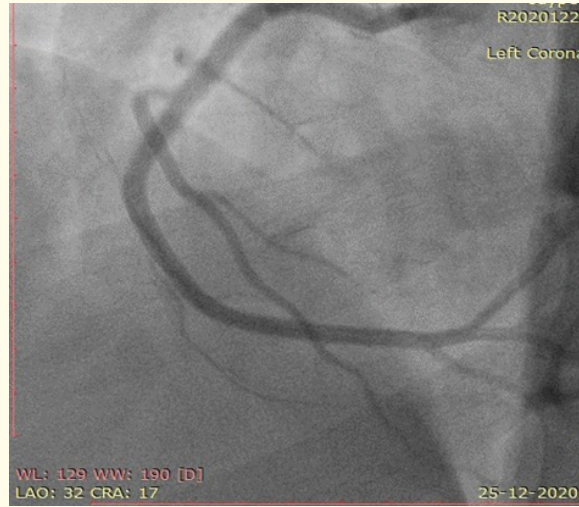


Figure 4: Normal right coronary artery.

In view of ongoing chest pain and ECG changes he was taken up for angioplasty and injection heparin 7000 units was given. LMCA was hooked with 7f XB 3.5 guiding catheter and lesion was crossed with sion blue wire and thrombosuction was done with 6 and 7f thrombuster catheter and multiple passes were made (Figure 5-8).



Figure 5: 7f XB guiding catheter.

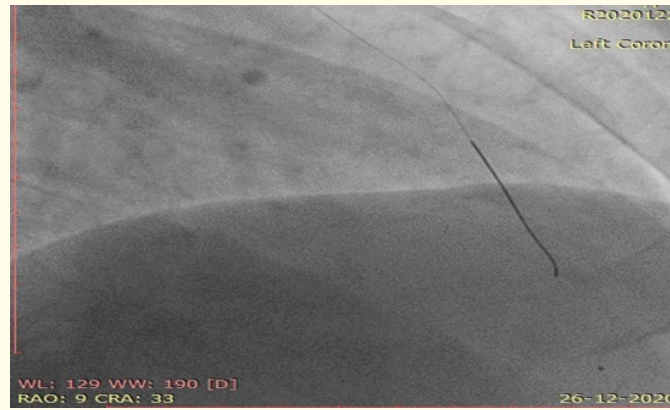


Figure 6: sion blue guide wire.

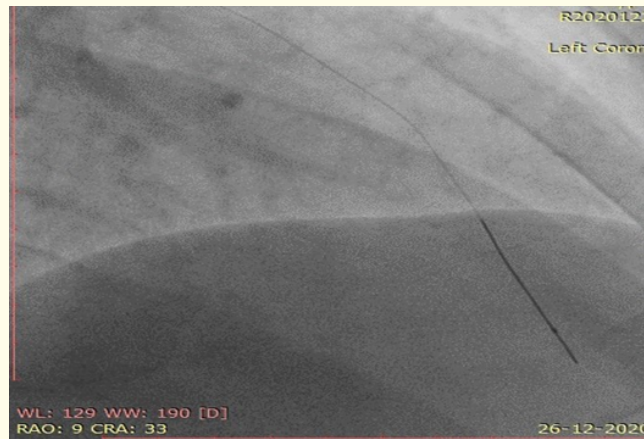


Figure 7: Thrombosuction with 7f thrombuster catheter.

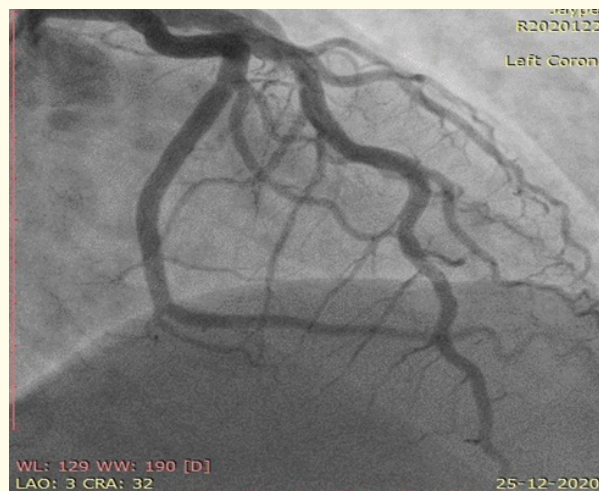


Figure 8: Final result TIMI 3 flow minimal thrombus burden.

Large chunk of thrombus were retrieved (Figure 9).

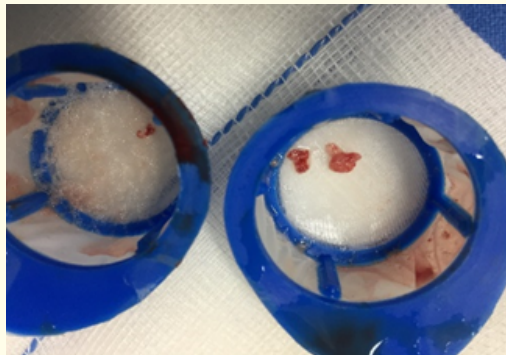


Figure 9: Two chunks of thrombus.

Intracoronary reopro bolus was given. Subsequent shots revealed very minimal thrombus in lad and flow was restored in distal LAD and patients chest pain resolved and patient was shifted to intensive care unit on heparin infusion. Post procedure ECG revealed complete normalisation of ST changes in inferior leads (Figure 10).

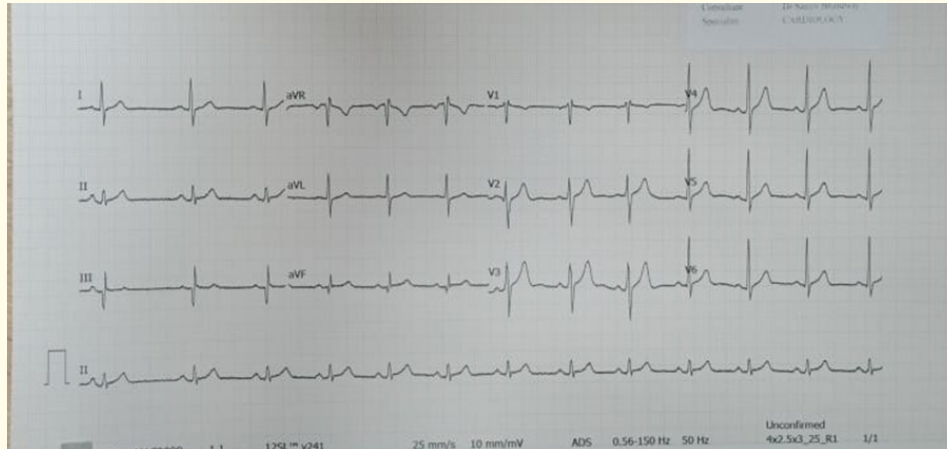


Figure 10: Resolution of ECG changes.

His blood biochemistry revealed raised LDL cholesterol and triglycerides and his serum troponin I was raised. Patient was switched over to LMWH and high dose of statins and patient had an uneventful recovery and he was advised for check coronary angiography after 48 hrs but he was not willing and he was discharged.

Discussion

Acute inferior wall myocardial infarction is usually caused by RCA occlusion and sometimes LCX. We report a case of ST segment elevation in inferior leads with thrombus in mid LAD and normal RCA and left circumflex artery. Inferior ST segment elevation in acute anterior wall myocardial infarction due to LAD occlusion is uncommon [2,3]. Inferior ST segment elevations may occur in an occlusion of a wrapped around LAD. ST segment elevation in inferior leads has been described in distal LAD occlusion [4]. Embolism of distal or collateral branches may cause ST elevation in inferior leads. Another cause of ST segment elevation in inferior leads is stent thrombosis in proximal LAD. The extracellular potential remains negative in anterior wall myocardial infarction and the extracellular potential of inferior wall remains positive and this could be the reason for ST elevation in inferior leads as the vector heads from the negative extracellular potential to positive extracellular potential [5]. A similar case of ST segment elevation in inferior leads has been reported with LAD stent thrombosis [6].

Conclusion

We present a rare case of ST segment elevation inferior wall MI with normal RCA and LCX and large thrombus burden in mid LAD. It is possible that some thrombus had embolised to distal LAD causing ST elevation in inferior leads after recanalisation of distal LAD and removal of thrombus the ST changes resolved.

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