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CASE REPORT
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CORONARY ARTERY SPASM DURING CORONARY ANGIOGRAPHY LEADING TO FAULTY DECISION

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ABSTRACT:

Coronary artery spasm defined as constriction of coronary artery segment either focal or diffuse, may be single or multiple. Which is reversible and cause myocardial ischemia by restricting coronary blood flow and may lead to thrombus formation. We present a case of coronary artery spasm that lead to CABG and was discovered after CABG.

KEY WORDS: *CABG, Spasm, Intracoronary nitro glycerine*

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INTRODUCTION:

Coronary artery spasm is a well-known entity. During angiography we can encounter such spasms which are usually proximal and focal.[1] It can involve a focal or long segment of one artery and may be relieved during the procedure, thus preventing us from unnecessary intervention.[2]

CASE REPORT:

A 65-years-old obese female, having hypertension, for which she was taking bisoprolol 2.5mg, and with positive family history of MI, presented to private clinic with sudden onset typical severe chest pain that lasted for 20 minutes radiating towards jaw associated with cold sweating. On relevant physical examination she was obese with pulse 64/min, respiratory rate 18/min, BP 150/80 mmHg, Temperature 98^{0}F and O^2 saturation 98%. Systemic examination was unremarkable.

Her troponin I was negative ECG showed T wave inversion in I and aVL as showing in fig. 1 Patient was loaded with asprin 300mg, clopidogrel 300mg, heparin Icc IV, sublingual Angised and capoten 25mg. Coronary angiography was performed on next day which showed tight distal stenosis of LMS, tight ostio-proximal and mid stenosis of LAD, tight proximal stenosis of good size D1 and long segment of moderate disease in LCX and tight ostio-proximal disease of fair size RI. (fig-1) RCA was normal and dominant. Her Echo showed mild concentric LVH with grade I diastolic dysfunction and EF 65% with no segmental wall motion abnormalities.

Patient was advised CABG for her disease. Her CABG was done with grafts of LIMA to LAD, SVG to D1 and RI, in private hospital which was uneventful. After 2 years of CABG, patient again complaint of similar sort of typical severe chest pain which was relieved by angised and for which her CT angio and graft study was done. CT coronary angio and

graft study showed:

Left main stem was normal bifurcating vessel. Left anterior descending artery was normal in proximal, mid and distal segments while grafted

Figure 1

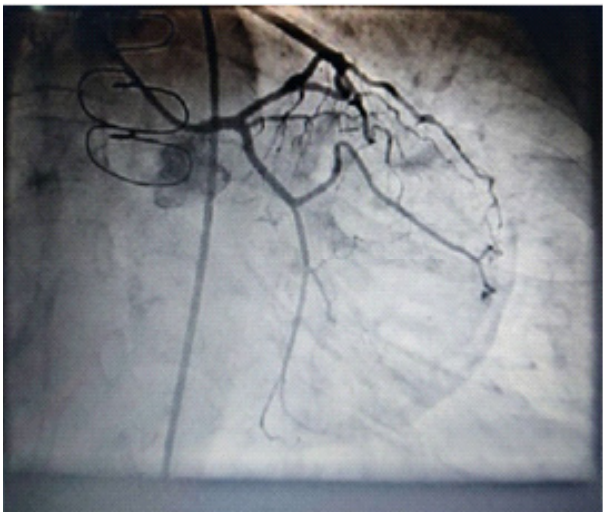

Figure 2

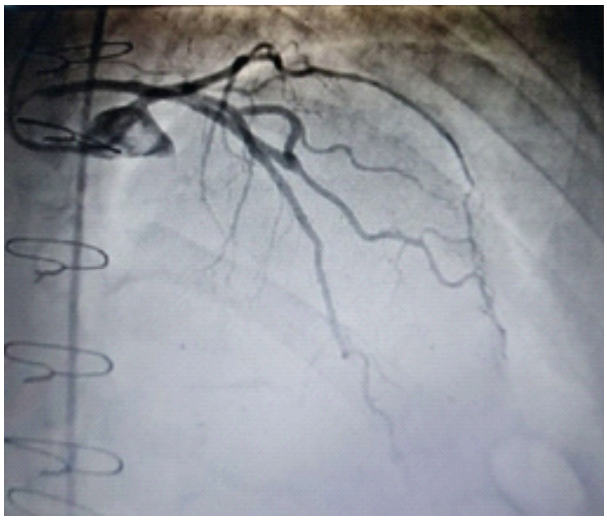

Figure 3

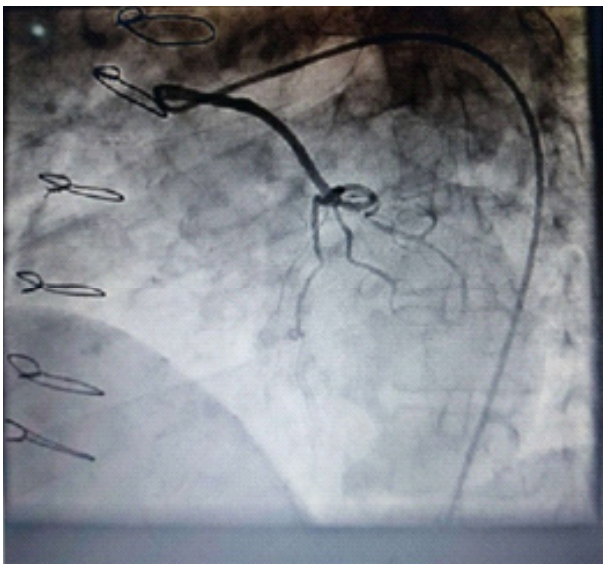

Figure 4

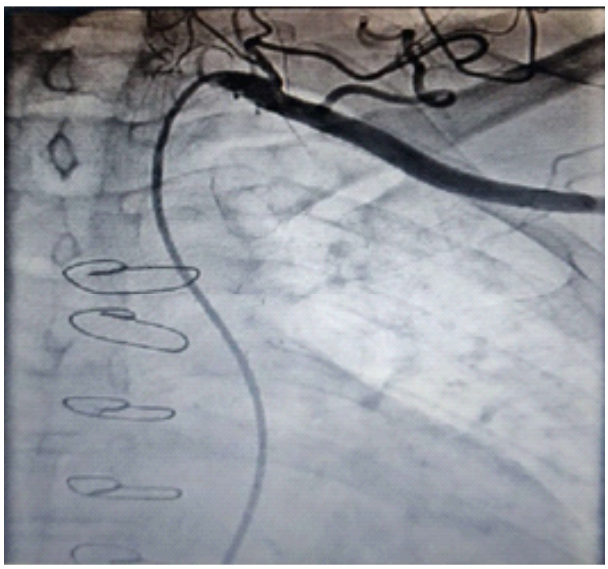

Figure 5

diagonal branch showed tight mid stenosis after the site of graft insertion. Native left circumflex artery was normal. Native right coronary artery was dominant and normal. Small caliber left internal mammary artery showed total proximal occlusion. (Fig 2-5) Left ventricle angiogram showed good systolic function with 57% ejection fraction.

After that she was advised conventional invasive angiography and graft study which showed normal coronaries and TIMI III flow into distal LAD (fig.3) and patent SVG graft. LIMA could not be engaged and was not even visible in non-selective views. So, the disease which was present in her first angiogram was not evident in her second (post CABG) angiogram and it was speculated that patient had coronary artery spasm before for which she was managed by CABG. As this patient has no disease in native coronaries therefore, she is advised medical management for coronary artery spasm.

DISCUSSION:

The severity of vasoconstriction in spasm ranges from mild to severe or even total occlusion. Coronary artery spasm is common in about 50 years old patients while it decreases as age increases. [3] Spasm is frequently seen in smoker females. 4 The spasm itself is not always severe or even painful. Sometimes, it can lead to serious problems, such as heart attack or even death.[5] Smoking is one of the risk factor of the heart disease.[6]

Other potential causes or triggers of a coronary artery spasm are chronic use of beta blockers. [7] Long duration of cold exposure and stress.[8] Excessive use of cocaine and alcohol.[9] And Magnesium deficiency in an individual.[10] To treat the coronary artery spasm, vasodilating drugs like nitrates and calcium channel blockers are very useful. According to some trials where relationship of thrombus formation and coronary spasm were focused, observed that acute myocardial infarction can be occurred due to the coronary artery spasm.[4]

CONCLUSION:

Coronary artery spasm can lead to acute coronary syndrome i.e. STEMI and angina, and can be acutely treated with nitrates. Long term management includes oral nitrates and calcium channel blockers along with other routine medications. During invasive coronary angiography intracoronary nitrates should be given to rule out coronary artery spasm.

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