DOBUTAMINE INDUCED VASOSPAM MIMICKING ACUTE INFERIOR STEMI

Poster Contributions
Poster Hall B1
Sunday, March 15, 2015, 9:45 a.m.-10:30 a.m.

Session Title: FIT Clinical Decision Making: Ischemic Heart Disease
Abstract Category: Standard ECG, Stress Testing
Presentation Number: 1180-152

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Background: Dobutamine Stress Echocardiography [DSE] has been used for both the diagnosis and prognostication of Coronary Artery Disease. Dobutamine increases heart rate, blood pressure and cardiac output and in the setting of physiologically significant organic coronary artery stenosis causes a supply-demand mismatch causing wall motion abnormalities. ST elevation in the setting of an exercise treadmill test or a DSE suggests critical coronary obstruction and often multivessel coronary disease. We present a patient with marked ST elevation noted during a dobutamine stress test.

Case: A 58-year old woman presented with an episode of chest pain radiating to the jaw associated with shortness of breath, diaphoresis and one episode of nausea and vomiting. She has a past medical history significant for hypertension and smoking. Physical examination was not significant for any major abnormalities. Initial EKG and cardiac enzymes were negative for ischemic changes and was subsequently referred for DSE.

Decision Making: During her DSE she was administered 30µg of dobutamine and 1mg of atropine to achieve target heart rate. She developed mid-sternal chest pain at peak dose. Her EKG showed 7mm ST elevation in inferior and inferolateral leads with reciprocal changes. Echocardiogram showed basal inferior wall hypokinesis and all other segments showed increased contractility. Chest pain resolved after administration of nitroglycerine, morphine and metoprolol and ST elevation resolved after 7 minutes. Emergent coronary angiogram revealed only minimal luminal irregularities of the coronary arteries. She was placed on medical management for vasospastic angina with significant improvement of her symptoms.

Conclusion: This case illustrates the importance of recognizing that ST elevation during a DSE does not always mean critical obstructive CAD. Like in our case, EKG and echocardiographic abnormalities with DSE can be the result of severe vasospasm causing ischemia. Endothelial dysfunction has been proposed as a mechanism for this vasospastic effect of dobutamine.