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Journal of Cardiovascular Medicine and Cardiology
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Medical Group

Journal of Cardiovascular Medicine and Cardiology

ISSN: 2455-2976 DOI CC By

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Dates: Received: 05 May, 2017; **Accepted:** 15 June, 2017; **Published:** 16 June, 2017

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Case Report

A rare case of Contusio Cordis: Fist fight leading to an Acute Myocardial Infarction due to Left Anterior Descending artery dissection

Introduction

Cardiac lesions resulting from blunt chest injuries can present as cardiac contusion; ventricular free wall rupture; ventricular septal rupture; and valvular lesion [1]. But acute Myocardial infarction (MI) from contusio cordis is a very rare complication. Here we present a case of fist punch to the chest leading to distal Left Anterior Descending (LAD) artery dissection causing acute MI.

Case

A 28 year old Hispanic male with history of alcohol abuse presented to our hospital with chest pain that started 7 hours prior to arrival after he sustained a fist punch to the chest during an altercation at a bar. It was associated with shortness of breath and palpitations. He tried ibuprofen with no relief. Vital signs were stable. Physical exam revealed ecchymosis of the mid sternal region with chest wall tenderness. ECG showed normal sinus rhythm and ST segment elevations in anterior and inferior leads (Figure 1). Troponin-I was elevated at 0.32 ng/ml. 2D ECHO showed normal left ventricular ejection fraction with no regional wall motion abnormality, no effusion or acute valvular pathology. Patient's chest pain improved with sublingual nitroglycerine; however, 2nd set of Troponin-I was 14.12 ng/ml, so he underwent coronary angiography that showed dissection of distal LAD with thrombus (Figure 2). Owning to small caliber vessel, patient was managed conservatively with aspirin, clopidogrel, atorvastatin and eptifibatide. Heparin drip, which was started prior to angiography, was discontinued and eptifibatide was given for 18hrs. He made good recovery and was discharged on aspirin and clopidogrel with a follow up in 6 weeks.

Discussion

Acute MI is rare in young adults but must be kept in the differential in the setting of blunt chest trauma as well as contact sports. Very rarely, later can cause coronary dissection and suspected mechanism is shearing of arterial wall due to dramatic acceleration/deceleration forces leading to intimal tear [2]. Diagnosis is confounded due to chest wall tenderness and myocardial contusion, which can also present with ST elevations on ECG; hence, a high index of suspicion is needed to avoid delay in diagnosis and instituting appropriate therapy. Of note, rising troponin is an important clue that can differentiate coronary dissection from myocardial contusion. Treatment of choice for dissection is conservative, esp. if patient is hemodynamically stable with no ongoing ischemia [3]. In our patient, distal LAD was involved and thrombolysis in myocardial infarction (TIMI) flow was >2, so he was managed conservatively.

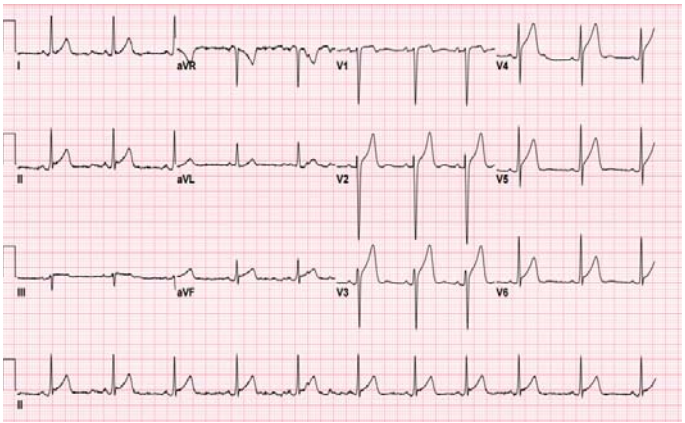

Figure 1: Electrocardiogram showing normal sinus rhythm with ST segment elevations in anterior and inferior leads.

Citation: Patel H, Sundermurthy Y, Bhutani S, Bikkina M (2017) A rare case of Contusio Cordis: Fist fight leading to an Acute Myocardial Infarction due to Left Anterior Descending artery dissection. J Cardiovasc Med Cardiol 4(2): 027-028. DOI: http://doi.org/10.17352/2455-2976.000045

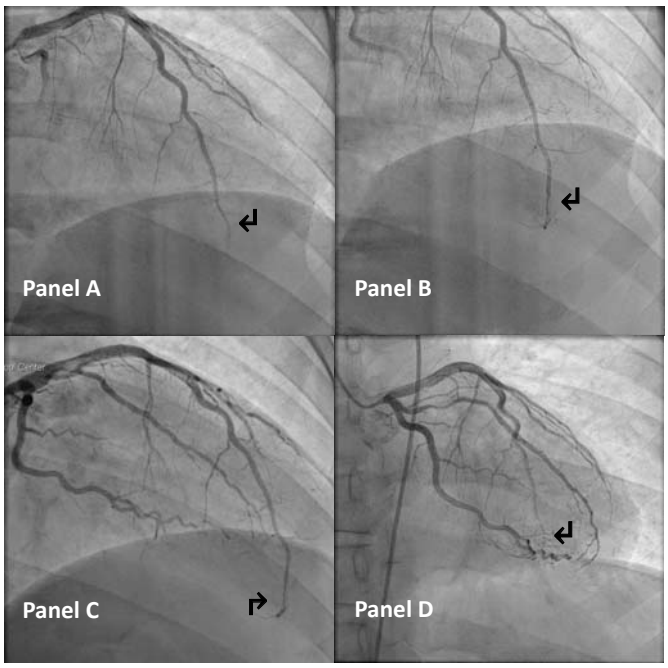

Figure 2: Coronary angiography of left coronary system. Panel A – left cranial view showing earlier frame before distal LAD gets completely filled. Panel B – Same left cranial view showing later frame with filling defect suggestive of dissection with thrombus in distal LAD (black arrow). Panel C – Right cranial view again showing a filling defect in distal LAD (black arrow). Panel D – Right caudal view showing earlier frame before distal LAD gets completely filled. LAD = Left Anterior Descending Artery.

Conclusion

Traumatic dissection of LAD artery should always be in the differential in a patient with chest pain after blunt chest trauma, as it is more vulnerable likely due to its anterior location.

Supplementary videos showing angiography of left coronary system:

Video 1 – Right cranial view

Video 2 – Left cranial view

Video 3 – Right caudal view

Download Videos

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