



PREGNANCY RELATED SPONTANEOUS CORONARY ARTERY DISSECTION: A MANAGEMENT DILEMA

Kashif Zafar^a, Muhammad Sohail Yousaf^{a*}, Khawaja Ehtesham Ahmad^b

ABSTRACT

A 30 year old Gravida 1 and Para 1, ten days after normal vaginal delivery was brought into emergency department with complaint of severe central chest pain since one day. ECG showed deep symmetrical T wave inversions in precordial leads. Subsequent electrocardiogram showed dynamic ST-T changes. Angiography showed mid LAD coronary artery dissection with no antegrade flow. By the time angio was done, patient's chest pain was subsided completely, so it was decided to manage conservatively.

BACKGROUND:

Cardiac disease is the second cause of death in Pakistan and single most important cause of death in UK¹. Causes and management of MI in pregnant and peripartum woman distinguish from that in adult males and subsequently the management also. It is estimated that 1 in 16 000 pregnancies is complicated by acute myocardial infarctions in the United States; up to one fourth of these are due to pregnancy related spontaneous coronary artery dissection. So it is pertinent to know the cause and device management accordingly.²

CASE PRESENTATION:

A 30 year old Gravida 1 and Para 1, ten days after normal vaginal delivery suffered central chest pain since one day and was admitted in emergency department ECG showed symmetrical deep T wave inversions and dynamic ST-T changes. Echocardiography showed severe anteroapical hypokinesia and 45% ejection fraction. Initial troponin T was three times raised. Cardiac cath team was informed instantaneously and patient was shifted to cath lab where coronary angiography done through transfemoral approach. Angiography showed mid LAD coronary artery dissection with no antegrade flow. By the time angio was done, patient's chest pain was subsided completely. It was difficult to wire blindly in totally occluded mid to distal vessel and major branches were also taking origin before occluded segment so it was decided to manage conservatively.

DISCUSSION:

Spontaneous coronary artery dissection (SCAD)

^aPunjab Institute of Cardiology,
Lahore-Pakistan.

Wazirabad Institute of Cardiology,
Wazirabad

* Corresponding author:
Email:sohailousaf38@yahoo.com

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is an event which is not usual and commonly seen during pregnancy or peripartum period. Because of its rarity, the literature describing this condition is confined to few cases and no clear consensus exists on the optimal treatment strategy for these patients. Its occurrence poses significant risks for the mother and fetus. While short-term mortality is high (38% compared with 5.1% for all-cause AMI), survival through the initial presentation predicts an excellent long-term outcome³. In pregnancy dissection accounts for 27% of all MI cases⁴ and, coupled with demonstration of multivessel involvement in one-quarter of cases, suggesting a pathological role for pregnancy. However, even in contemporary practice, it might still be appropriate to treat the patients medically, particularly those who are stable, and have demonstrated limited dissection on angiography. In postpartum patients, antiplatelet therapy with acetylsalicylic acid and clopidogrel (to reduce thrombus formation), together with ACE inhibitors (in the presence of LV dysfunction) and beta-blockers (aimed at reducing shear stress), is desirable. Caution is advised for lactating mothers in whom clopidogrel is not recommended. In pregnant woman ACE inhibitors are contraindicated (category C), although low-dose acetylsalicylic acid in the second and third trimesters, and selective beta-blockers are considered safe. Spontaneous resolution of dissection has been reported in five of 10 medically treated cases of pregnancy-related SCAD in whom angiographic follow-up was available (mean 90 days, range 13 to 293 days)⁵. The use of thrombolytics in this population, however, remains controversial, and there is anecdotal evidence to suggest that it may lead to a worse outcome, possibly by extension of hemorrhage into the dissection plane. PCI is the treatment of choice in patients with ongoing signs of ischemia and single-vessel disease, or in those in whom a

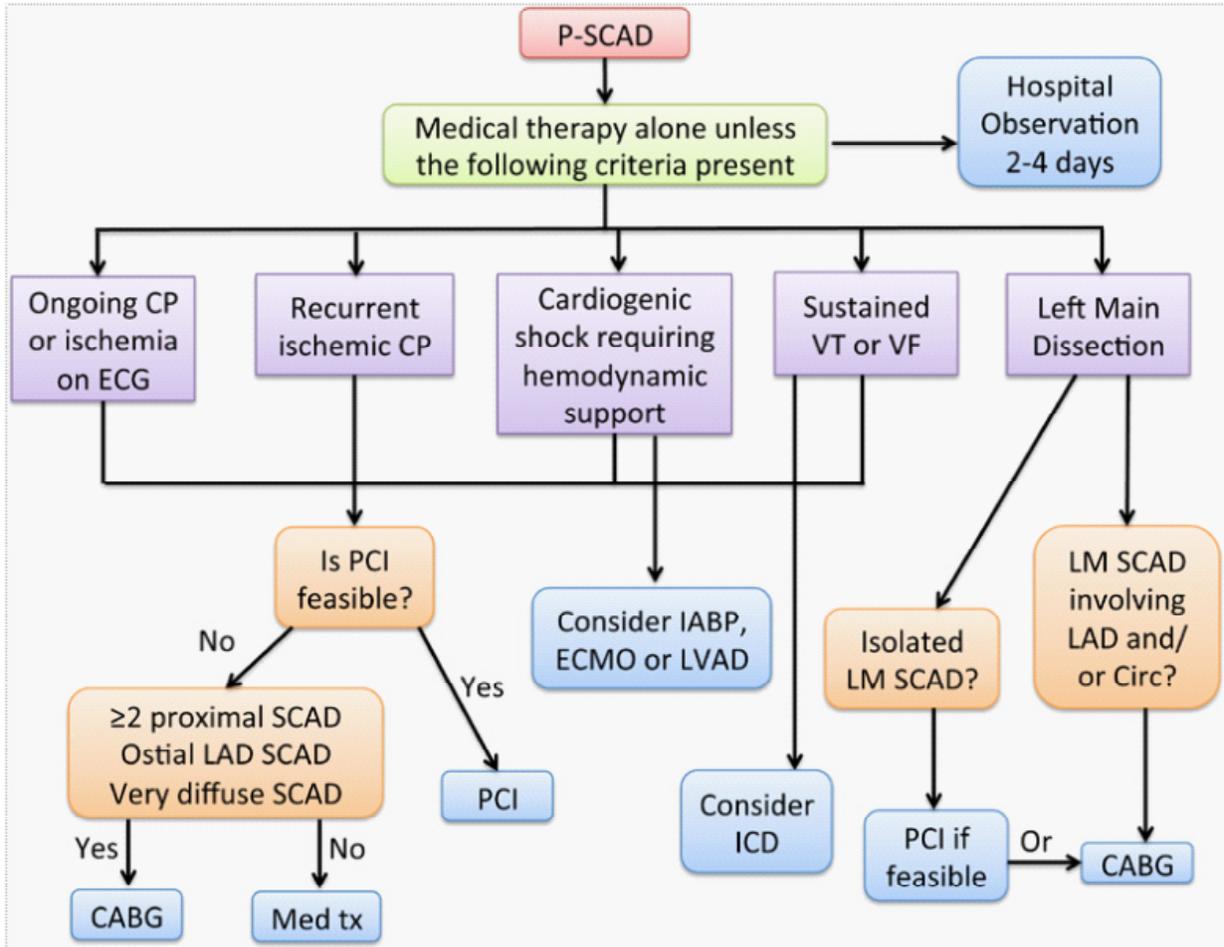


Figure-1: Showing management of Spontaneous coronary artery dissection (SCAD)

large, viable myocardial territory is at risk, such as proximal LAD disease. It can also be considered in multivessel dissection with hemodynamic compromise, but we would advocate discussion with cardiothoracic surgical colleagues before pursuing this strategy. Heparin does not cross the placenta and can be used safely. The safety of glycoprotein IIb/IIIa inhibitor is unknown and indications for their use is based on isolated case reports only (risk category B: eptifibatide, tirofiban; risk category C: abciximab). A potential concern is the possibility of wiring a false lumen, although steps can be taken to avoid this such as the use of IVUS to guide wire placement. (Figure-1)

CONCLUSION:

Pregnancy-related SCAD is increasingly being recognized as an important cause of acute coronary syndromes in women with few or no conventional risk factors for atherosclerosis. Clinically, it is associated with significant morbidity and mortality, and a high level of suspicion should be maintained to ensure timely and appropriate investigation and management. Urgent angiography is crucial to establish the diagnosis, but in cases where a dissection is not evident and the patient does not have obvious atherosclerotic disease, IVUS may prove useful. No guidelines have been established regarding the management of SCAD.



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