Peripartal STEMI

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- A 27 years old female patient, housewife, non-smoker.
- Not known to be diabetic or HTN.
- No previous cardiac problems.
- Married, has 4 children.
- **Delivery by C-section** from 13 days.
- No previous contraception or hormonal therapy.

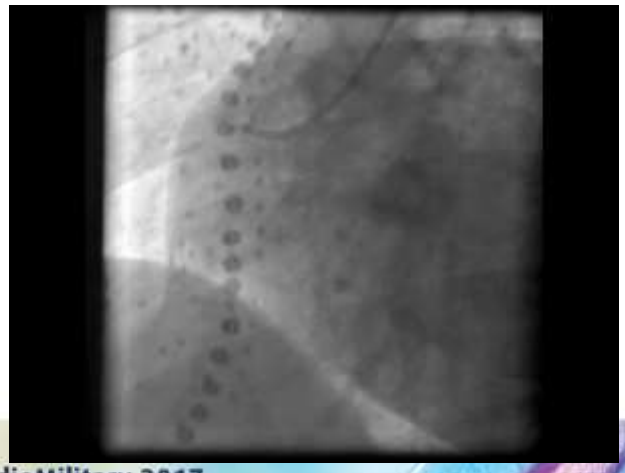
- **Complaint:** Typical chest pain 2 hrs.
- **Examination:**
  - **Pulse:** 110bpm, regular, average, equal on both sides, intact peripheral pulsations.
  - **BP:** 110/70 mmHg
  - **Chest and Heart:** CF
  - **Abdomen-pelvis:** Incision of C-section.

- **ECG:**
  - ↑ ST in I, AVL, V5-V6
  - ↓ ST in II, III, AVF and V1-V4.

- **Echocardiography**
  - Bed-side echocardiographic assessment showed hypokinesia of apex with good overall LV systolic function, EF= 60%.

ESC 2011

Recommendations	Class[a]	Level[b]
ECG and troponin levels should be performed in the case of chest pain in a pregnant woman.	I	C
Coronary angioplasty is the preferred reperfusion therapy for STEMI during pregnancy.	I	C
A conservative management should be considered for non ST-elevation ACS without risk criteria.	IIa	C
An invasive management should be considered for non ST-elevation ACS with risk criteria (including NSTEMI).	IIa	C



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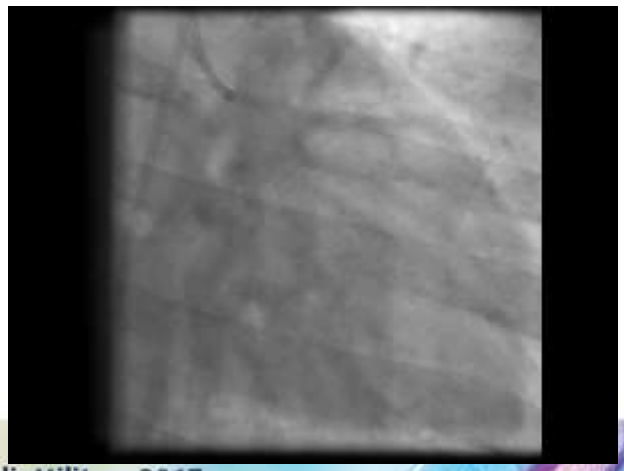
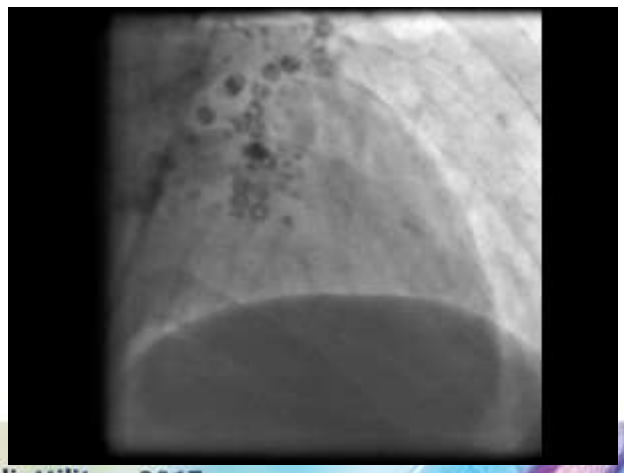
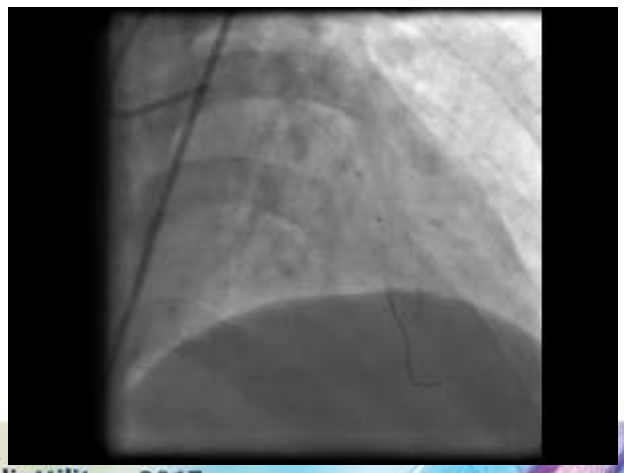
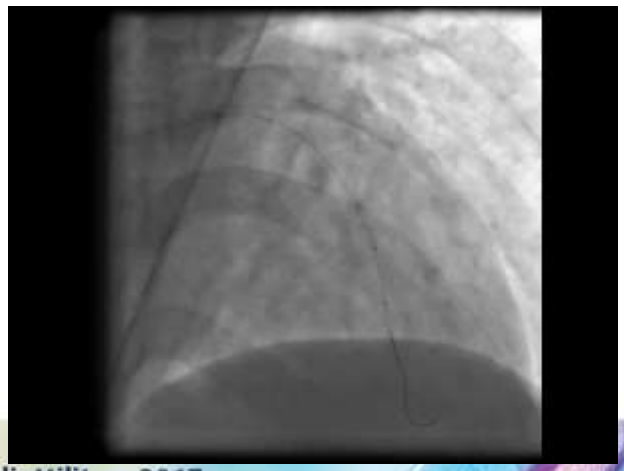




Which is the culprit?

- LAD or LCX??
- What to do next?
- How about thrombus aspiration?





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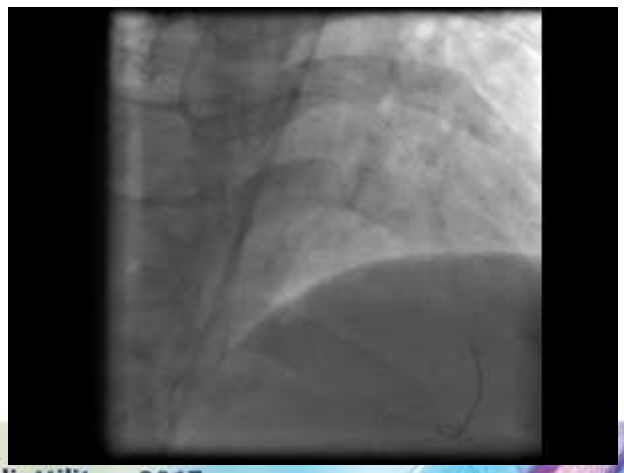

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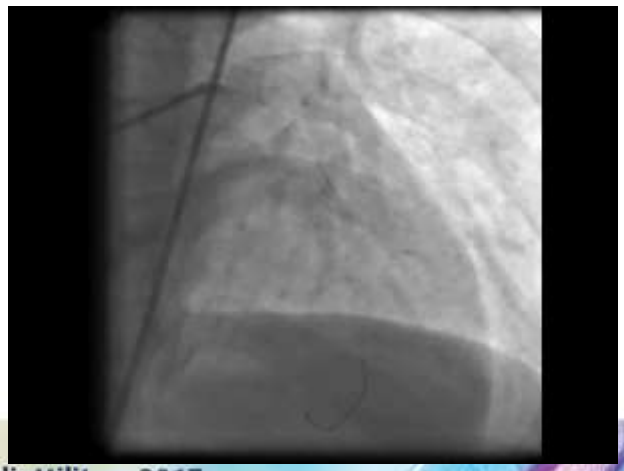
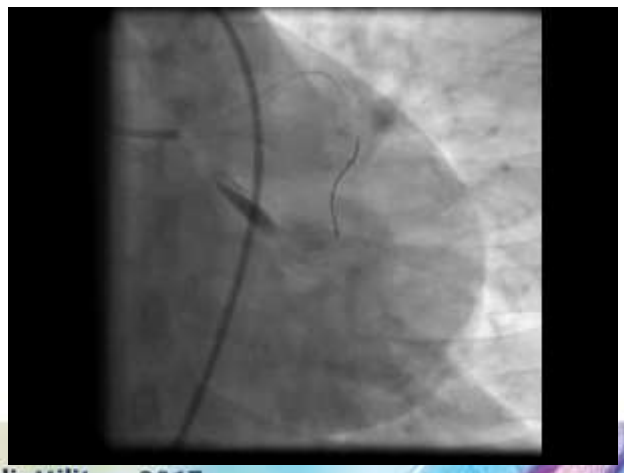




P-SCAD!!

Definition:

- SCAD is defined as a non-traumatic and non-iatrogenic separation of the coronary arterial walls, creating a false lumen. This separation can occur **between the intima and media** or **between the media and adventitia**, with intramural hematoma (IMH) formation within the arterial wall that compresses the arterial lumen, decreasing antegrade blood flow and subsequent myocardial ischemia or infarction ***(Saw J, Can J Cardiol 2013).***

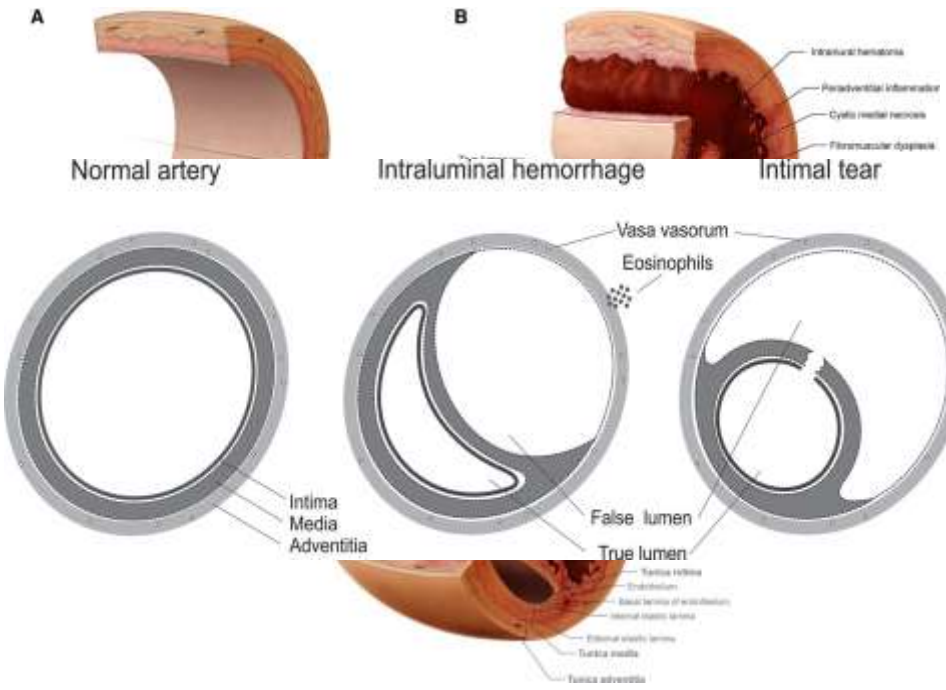
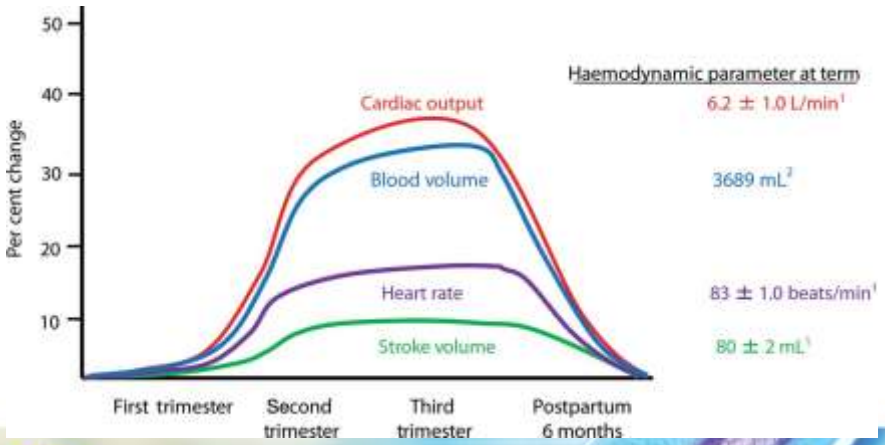
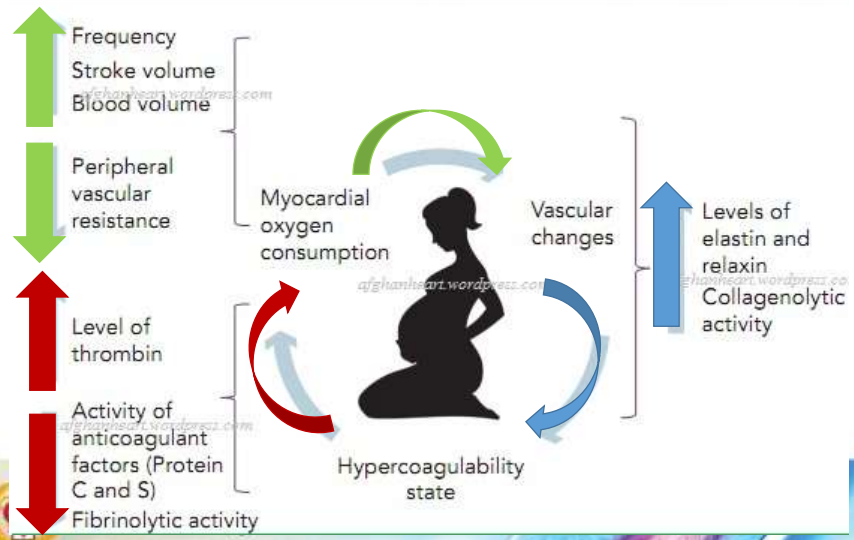


Table 1 Etiology of non-atherosclerotic SCAD
Predisposing arteriopathy
Fibromuscular dysplasia
Pregnancy: history of multiple pregnancy, peri-partum
Connective tissue disorder: Marfan's syndrome, Ehler Danlos syndrome, cystic medial necrosis, fibromuscular dysplasia
Systemic inflammation: systemic lupus erythematosus, Crohn's disease, polyarteritis nodosa, sarcoidosis
Hormonal therapy
Coronary artery spasm
Idiopathic
Precipitating stress events
Intense exercise (aerobic or isometric)
Intense emotional stress
Labor & delivery
Intense Valsalva-type activities (e.g., severe repetitive coughing, retching/vomiting, bowel movement)
Cocaine, amphetamines, met-amphetamines, beta-HCG
SCAD, spontaneous coronary artery dissection.

Cardiovascular changes during pregnancy



Cardiovascular Changes During Pregnancy



P-SCAD!!

What to do next?

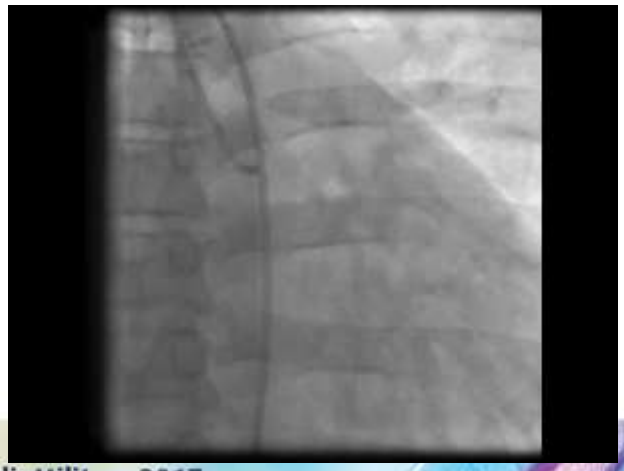
- **Patient was hemodynamically stable.**
- **Decision to stop at this point.**
- I.V. high bolus dose **Tirofiban**, then maintaining infusion for 24 hrs.
- **Clopidogrel** 75 mg, and **aspirin** 100mg.
- **Close observation** in the CCU and **second look** later during index hospitalization.

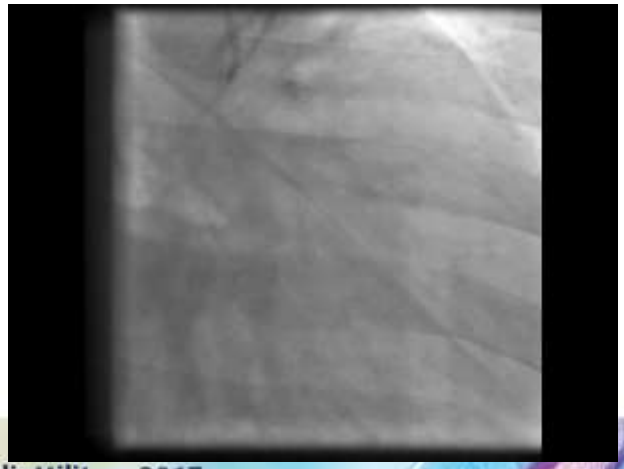
- **Immediately after primary PCI** her echo showed severe RWMA in the infero-postero-lateral and apical territory with EF 40%.

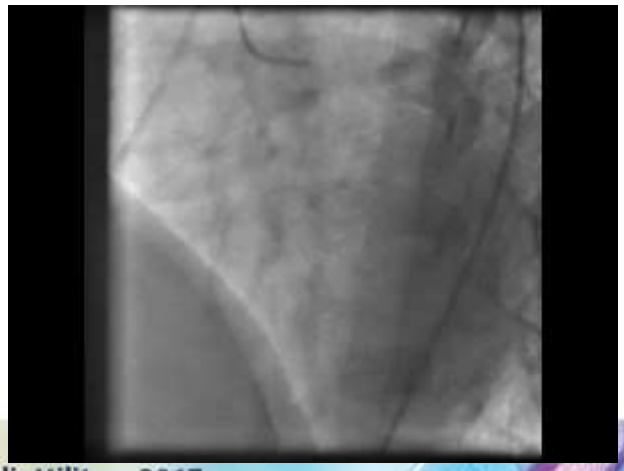
- **Follow up echocardiography** next day revealed improving wall motion with residual hypokinesia of apical and mid lateral wall and LVEF of 54% by Simpson's.

- **Lab investigations:**
  - CK: 1481 → 3147→ 577 U/L
  - CK-MB: 96→ 106 U/L
  - LDH: 252 U/L
  - CBC: TLC:16.9 HB:12.4 PLT:433
  - Electrolytes: K:4.2 Mg:2.2 Na:135
  - RBG: 5.8 mmol/L
  - S. urea: 7.1 mmol/L S. creatinine: 100.56 umol/L
  - TC: 150 mg/dl LDL-C: 98 mg/dl HDL-C: 50 mg/dl

Four days later

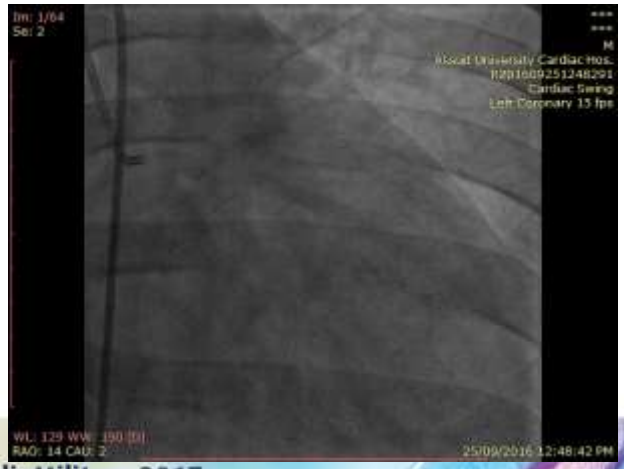






- **Hospital course:**
  - Smooth recovery, rehabilitation.
- **Medications:**
  - Aspirin 100 mg od
  - Clopidogrel 75 mg od
  - Bisoprolol 5 mg od
  - Enalapril 5 mg od
- **Scheduled for follow-up after 3 months.**

Three months later



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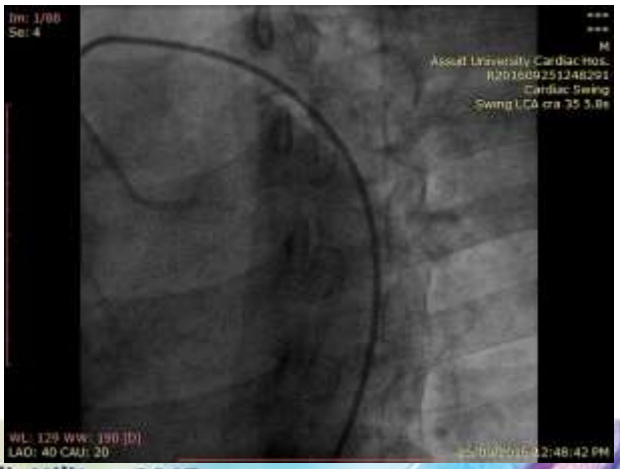

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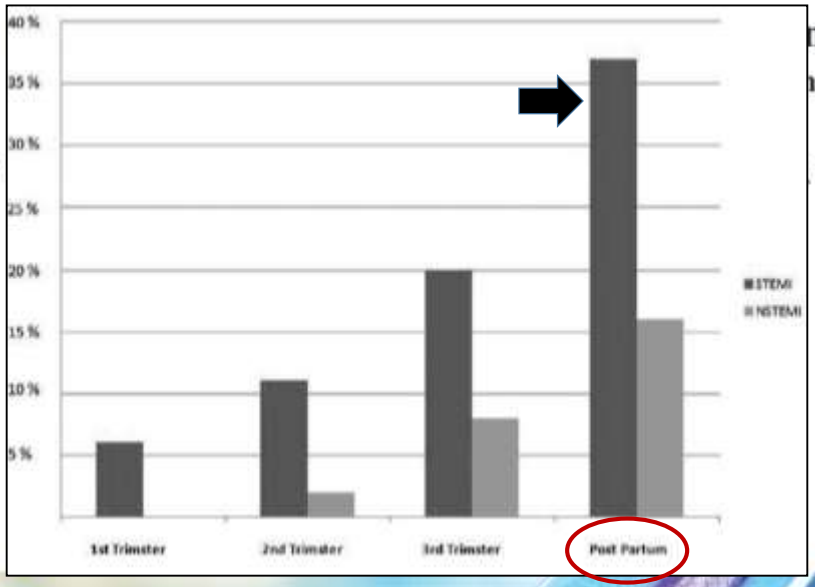

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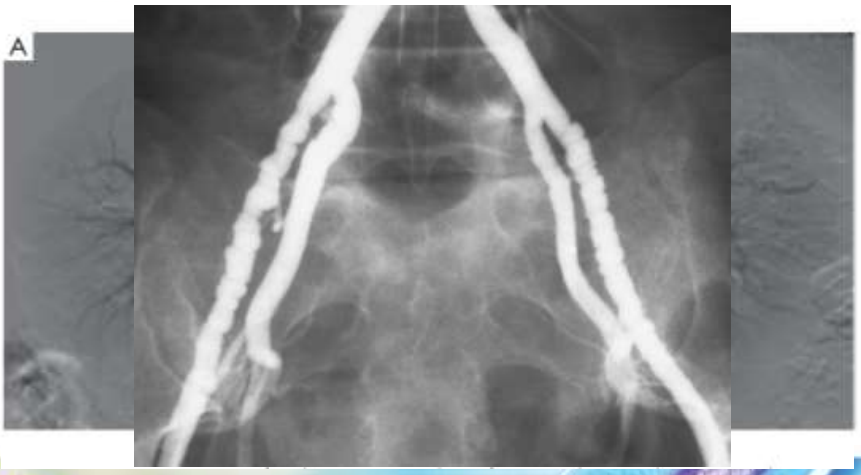
Spontaneous Coronary Artery Dissection

Association With Predisposing Arteriopathies and Precipitating



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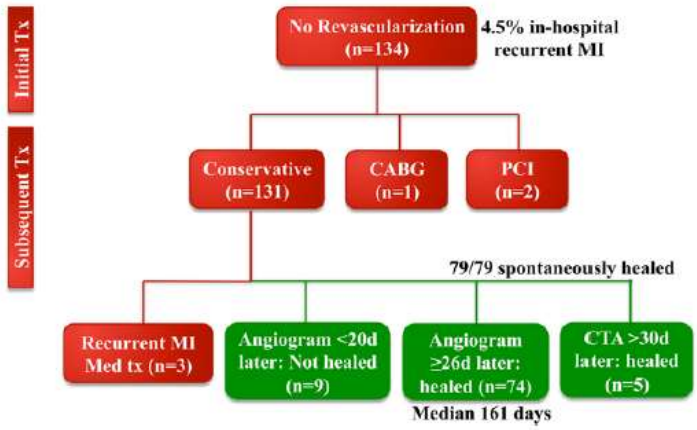
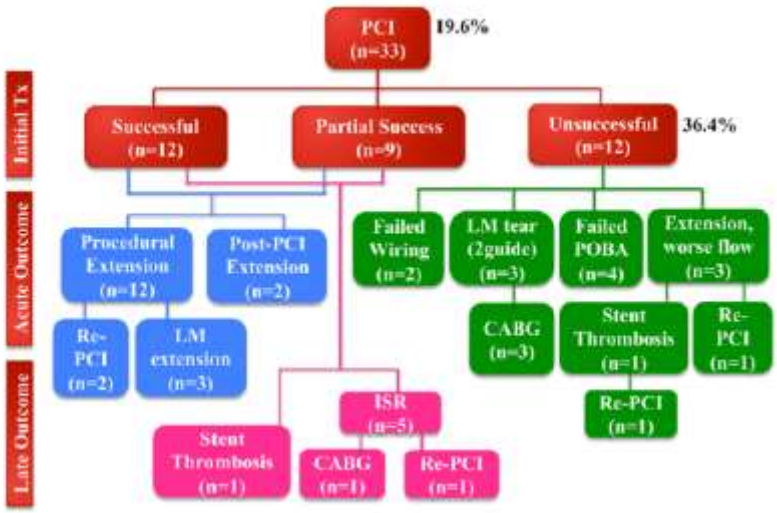


Saw J. et al, Circ Cardiovasc Interv. 2014



Saw J. et al, Circ Cardiovasc Interv. 2014

Conservative Strategy!!

Take-home message

- **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 and coronary artery disease.
- A **high level of suspicion** should be maintained to ensure timely and appropriate investigation and management.
- **Arteriopathies**, particularly **FMD**, is a frequent finding among patients with SCAD, and shouldn't be overlooked.

Take-home message

- **Urgent angiography** is crucial to establish the diagnosis.
- **Gentle contrast injections** (to minimize propagation of dissection), and consideration of initial **nonselective injections** to visualize the LM.
- **Conservative management** of stable patients with SCAD was proven successful, and is associated with spontaneous angiographic healing.
- Survivors are at risk for recurrent cardiovascular events, including **recurrent SCAD.**