Spontaneous coronary artery dissection in a young male

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A 38 year old male with no past medical history presented to our emergency department (ER) with sudden onset, substernal chest pain. He denied any associated complaints of shortness of breath, dizziness or palpitations and had no known cardiac risk factors. On examination, patient’s vital signs were stable. The respiratory and the cardiovascular exams were unremarkable. The electrocardiogram done in the ER showed ST segment elevations in leads II, III and aVF. The lab work was significant for elevated cardiac enzymes (CK-MB - 69.9 ng/ml, Troponin I - 27.23 ng/ml) with a normal complete blood count and serum chemistry.

Patient was rushed for an urgent cardiac catheterization which showed no obstructive coronary artery disease but revealed a spiral dissection in the mid to distal second obtuse marginal branch of the left circumflex artery (Figure 1,2).

Because of the spiral nature of the dissection, decision was made to manage the patient medically and no intervention was done. He was admitted to the Cardiac Intensive Care Unit for close monitoring and started on aspirin, beta-blocker and intravenous heparin. The remaining course of his stay was uneventful and a repeat cardiac catheterization done few days later showed no extension of the dissection (Figure 3). The patient was discharged in a stable condition and continued to do well at one year follow-up.

Spontaneous coronary artery dissection is defined as a hemorrhagic separation of the media of the coronary artery with creation of a false lumen and was first described in 1931. It is an extremely rare clinical entity with an estimated incidence of around 0.1 - 0.2% in patients undergoing cardiac catheterization for acute coronary syndrome. It usually affects middle-aged females and is often associated with pregnancy, use of oral contraceptives, cocaine abuse, hypertension and connective tissue disorders. The diagnosis of coronary artery dissection is established by the presence of a classic ‘intimal flap’ with false lumen on coronary angiography. The subsequent expansion of this false lumen by hematoma formation or clot accumulation can compress the true lumen leading to myocardial ischemia or infarction.

The management of spontaneous coronary artery dissection depends upon the clinical presentation, site and extent of the dissection and territory supplied by the culprit vessel. Coronary revascularization by Percutaneous Coronary Intervention (PCI) or Coronary Artery Bypass Grafting (CABG) is usually performed when dissection involves the left main coronary artery or proximal or mid left anterior descending artery.

Statement of ethical publishing
The authors state that they abide by the statement of ethical publishing of the International Cardiovascular Forum Journal.

Figures 1-3

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