

Case report

Postpartum spontaneous coronary artery dissection presenting as acute myocardial infarction

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Abstract: A 35 year old female with no significant past medical history 8 days status post uneventful fourth cesarean section presented with complaints of acute onset of substernal chest pain which woke her up from sleep at 4 am. Electrocardiogram showed ST segment elevation in V2 –V6 with elevated troponin greater than 40. Cardiac catheterization showed spontaneous spiral dissection of the proximal to distal left anterior descending artery. After having cardiac thoracic surgeon as back up, the decision was made to intervene percutaneously on the dissection with drug eluting stents in an overlapping fashion from distal to proximal. Spontaneous coronary artery dissection (SCAD) is an extremely rare cause of myocardial infarction. Even though percutaneous intervention was performed in this case on the LAD lesion, due to large area at risk and elevated biomarkers. It is controversial as to the whether or not stenting versus medical management should be pursued in these cases, in which there is connective tissue fragility, etc. because there is poor evidence base treatment for this condition (*J clin invasive cardiol* 2016;3:9-11). **Key Words:** coronary artery dissection; postpartum; myocardial infarction; coronary angioplasty

Case Presentation

A 35 year old female with no significant past medical history 8 days status post uneventful fourth cesarean section presented with complaints of acute onset of substernal chest pain which woke her up from sleep at 4 am. Electrocardiogram showed ST segment elevation in V2 –V6 with elevated troponin greater than 40. Cardiac catheterization showed spontaneous spiral dissection of the proximal to distal left anterior descending artery with left ventricular end diastolic pressure of 37mm Hg (Figure 1-2).

After having cardiac thoracic surgeon as back up, the decision was made to intervene percutaneously on the dissection with drug eluting stents in an overlapping fashion from distal to proximal (Figure 3). Of note, patient urine drug screen was positive for cannabinoids

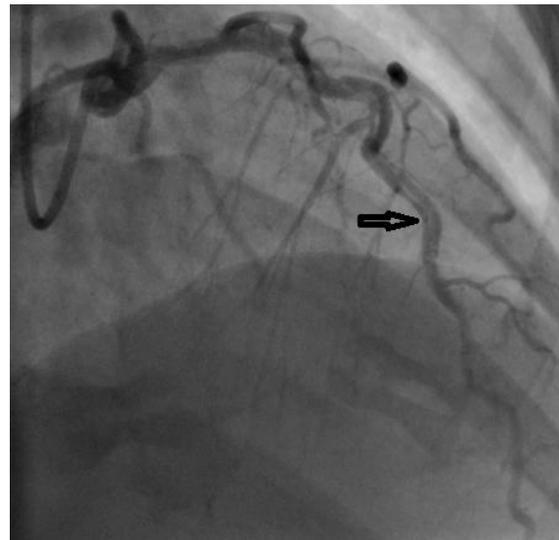


Figure 1: coronary angiogram in right anterior oblique and cranial projection, demonstrates dissection of the left anterior descending artery.

and she admitted smoking marijuana following discharge from hospital on her previous admission. Post-discharge treatment included dual antiplatelet therapy and advice to quit illicit drug use.



Figure 2: coronary angiogram in anterior posterior and cranial projection, demonstrates dissection of the left anterior descending artery.

Discussion

Spontaneous coronary artery dissection (SCAD) is an extremely rare cause of myocardial infarction. The first known report of successful coronary stenting of SCAD was performed in 1997.¹ SCAD occurs most commonly in the third trimester of pregnancy and in the early postpartum period. The dissections involve the left main and left anterior descending arteries in about 80% of cases. The overall mortality is more than 50% at presentation. In contrast to other causes of myocardial infarction, coronary artery dissection occurs in normal coronary arteries. It is worth stressing that thrombolytic treatment is relatively contraindicated in this condition, as it may cause propagation of the dissection and expansion of the intramural hematoma.²

The etiology of SCAD is unknown. The high incidence in pregnancy and puerperium indicate

hormonal changes and hemodynamic stress as possible factors. Heefner hypothesized a two-step process for the pathogenesis of SCAD. Firstly, the hemodynamic stress of pregnancy leads to an initial intimal rupture. This is followed by a delayed bleeding in the tunica media caused by the clotting changes that occur during the puerperium.³ SCAD is associated with Marfan's Syndrome, Ehlers-Danlos Disease, female hormonal treatments as oral contraceptives; although in some cases no predictor could be identified.⁴

Conclusion

Even though percutaneous intervention was performed in this case on the LAD lesion, due to large area at risk and elevated biomarkers. It is controversial as to the whether or not stenting versus medical management should be pursued in these cases, in which there is connective tissue fragility, etc. because there is poor evidence base treatment for this condition. Further research and evidence based management into SCAD yet to be defined.

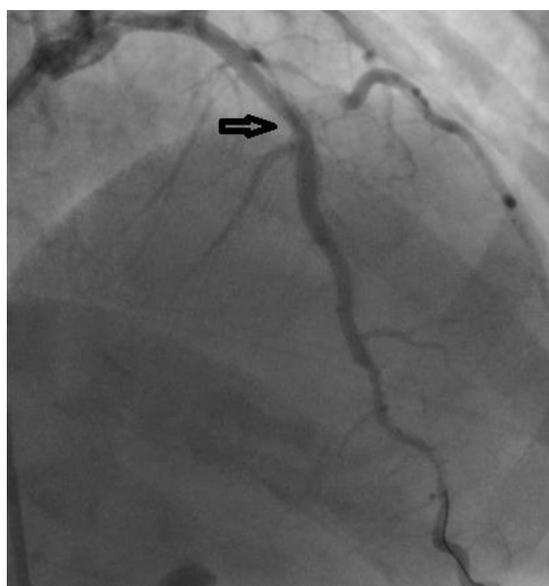


Figure 3: successful treatment of left anterior descending dissection status post stent placement.

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